STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

CONSULTANT TEAM

EERMC Comments on the Filed 2024-2026 EE Plans

Presented By: EERMC Consultant Team

Date: October 19, 2023

Outline

Regulatory Process Overview

Suggested Areas for Consideration During Regulatory Review

Next Steps

Council Discussion

REGULATORY PROCESS OVERVIEW

Plan Filing Updates

10/2: The Company filed its combined 2024 Annual and 2024-2026 Three-Year Energy Efficiency Plans with the Public Utilities Commission (PUC)

10/4: Subsequent Plan attachments and supplemental documents were filed

- Electric and Gas Benefit-Cost Ratio Models
- Rate and Bill Impact Models
- Technical Reference Manual Subsequent

10/6: The Company filed the Equity Working Group Report, which contains a summary of 2023 EWG meetings and recommendations for the 2024-2026 EE Plans

Docket Schedule

- [x] **10/2:** 2024-2026 EE Plans filed with PUC
- [ ] **10/23**: EERMC files 2024-2026 EE Plan Cost-Effectiveness Report with PUC
- [ ] **10/23**: Deadline for parties to file motions to intervene in the 2024-2026 EE Plan Docket (Commission Docket No. 23-35-EE)
- [ ] **10/30**: Deadline for EERMC testimony and documentation regarding Council budget
- [ ] **11/10**: Deadline for intervenor pre-filed testimony
- [ ] **12/12 – 12/14**: Regulatory hearings
- [ ] **TBD**: Open Meeting for PUC to issue ruling on Docket No. 23-35-EE

SUGGESTED AREAS FOR CONSIDERATION DURING REGULATORY REVIEW

Introduction

The C-Team consolidated comments to highlight several areas the Council may wish to raise for the PUC to consider during regulatory review of the 2024-2026 EE Plans

- This will form the basis for the **Council's pre-filed testimony** in the 2024-2026 EE Plan docket, alongside required pre-filed testimony on the Council's budget for 2024

Suggested areas of focus include **equity, workforce development,** and the **comparison of planned savings goals to Council-recommended Targets**

Additional areas of focus address sector-specific issues such as pre-weatherization barriers, electric-resistance heating in non-Residential buildings, and changes to the Small Business program

Equity

Sections 3.2.C and 3.2.D of the Least-Cost Procurement Standards specify that EE Plans shall ensure **all customers have equitable opportunities** to benefit from program offerings

CHAPTER 3 – Energy Efficiency and Conservation Procurement Plans

3.1 Intent

A. This Chapter provides standards and guidelines for Energy Efficiency and Conservation Procurement Plans filed with the PUC pursuant to R.I. Gen. Laws §§ 39-1-27.7(c)(4) and (5).

3.2 General Plan Design and Principles

A. Energy Efficiency and Conservation Procurement Plans (EE Plans)[10] shall be designed, where possible, to complement the objectives of Rhode Island's energy and climate programs and policies, and describe the interaction of EE Plans with these other programs, including, but not limited to, the System Reliability Procurement Plan; the Renewable Energy Standard; the Renewable Energy Growth Program; the Net Metering Program; the Long-Term Contracting for Renewable Energy Standard; all energy supply procurement plans; and Infrastructure, Safety, and Reliability Plans.

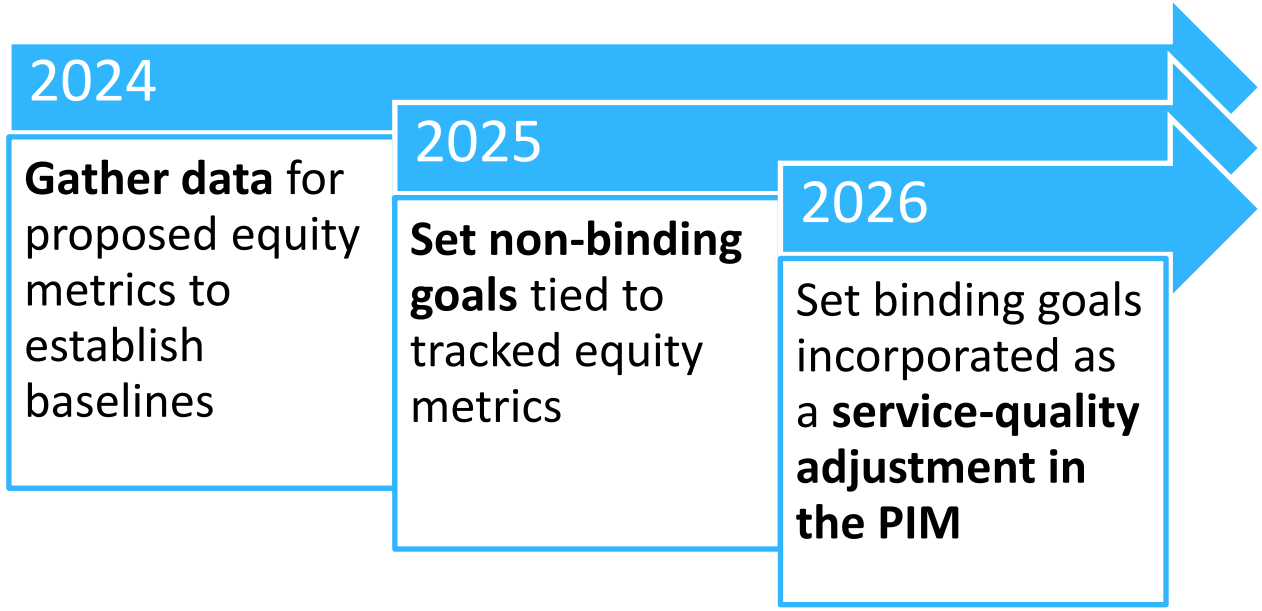
B. Innovation. EE Plans shall address new and emerging issues as they relate to Least-Cost Procurement as appropriate, including how they may meet State policy objectives and provide system, customer, environmental, and societal benefits.

C. Comprehensiveness. The distribution company shall design EE Plans to ensure that all customers have an opportunity to benefit and realize both near-term and long-lived savings opportunities, and to deliver system-wide and location-specific savings. The programs should be designed and implemented in a coordinated fashion by the distribution company in active and ongoing consultation with the Council.

D. Equity. The portfolio of programs proposed by the distribution company shall be designed to ensure that all customers have equitable opportunities to participate in the offerings of EE Plans and a fair allocation of costs and benefits.

Equity

The Council requested that the Company commit to developing an equity-based component of the Performance Incentive Mechanism (PIM) during the 2024-2026 term



This request was not included in the filed EE Plans by RIE, so it is an area the Council may wish to raise for PUC consideration

Workforce Development

Section 3.2.E of the Least-Cost Procurement Standards specifies that EE Plans shall describe recent programs and **describe how the EE Plans expand on these offerings at the appropriate level of detail**

Section 3.2.L of the standards states that the Company shall **include practical partnerships with existing educational and job training entities**

C. Comprehensiveness. The distribution company shall design EE Plans to ensure that all customers have an opportunity to benefit and realize both near-term and long-lived savings opportunities, and to deliver system-wide and location-specific savings. The programs should be designed and implemented in a coordinated fashion by the distribution company in active and ongoing consultation with the Council.

D. Equity. The portfolio of programs proposed by the distribution company shall be designed to ensure that all customers have equitable opportunities to participate in the offerings of EE Plans and a fair allocation of costs and benefits.

E. Build on prior plans. The distribution company shall describe in an EE Plan the recent energy efficiency programs offered and highlight how the EE Plan supplements and expands upon these offerings at the appropriate level of detail, including, but not limited to, new measures, implementation strategies, measures specifically intended for demand or load management, and new programs as appropriate.

K. Energy Efficiency investments shall be made on behalf of all customers. This will ensure consistency with existing program structure under which all customers pay for, and benefit from, Rhode Island's efficiency programs.

L. Efficacy. All efforts to establish and maintain program capability shall be done in a manner that ensures quality delivery and is economical and efficient. The distribution company shall include wherever possible and practical partnerships with existing educational and job training entities.

Workforce Development

Spending for **Workforce Development reduced by more than half** between the approved 2022/2023 and filed 2024 Annual Plan ($225,000 to $107,000 planned for 2024).

The Plan does not include descriptions of how RI Energy will support workforce development and diversification in areas beyond RI building energy codes

- **Additional detail on how the Company will fulfill workforce development objectives** by leverage existing entities state would be more consistent with the Standards

Plan Year	Workforce Development Budget
2022	$225,000
2023	$225,000
2024	**$107,000**
% Change	**-52%**

Comparison of Planned Savings to Targets

Section 3.2.G of the LCP Standards: "At a minimum, the distribution company shall **use any Targets and other Report recommendations approved by the PUC pursuant to Chapter 2 as a resource in developing its Three-Year Plan**."

Section 3.2.J of the LCP Standards: "EE Plans shall be developed to **propose strategies to achieve the energy efficiency savings targets** that shall be proposed by the Council…

…In addition to satisfying other provisions of these Standards, the EE Plans shall contribute to a sustainable energy efficiency economy in Rhode Island, respond to and transform evolving market conditions, strive to increase participation and customer equity, and provide widespread consumer benefits while **advancing the requirements of the Act on Climate**."

G. Plan based on potential assessments. At a minimum, the distribution company shall use any Targets and other Report recommendations approved by the PUC pursuant to Chapter 2 as a resource in developing its Three-Year Plan. The distribution company shall include in its Three-Year Plan an outline of proposed strategies to supplement and build upon these assessments of potential. The distribution company may also use other assessments or Report recommendations, provided that such assessments or Report recommendations were not previously and specifically rejected by the PUC.

J. EE Plans shall be developed to propose strategies to achieve the energy efficiency savings targets that shall be proposed by the Council and approved by the PUC for that three-year period. Such strategies shall secure energy, capacity, and system benefits and also be designed to ensure the programs will be delivered successfully, cost-effectively, and cost-efficiently over the long term. In addition to satisfying other provisions of these Standards, the EE Plans shall contribute to a sustainable energy efficiency economy in Rhode Island, respond to and transform evolving market conditions, strive to increase participation and customer equity, and provide widespread consumer benefits while advancing the requirements of the Act on Climate.

K. Energy Efficiency investments shall be made on behalf of all customers. This will ensure consistency with existing program structure under which all customers pay for, and benefit from, Rhode Island's efficiency programs.

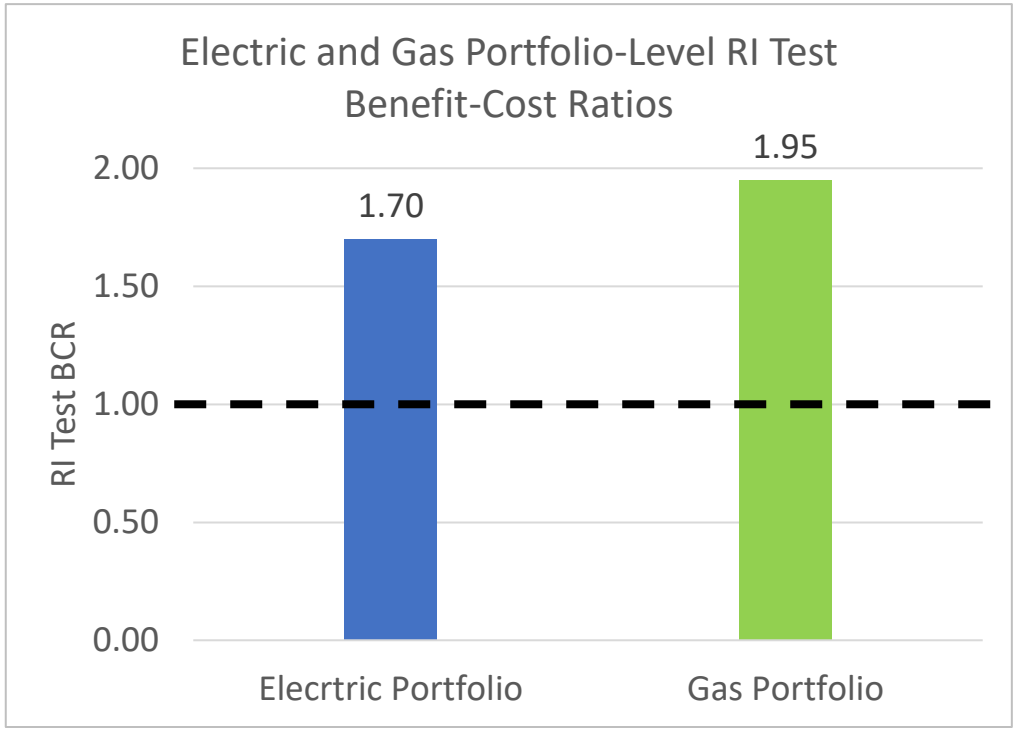
Comparison of Planned Savings to Targets

The Council acknowledges the planned increase in electric savings above 2022 actuals and the 2023 Plan.

The **filed EE Plans are robustly cost-effective and deliver significant cost savings** to Rhode Island customers relative to procuring additional supply

- The Council believes the Plans should seek to invest even more in EE to capture additional savings identified in the Council-recommended Targets

The Council recommends that the Company develop a **bottom-up assessment of the incremental savings** that can be obtained with specific additional budget allocations



Sector-Specific Areas of Focus

Section 6.2.B of the LCP Standards states: "In addition to the other roles for the Council indicated in this filing, **the distribution company shall seek ongoing input from, and collaboration with, the Council on development of the EE Plans.**"

CHAPTER 6 – Role of the Council in Plan Development and Approval

6.1 Intent

A. This Chapter provides guidelines for the Council's role in development and approval of Least-Cost Procurement Plans, System Reliability Plans, and Demand Side Management Investment Proposals.

6.2 Guidelines for Energy Efficiency and Conservation Plans

A. The Council shall take a leadership role in ensuring that Rhode Island ratepayers receive excellent value from EE Plans being implemented on their behalf. The Council shall do this by collaborating closely with the distribution company on design and implementation of the EM&V efforts presented by the distribution company under the terms of Section 3.4.B.ix and, if necessary, provide recommendations for modifications that will strengthen the assessment of distribution company programs.

B. In addition to the other roles for the Council indicated in this filing, the distribution company shall seek ongoing input from, and collaboration with, the Council on development of the EE Plans. The distribution company shall seek to receive the endorsement of EE Plans by the Council prior to submission to the PUC.

C. The Council shall vote whether to endorse the Three-Year EE Plan by August 15, 2020, and triennially thereafter, unless the distribution company has elected to include the first year of an Annual EE Plan in the Three-Year EE Plan, in which case the Council shall vote by September 15. If the Council does not endorse the Three-Year EE Plan, then the Council shall document the reasons and submit comments on the Three-Year EE Plan to the PUC for their consideration in final review of the Three-Year EE Plan.

Sector-Specific Areas of Focus

Pre-Weatherization Barriers

- The Company expressed hesitance for funding the remediation of these barriers due to requirements for program cost-effectiveness
- The Council recommends that the Company fund a **pilot or demonstration to explore the efficacy of a dedicated offering for pre-weatherization barrier mitigation**

Electric-Resistance Heating in the Commercial & Industrial Sector

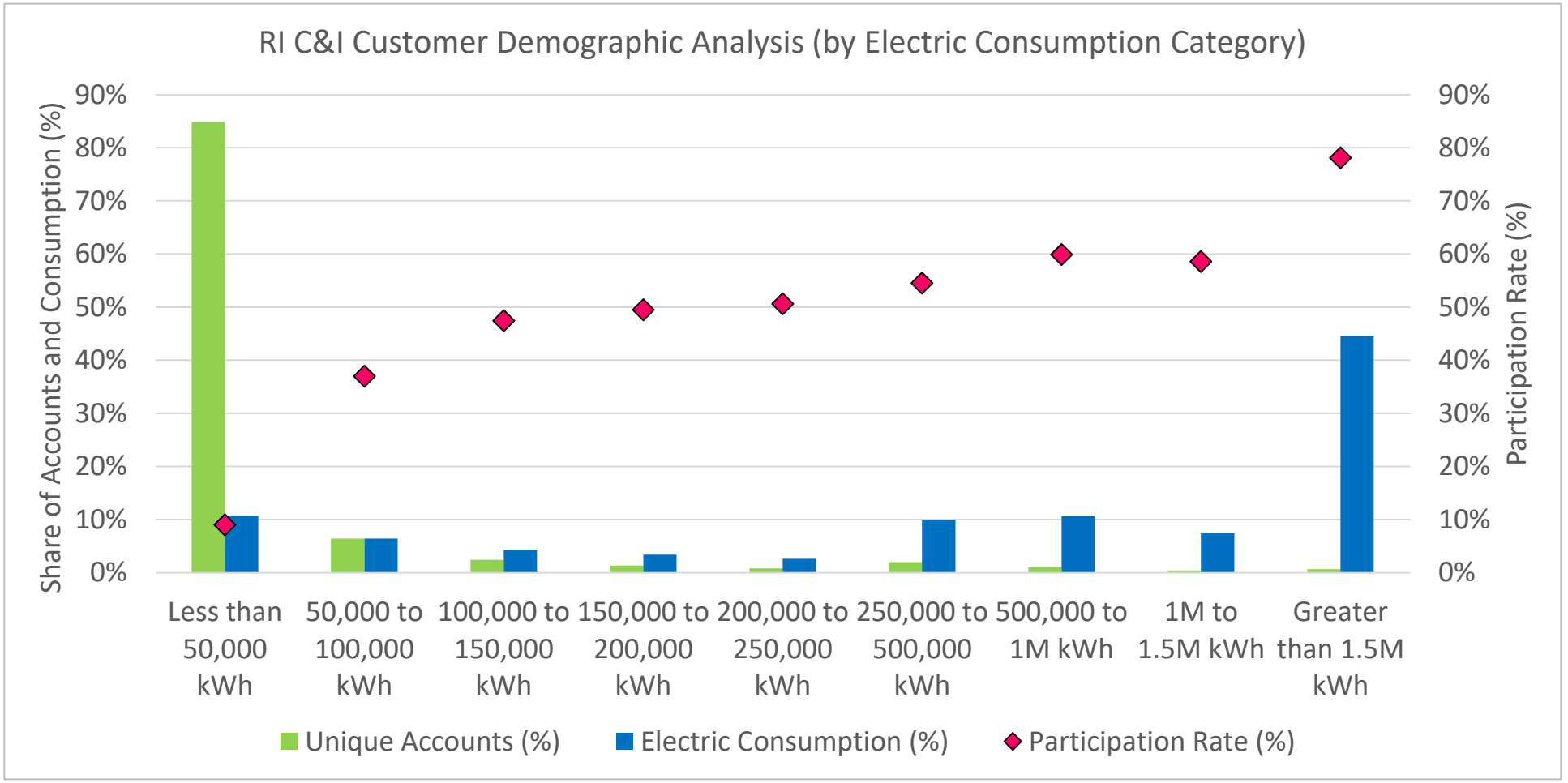
- The PUC directed the Company to develop a **plan to target electric-resistance-to-heat-pump conversions** for income-eligible customers, but there is no equivalent plan for non-Residential customers
- These conversions are highly cost-effective and may be supported by both RI Energy programs and the OER Clean Heat RI program. The EE Plans should include **greater detail on the codelivery of these programs and weatherization offerings**

Sector-Specific Areas of Focus

Small Business Direct Install Program

- The SBDI eligibility threshold was expanded from 1.0 to 1.5 million kWh annual consumption.
- The Company has confirmed the ability to report C&I participation by energy consumption category
- Customers under 100,000 annual kWh comprise largest share of C&I customer demographic profile and have the lowest participation rates
- The Council recommends that the expanded eligibility be coupled with an increase in savings goals and specific target for participation by microbusinesses to avoid unintended outcome of increased inequity

Sector-Specific Areas of Focus



Sector-Specific Areas of Focus

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NEXT STEPS

Next Steps

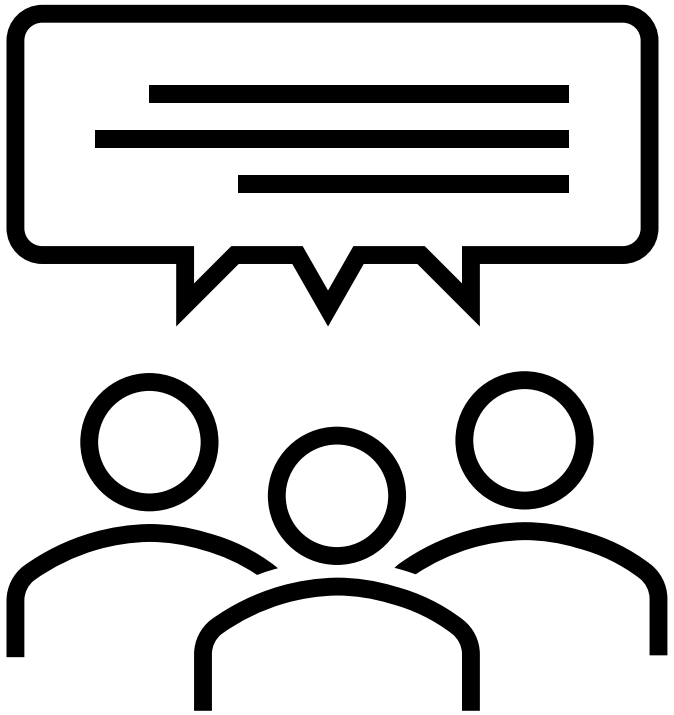
The C-Team will work with EERMC Counsel to develop pre-filed testimony regarding the Council budget.

Council feedback on the areas of focus for regulatory review will inform C-Team development of the Council's pre-filed testimony regarding the 2024-2026 Plan.

- This pre-filed testimony will also summarize the Council review process for the EE Plans.

COUNCIL DISCUSSION

Council Member Discussion



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a PPL company

Energy Efficiency Equity Update

EERMC Meeting 10/19/2023

Agenda

- Our equity commitment
- Equity working group report
- Company response and timeline
- Questions and feedback

- **Our equity commitment**
- Equity working group report
- Company response and timeline
- Questions and feedback

Equity: a key priority

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Rhode Island Energy has identified equity as one of five key priorities in its 2024-2026 three-year plan

+ Commitment to designing programs with effort to serve small business and low-and-moderate-income; gender, racially and ethnically diverse; and non-native English-speaking customers
+ 2024 annual plan includes equity commitments, activities, and metrics

Demonstrated commitment: Over the years, the Company has ramped up its focus on equity

+ **In 2021:** Company conducted thorough, equity-focused participant studies
+ **In 2022:** first year of Equity Working Group (EWG) initiated, recommendations made
+ **In 2023:** pursuing strategies to directly respond to EWG recommendations

Equity: a key priority

- Continued tracking of participation in certain energy efficiency (EE) programs by municipality
  - Conducting energy efficiency outreach and education with Rhode Island community organizations
  - Increasing cross-training of Customer Advocates, CAP agencies, and other home-visiting programs
  - Successful email and letter campaigns to moderate income customers in English, Spanish, and Portuguese
  - Funding for Residential Construction Workforce Partnership

A national leader in EE equity support

Rhode Island Energy™
a PPL company

2022 STATE SCORECARD © ACEEE

Table 17. State support of low-income energy efficiency programs

State	2021 utility spending on low-income energy efficiency programs	2021 additional state spending on low-income energy efficiency programs	2021 total low-income energy efficiency spending	2021 state spending on low-income programs per income-qualified resident*	Score (2 pts.)
Rhode Island	$18,562,300	$2,225,000[1]	$20,787,300	$79.04	2
Vermont	$10,149,278[2]	—	$10,149,278	$71.98	2
New Hampshire	$14,653,370	$17,963[3]	$14,671,333	$59.40	2
Massachusetts	$61,856,193	$6,753,303	$68,609,496	$46.48	2
Maine	$3,269,356	$10,394,193[4]	$13,663,549	$45.70	2
California	$370,805,816	$45,818,460[5]	$416,624,276	$38.33	2
District of Columbia	$4,859,366	—	$4,859,366	$30.76	2
Connecticut	$26,052,748	—	$26,052,748	$29.91	1.5
Hawaii	$8,892,837	—	$8,892,837	$26.79	1.5
Illinois	$79,114,329	—	$79,114,329	$26.75	1.5

Other equity highlights

Rhode Island Energy has strong processes in place to support income-eligible (IE) customers

+ Strong relationships with state agencies (e.g., RI Department of Human Services) allows us to better serve our income-eligible customers

In 2023, 95.6% of our IE weatherization and heating system work are leveraged with federal and state funding

+ This is an increase from 91.8% in 2022 and 76.7% in 2021
+ Helps keep system benefit charge down and allows us to serve more customers

2024 pathways to equity

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Health equity zone initiative

Justice 40 initiative

Self-attestation income verification

Residential outreach assessment

Latina radio awareness & education

Event tabling

Metrics

Spending by zip code (YE report)

Single-family participation in EnergyWise and IES programs by town

EnergyWise and IES program single-family owner vs renter splits

Cross-training of home-visiting programs (customer advocates, CAP agencies)

Other activities

EWG recommendations

Learnings from other states (MA EEAC / EWG)

State and federal funding opportunities

Initiatives and groups to watch

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SCEP
STATE & COMMUNITY ENERGY PROGRAMS

INFLATION REDUCTION ACT
HOME ENERGY REBATES
Home Efficiency Rebates Program (Sec. 50121)
Home Electrification and Appliance Rebates Program (Sec. 50122)

ENERGY earthshots
U.S. DEPARTMENT OF ENERGY

Affordable Home Energy™

MA EEAC
MA ENERGY EFFICIENCY ADVISORY COUNCIL

- Our equity commitment
- **Equity working group report**
- Company response and timeline
- Questions and feedback

Equity Working Group

The Equity Working Group (EWG) was established in 2021 to provide the Company with recommendations to better incorporate equity in the planning, design, and delivery of its energy efficiency programs

+ The 2023 EWG was comprised of thirty-three stakeholders representing a variety of backgrounds and experience and met four times starting in June
+ In 2024, the Company will hold six EWG meetings starting in early 2024
+ Plan to deliver 2024 EWG report in September 2024

2023 Rhode Island Energy Efficiency EWG Report:

+ Prepared by Green & Healthy Homes Initiative
+ Key components of report include background and member information, meeting summaries and materials, member feedback and company commentary, and recommendations
+ The report includes six key equity-and-planning-related recommendations for the Company
+ Common theme in 2023 was strong support for improvement in tracking and reporting of equity-related metrics

2023 EWG report recommendations

Key Issue	EWG Recommendations
1. **Participation Barriers:** The Company's energy efficiency programs continue to experience low participation rates among BIPOC and Low-to Moderate Income (LMI) residents.	1) Increase participation rates from residents living in the 5 Equity Communities across the EnergyWise and IES Program 2) Offer Home Energy Assessments (HEAs) in at least 4 languages other than English with the resulting Home Energy Reports translated in the household's primary spoken language by the end of 2024
2. **Multifamily Barriers:** Multifamily housing has always been a difficult area for energy efficiency program implementers to reach due to multiple issues including the split incentive issue between landlords and renters.	1) Increase participation rates among EnergyWise Multifamily and Income Eligible Multifamily Programs statewide, with a focus on the 5 Equity Communities and/or Justice 40/EJ Communities 2) Increased focus on renter-specific resources, including but not limited to information on what is available for renters and renter-friendly DIY home improvements. While noted that it can be difficult to distinguish who is a renter or owner at the property level, the Company should investigate ways to better track this
3. **Weatherization Deferrals:** The presence of housing conditions that prevent or defer enrollment in weatherization programs in RI are common. RISE reported of the 11,930 homes receiving assessments through Q2 of 2023, 54 percent of those households had pre-weatherization barriers, and only 24.6 percent of those barriers were resolved.	1) Close the gap in the Conversion to Weatherization ratio between EnergyWise and IES programs by XX% over the next XX months 2) Continue to leverage and provide additional funding for pre-weatherization barrier remediation 3) Engage with the new State Department of Housing, cities/towns code officers, and/or housing courts. Better coordination between agencies can potentially address the pre-Wx issue

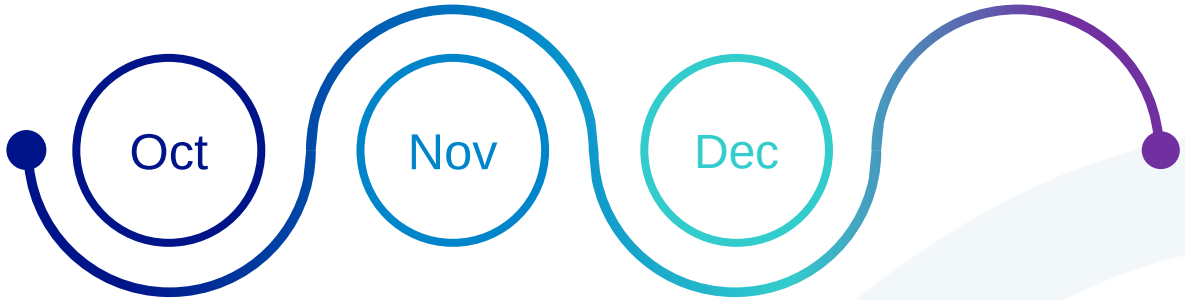
2023 EWG report recommendations

Key Issue	EWG Recommendations
4. **Workforce Development/Training:** The RI EWG continues to have discussions and develop recommendations for the Company on equitable workforce development and training opportunities to better serve and work with Minority and Women Owned Business Enterprises (MWBEs)s. The Company must focus on building a skilled workforce that better reflects the communities that it serves.	1) Increase the % of BIPOC workforce training participants and contractors that reside in the 5 Equity Communities (or Justice 40/EJ Communities) year over year by XX% 2) Increase # of and capacity of minority contractors by XX% in 2024 (create multi-year targets) 3) Increase the # and size of contracts awarded to MWBEs who conduct energy audits and weatherization services by XX% in 2024
5. **Microbusinesses and Small Businesses:** Microbusinesses and small businesses (<250,000 annual kWh electric consumption) comprise the largest share of unique C&I customer accounts but have the lowest participation rates among C&I customers due to several challenges including split incentives, lack of technical capacity, and limited capital.	1) Leverage findings from the 2023 Small Business Process Evaluation to improve program strategy 2) Conduct Main Street efforts in all five communities identified in the 2024-2026 EE Plan Narrative 3) Develop translated program materials, as suggested in the SBDI Process Evaluation
6. **Metrics Tracking/Reporting:** Based on RI EWG member feedback, the Company should significantly strengthen its equity-related data collection and reporting on key metrics tied to RI EWG recommendations.	1) Through Q4 2023, work with the RI EWG and the Company to come to an agreement on 2024 metrics and targets the Company can commit to tracking and achieving

- Our equity commitment
- Equity working group report
- **Company response and timeline**
- Questions and feedback

Targeted timeline to meet commitments

2023



EERMC

EWG report findings and company approach

EERMC

Suggested v. current metrics, gather feedback from EERMC

EERMC

Company response and prioritization of EWG report recommendations for 2024

2024

ITERATION

Iterate metrics with EWG members, begin to stand up feasible reporting processes

TRACKING

Begin tracking and reporting out on handful of selected metrics, start EWG 2025 planning meetings

REPORTING

First equity metrics report issued, 2024 EWG report issued

PLANNING

Begin planning for 2025 EWG meetings

- Our equity commitment
- Equity working group report
- Company response and timeline
- **Questions and feedback**

2023

Rhode Island Energy Workforce Development

[bw] RESEARCH PARTNERSHIP

Contents

Introduction

Having built a sustainable and growing state-wide energy efficiency sector, the state of Rhode Island and Rhode Island Energy (RI Energy) are well positioned to take advantage of a dramatic expansion in government incentives and programs at both the state and federal levels. The accompanying deployment of and innovation in energy efficiency technologies will boost economic growth and drive job growth in the state. At the same time, this evolving energy efficiency landscape brings a host of new challenges requiring a separate set of strategies and approaches. One opportunity, and challenge, is to build and sustain an energy efficiency workforce in the state that can both foster that ongoing growth and contribute to increased access to and equity in the jobs, investment, and savings that energy efficiency brings.

To help prepare for a changing energy efficiency marketplace, RI Energy tasked BW Research with completing a workforce needs assessment for Rhode Island's energy efficiency industry in order to meet four objectives:

1) Quantify the current energy efficiency workforce in Rhode Island.
2) Uncover the needs of and opportunities for energy efficiency businesses and workers as well as potential energy efficiency workers.
3) Highlight workforce development gaps and potential solutions in the state.
4) Identify potential roles for RI Energy in supporting energy efficiency workforce development in the state.

To support RI Energy in developing a workforce assessment that undergirds and bolsters the state's energy efficiency sector, BW Research used a number of research techniques:

1) Primary data collection
    a. Data assessment of RI energy efficiency workforce
    b. Surveys (employer, current worker, and potential worker)
    c. Executive interviews (trainers, schools and colleges, businesses, community organizations, labor-affiliated groups, and state programs)
2) Inventory of workforce training and assets inventory (including wraparound services, funding sources, and career development programs)
3) Literature review of previous and current clean energy workforce research focused on the state

This report begins by quantifying the existing energy efficiency workforce. Then, using surveys and interviews, it uncovers areas of growth and weakness in the labor supply; important roles, skills, and certifications needed by the workforce; and takeaways from surveys of the current and potential energy efficiency workforce and energy efficiency employers. This report next explores the workforce development ecosystem and training landscape to detail the current state of Rhode Island's workforce ecosystem assets and compares these findings to anticipated needs. The subsequent section captures the key takeaways from this body of research and provides a number of next-step recommendations. This report concludes by offering six in-depth career profiles useful to those recruiting or being recruited into the energy efficiency sector.

Executive Summary

The Rhode Island energy efficiency workforce is diversified by technology but not by demography, and employment levels are recovering from COVID-19 impacts but stabilizing at 2016 levels. Rhode Island's energy efficiency economy employs about 8,000 workers and is still recovering from the impacts of COVID-19, with 19 percent fewer workers than at its 2020 peak. While this is a weaker recovery than seen in Connecticut, Massachusetts, and the US overall, the size of the Rhode Island energy efficiency workforce has stabilized and is 50 percent larger than it was six years ago. It is unclear why Rhode Island is recovering more slowly. The Rhode Island energy efficiency workforce is diversified by sub-technology and is recovering staffing levels across all sectors. The efficient lighting sector is maturing, but this has not translated to workforce reductions. Energy efficiency workers trend white and male, which aligns with race and gender demographics in other state energy efficiency workforces.

> *Energy efficiency work isn't obvious. Is it installing insulation? Is it engineering? Is it planning a home renovation? Am I managing a building?"*
> **- Training Provider**

Energy efficiency businesses in Rhode Island have been hiring and expect to hire more workers with different skills sets to grow their businesses. Nearly three-quarters (71 percent) of surveyed Rhode Island energy employers have hired energy efficiency workers in the past year, although most businesses have hired fewer than five workers in that period. Over the next 12 months, 40 percent of these businesses expect to expand their capacity by hiring new workers with different energy efficiency skills and experience. New and expanded federal policies will drive significant investment in energy efficiency, likely increasing demand for energy efficiency workers in Rhode Island. These jobs will be mostly high-quality, family-sustaining jobs with strong benefits. Nearly all energy efficiency workers (95 percent) like their job and the benefits on offer, and few see obstacles to career advancement.

> *You're going to need thousands of people to do this right."*
> **- Contractor**

Employers expect hiring to be difficult, at least in the near term, as it is taking place in a tight labor market with high competition for these workers. Over 90 percent of businesses report difficulty in hiring energy efficiency workers generally, with extremely high numbers reporting significant difficulty in hiring heating, ventilation, and air conditioning (HVAC) technicians and heat pump installers. This is expanding the length of time it takes to hire a new worker, now anywhere from one to three months for HVAC technicians and heat pump installers. Two primary reasons given by employers for this difficulty are (1) a lack of labor supply overall and (2) a lack of prospective workers with the experience to immediately perform the job upon hire.

> *We don't have a pipeline – we will take anybody with a vague interest."*
> **- Contractor**

At present, there is not significant interest among future workers in filling energy efficiency job openings. Only 15 percent of surveyed prospective workers (defined as unemployed or interested in moving jobs) had heard of "energy efficiency jobs". Just six percent were very likely to apply for an energy efficiency job, and only two percent were aware of training programs. There could be significant overlap between the types of jobs and benefits that potential workers are looking for and how current efficiency workers describe their jobs, but this needs to be communicated across multiple platforms and stakeholders.

> *Energy efficiency jobs are currently not a high priority for folks in the community, but they would be interested in learning more if they learned what energy efficiency jobs can offer."*
> **- Community Advocate**

Rhode Island may struggle to meet its energy efficiency workforce needs due to a lack of focus from key stakeholders and a need for greater coordination across the state's energy efficiency workforce ecosystem. According to the state leaders and experts who participated in interviews, Rhode Island is behind the curve in expanding its energy efficiency workforce to accommodate future growth. Stakeholders do not generally collaborate, and there is an overall lack of awareness about energy efficiency job opportunities. The state would benefit from stronger leadership, perhaps from a single entity that can bring stakeholders together. Educational institutions face similar challenges around meeting future energy efficiency workforce needs. Several interview participants highlighted specific groups as candidates for leadership, including the Governor's Workforce Board and RI Energy.

> *There's no collaboration or established meetings between policymakers and educators or training directors. There's nobody who's actually in charge of ensuring that these trainings take place."*
> **- Educator**

The state has positive attributes that will be helpful in creating well-functioning energy efficiency workforce development programs. There is a breadth of funding options, which organizations typically stack to develop and fund programs. Funding gaps are primarily focused on issues connected to equity, such as pre-weatherization funding, wraparound services, and recruitment. Over two hundred training programs are available to workers, one-third of which are located physically in-state. Most are concentrated in Providence, leaving gaps in the western and southern parts of the state. Many training programs focus on occupational areas of need, such as HVAC workers, although some occupations would benefit from more direct targeting.

> *The training components are already out there; we just need more urgency and improved awareness of those jobs and trainings."*
> **- Union Representative**

Based on the findings of this workforce assessment, **this report offers the following recommendations for advocates and practitioners operating at the intersection of energy efficiency and workforce issues:**

1) Prioritize increasing the pipeline of future energy efficiency workers through education, communications, and information sharing**.**

2) Pursue a comprehensive approach that balances education, training, and certifications, while getting new workers the foundational, in-the-field experience they lack.

3) Actively support efforts to secure initial energy efficiency employment, working with employers and educators.

> *I have not seen any energy efficiency-related job opportunity at any career day I've been to."*
> **- Educator**

4) Strengthen educational institutions' emphasis on energy efficiency.

5) Embark on equity-related actions to further increase the pipeline of workers and bring higher-quality job opportunities to underserved communities through expanded alternative pathways, language and wraparound support, and community partnerships.

> *Not having language options for trainings is keeping those non-English speaking contractors at the bottom of the pile."*
> **- Contractor**

6) Encourage leadership and collaboration across the Rhode Island energy efficiency workforce development ecosystem**.**

7) Leverage and scale programs and success stories that already exist in the state.

RI Energy is an important stakeholder in developing Rhode Island's energy efficiency workforce, and by working in partnership with many others, it can have considerable impact. Near-term actions to address energy efficiency workforce needs include the following:

1) *Encourage workforce ecosystem coordination and leadership* by advocating for increased emphasis on energy efficiency and workforce development within relevant state-wide entities and supporting emerging leadership efforts in the state around energy efficiency workforce development.

2) *Support marketing efforts and pipeline building* by further leveraging RI Energy's marketing and communications capacity with credible information resources and campaigns and by partnering with groups, especially those serving underserved communities, to raise awareness about the value and opportunities of energy efficiency jobs.

3) *Champion energy efficiency-related programs at all levels of education* by increasing support for specific programs in high schools and vocational-technical schools, including curriculum development, instructor recruitment, internships, and equipment needs.

4) *Partner with contractors* to expand worker recruitment by communicating the benefits of energy efficiency careers, funding career navigators and wraparound supports, and educating contractors about the opportunities in energy efficiency.

> *It's about creating equal opportunity to participate in this industry. The results come over time with consistency and persistence."*
> **- Community Advocate**

Rhode Island Energy Efficiency Employment

Rhode Island's energy efficiency employment is stable, having recovered from a significant drop owing to the COVID-19 pandemic, with jobs found across different energy efficiency sub-technologies. Demand for energy efficiency workers is expected to increase dramatically over the coming decade, but tight overall labor market conditions will continue in the near term.

Total Energy Efficiency Employment

The state of Rhode Island defines energy efficiency as the following six sub-technologies: advanced building materials and other[1] efficient lighting, ENERGY STAR appliances, microgrid, storage, and smart grid. While microgrid, storage, and smart grid jobs are typically included within the transmission and distribution or clean grid and storage sectors in the USEER and other clean energy industry reports, they are included in the energy efficiency sector for this report, per Rhode Island's clean energy technology definition of energy efficiency, which can be found in the in the 2021 Rhode Island Clean Energy Jobs Report, available at https://energy.ri.gov/climate-change/clean-energy-jobs.

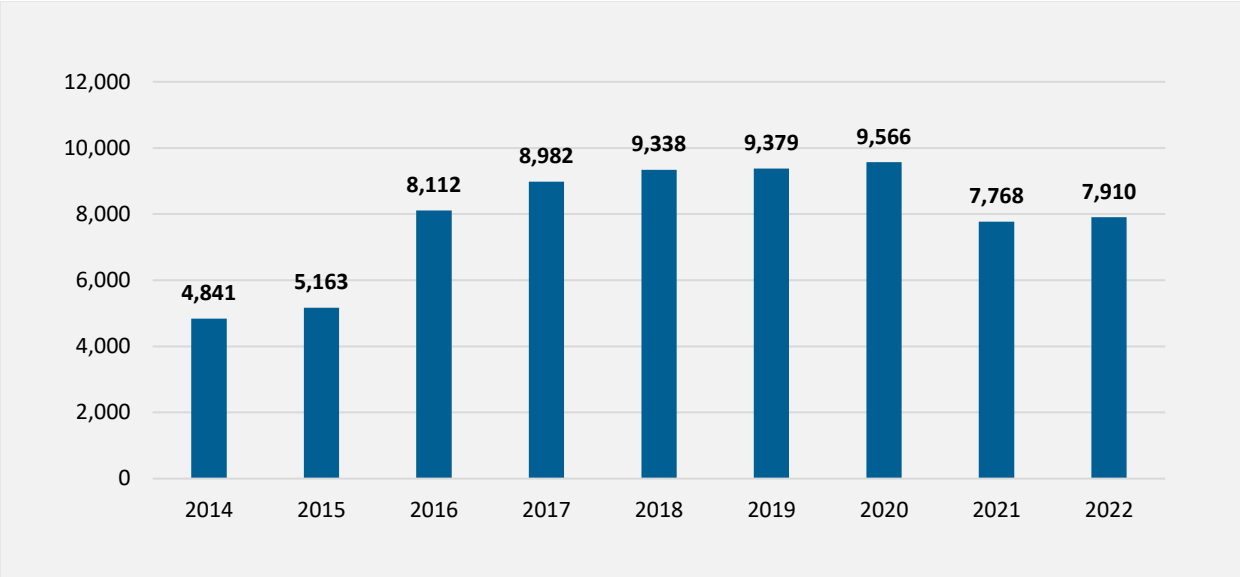
Prior to the COVID-19 pandemic, the energy efficiency industry had grown every year since 2014.[2] From 2014 through 2020, energy efficiency jobs rose from 4,841 to 9,566, an increase of 98 percent. However, in 2021 energy efficiency jobs decreased to 7,768, due to the COVID-19 pandemic, and only increased two percent in 2022 to 7,910 jobs.[3]

[1] "Other" energy efficiency includes variable speed pumps, other design service, software, energy auditing, rating, monitoring, metering, leak detection, policy or non-profit work, and consulting that cannot be specific to a detailed sub-technology.

[2] BW Research has supported Rhode Island in measuring the state's clean energy employment since 2014, publishing annual Clean Energy Industry Reports through the Rhode Island Office of Energy Resources. This assessment of the energy efficiency employment landscape draws on those official state statistics and the long-standing US Energy and Employment Report (USEER) and accompanying Energy Employment by State reports, published annually by the US Department of Energy (DOE), with research conducted by BW Research since 2014. For more information on the Rhode Island Clean Energy Industry Reports, visit https://energy.ri.gov/climate-change/clean-energy-jobs. For more information on the USEER, visit https://www.energy.gov/policy/us-energy-employment-jobs-report-useer.

[3] The employment data in this report represent the prior year's employment number per the precedent set by the Rhode Island Office of Energy Resources reporting in the Rhode Island Clean Energy Industry Report. https://energy.ri.gov/climate-change/clean-energy-jobs

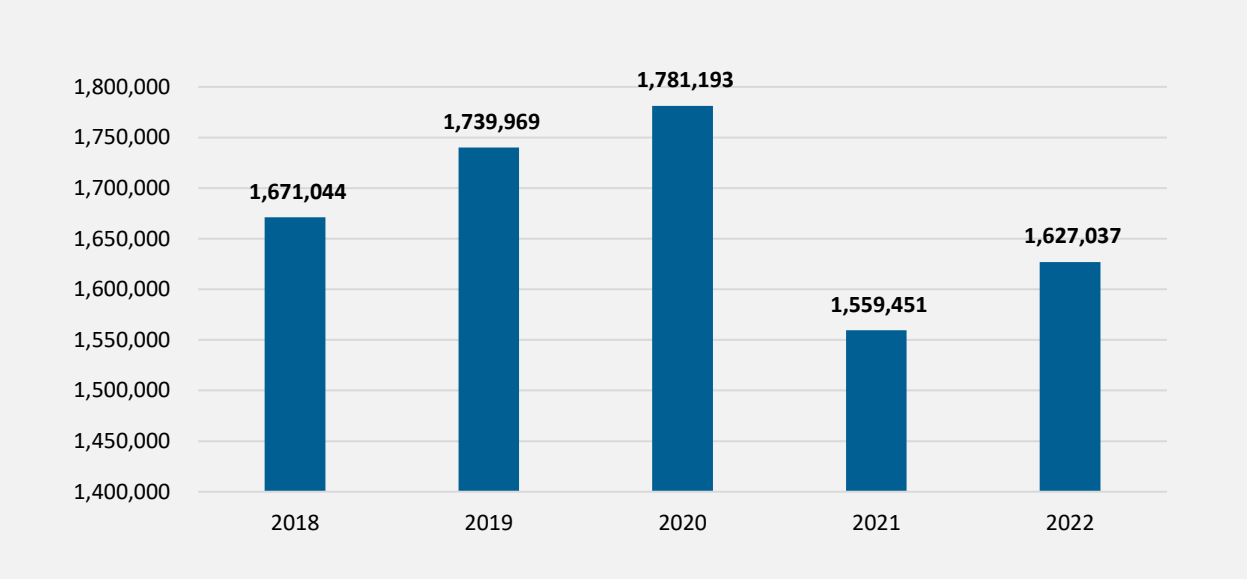
Figure 1. Total Rhode Island Energy Efficiency Employment, 2014-2022[4]



The COVID-induced decrease of 19 percent in energy efficiency employment from 2020 to 2021 was steeper than the 12 percent fall seen nationally, and state energy efficiency employment has been slower to recover than neighboring states Connecticut and Massachusetts.

[4] Figures 1 through 3 are based on data collected by BW Research for the USEER and accompanying Energy Employment by State reports for the years 2014-2022 (see note 2). The employment numbers given in these figures, however, differ from those published in the USEER reports because they have been calculated in line with Rhode Island's definition of "clean energy technology," which differs from the definition used by the DOE. Rhode Island's clean energy technology definition can be found in the 2021 Rhode Island Clean Energy Jobs Report, available at https://energy.ri.gov/climate-change/clean-energy-jobs. For more discussion of how these numbers were calculated, see Appendix A: Methodology. Employment extrapolations are based off BLS QCEW and survey data, resulting in totals that carry precise decimal values. As a result, some employment totals for tables in the report will sum differently due to rounding.

Figure 2. Total National Energy Efficiency Jobs, 2018-2022[5]



Energy Efficiency Employment by Technology

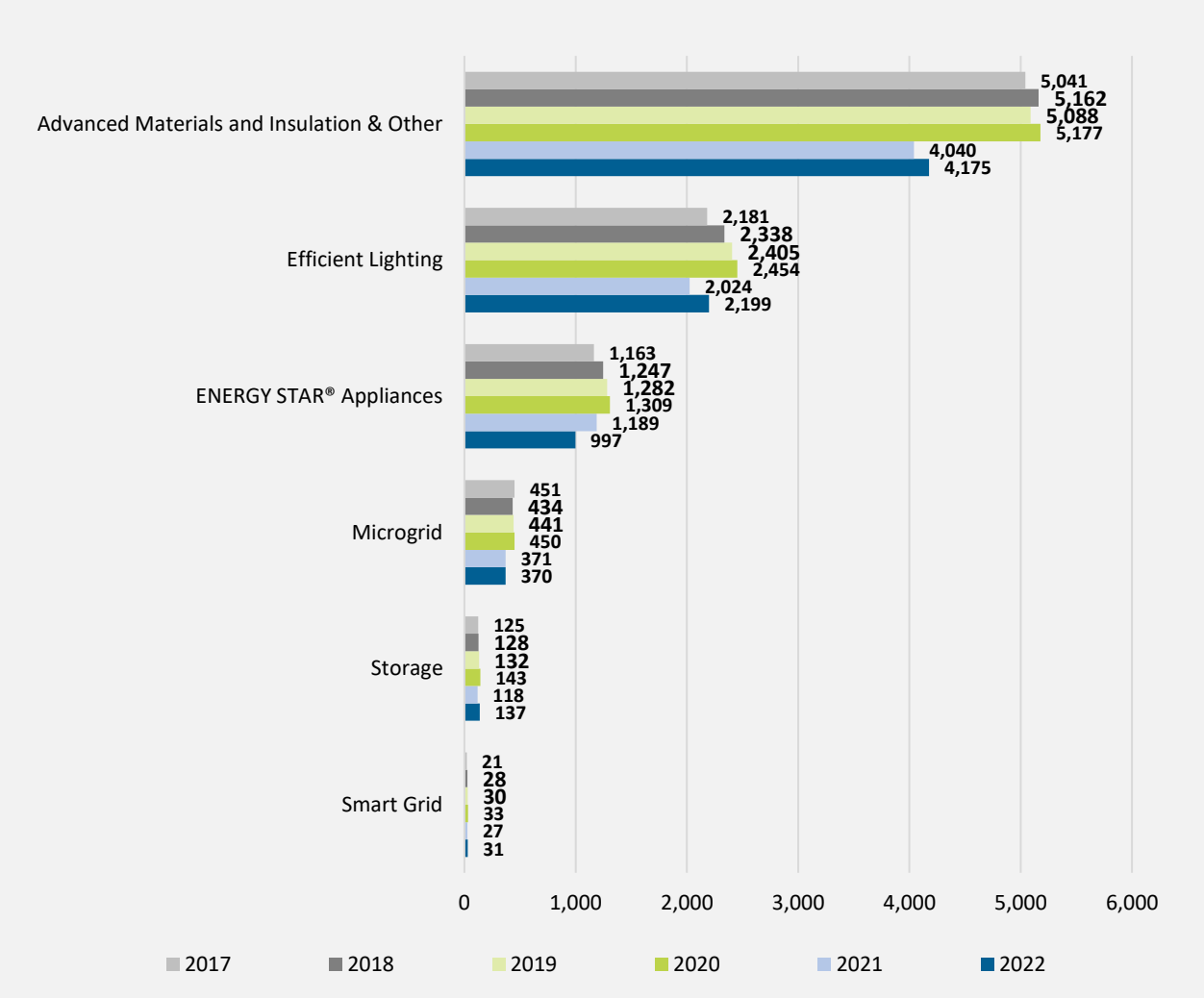
The Rhode Island energy efficiency sector employs workers across a number of technologies, including advanced materials and insulation, efficient lighting, ENERGY STAR appliances, microgrid, storage, and smart grid.[6] The energy efficiency sector includes jobs in the production and installation of products that increase energy efficiency and the provision of services that reduce energy consumption across homes and businesses. These jobs include building design and contracting services that provide insulation, improve natural lighting, and otherwise reduce energy consumption in residential and commercial areas. Additionally, this sector includes employment in the manufacturing of ENERGY STAR-labeled products. Job estimates for the energy efficiency sector do not include retail employment.

Advanced materials & insulation and other is the largest of the sub-technologies, employing 4,175 workers in 2022 (53 percent of energy efficiency jobs in Rhode Island). Efficient lighting follows, with 2,199 jobs in 2022 and 28 percent of the energy efficiency workforce. While the energy efficiency lighting sector may be reaching maturity in Rhode Island, job creation in this sub-technology remains relatively stable, especially in comparison to the advanced materials & insulation and ENERGY STAR appliances workforces. Storage and smart grid remain a post-COVID bright spot, albeit off a low base.

[5] Figure 2 based on data collected by BW Research for the USEER 2018-2022 (see note 2). The employment numbers given in these figures, however, differ from those published in the USEER reports because they have been calculated in line with Rhode Island's definition of "energy efficiency" which differs from the definition used by the DOE. Rhode Island's energy efficiency definition and can be found in the in the 2021 Rhode Island Clean Energy Jobs Report, available at https://energy.ri.gov/climate-change/clean-energy-jobs. For more discussion of how these numbers were calculated, see Appendix A: Methodology

[6] While microgrid, storage, and smart grid jobs are typically included within the transmission and distribution or clean grid and storage sectors in the USEER and other clean energy industry reports, they are included in the energy efficiency sector for this report, per Rhode Island's energy efficiency technology definition, which can be found in the in the 2021 Rhode Island Clean Energy Jobs Report, available at https://energy.ri.gov/climate-change/clean-energy-jobs.

Figure 3. Rhode Island Energy Efficiency Employment by Sub-Technology, 2017-2022[7]

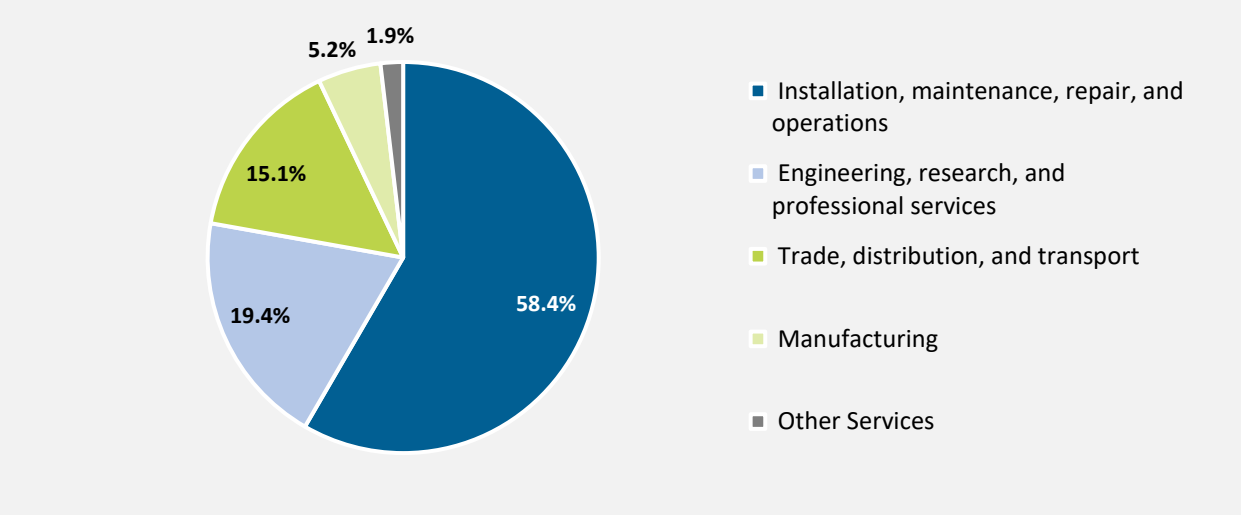


Employment by Value Chain

Installation, maintenance, repair, and operations jobs accounted for 58 percent of Rhode Island energy efficiency jobs in 2022. Engineering, research, and professional services was the second-largest segment, accounting for 19 percent of jobs, followed by trade, distribution, and transport at 15 percent.

[7]Data adapted from the US Department of Energy, Energy Employment by State reports for the years 2017-2022. While microgrid, storage, and smart grid jobs are typically included in the "transmission, distribution, and storage" or "clean grid and storage" sectors for the DOE employment reports and other clean energy industry reports, they are included in the energy efficiency sector for this report per Rhode Island's clean energy technology definition. In addition, in the DOE reports, microgrid jobs are reported within a category of "microgrid and other," but the microgrid jobs have been split out here. Likewise, job numbers for "Advanced Materials & Insulation" and "Other" energy efficiency jobs are listed separately in the DOE reports, but they are combined into the Advanced Materials and Insulation & Other" category here. In this category, "Other" includes jobs relating to variable speed pumps, other design service, software, energy auditing, rating, monitoring, metering, leak detection, policy or non-profit work, and consulting that cannot be specific to a detailed sub-technology.

Figure 4. Rhode Island Energy Efficiency Employment by Value Chain, 2022[8]



Within the five Rhode Island counties, Providence County had 4,425 jobs across the five-energy efficiency sub-technologies in 2021. It is the largest of all counties by population and accounts for 56 percent of all energy efficiency jobs across the state. Kent County followed with just under 1,600 energy efficiency jobs. Relative to overall population, Kent County has the highest share of energy efficiency workers as a share of overall county-wide employment across all technologies, with Providence County having the most workers overall. Generally, total energy efficiency jobs represent about one percent to two percent of all jobs in each county by working population.

Table 1. Rhode Island Energy Efficiency Jobs by County, 2021[9]

	Total Workforce (2021)	Smart Grid	Storage	Microgrid	ENERGY STAR & Efficient Lighting	Advanced Materials & Insulation and Other
Bristol County	14,635	< 10	< 10	< 10	75	102
Kent County	74,762	< 10	30	74	764	741
Newport County	43,044	< 10	< 10	16	274	377
Providence County	283,748	20	80	269	1,656	2,400
Washington County	58,256	< 10	13	40	350	443
Undefined Counties	14,175	< 10	< 10	16	77	122

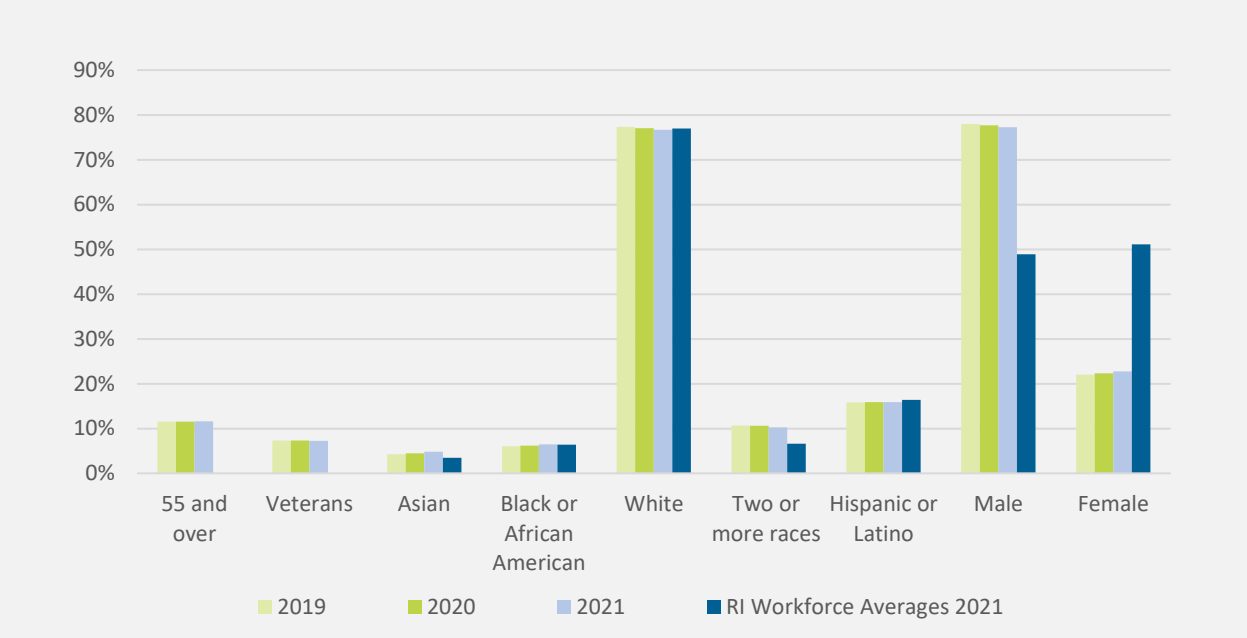
[8] Rhode Island Clean Energy Industry Report 2022, available at: https://energy.ri.gov/climate-change/clean-energy-jobs.

[9] US Department of Energy, USEER County-level Data 2021, accessed 06, 2023. https://www.energy.gov/media/286852. Total employment per county sourced from US Bureau of Labor Statistics, County Employment and Wages in Rhode Island—Second Quarter 2022, available at: https://www.bls.gov/regions/new-england/news-release/countyemploymentandwages_rhodeisland.htm.

Diversity and Environmental Justice in Energy Efficiency Jobs

Rhode Island's energy efficiency workforce lacks diversity, primarily among gender. In terms of race, it generally matches Rhode Island's overall workforce average. This demographic make-up is similar to other construction-heavy renewable technologies.

Figure 5. Rhode Island Energy Efficiency Workforce and State Workforce Average Demographics, 2019-2021[10]



[10] E4TheFuture's "Energy Efficiency Jobs in America – Rhode Island" reports, 2020-2022, where report publication year represents the previous year's data, accessible at https://e4thefuture.org/download/rhode-island-resources/

Rhode Island Energy Efficiency Business and Workforce Surveys

To better understand the energy efficiency businesses' perspective on workforce issues, BW Research conducted a survey of energy efficiency employers throughout Rhode Island.[11] The results of this survey are provided below. In addition, BW Research conducted an occupational workforce survey of current Rhode Island energy efficiency workers to explore their experiences of and attitudes toward energy efficiency jobs, such as their educational attainment, compensation and benefits, important areas of knowledge or experience, career satisfaction, and challenges to career advancement. BW Research also conducted a survey of workers who are either out of work or interested in new employment opportunities to gauge awareness of energy efficiency job opportunities and worker preferences regarding job benefits, working conditions, and recruiting sources. The results of both worker surveys are reported in subsequent sections of this report.

Energy Efficiency Businesses

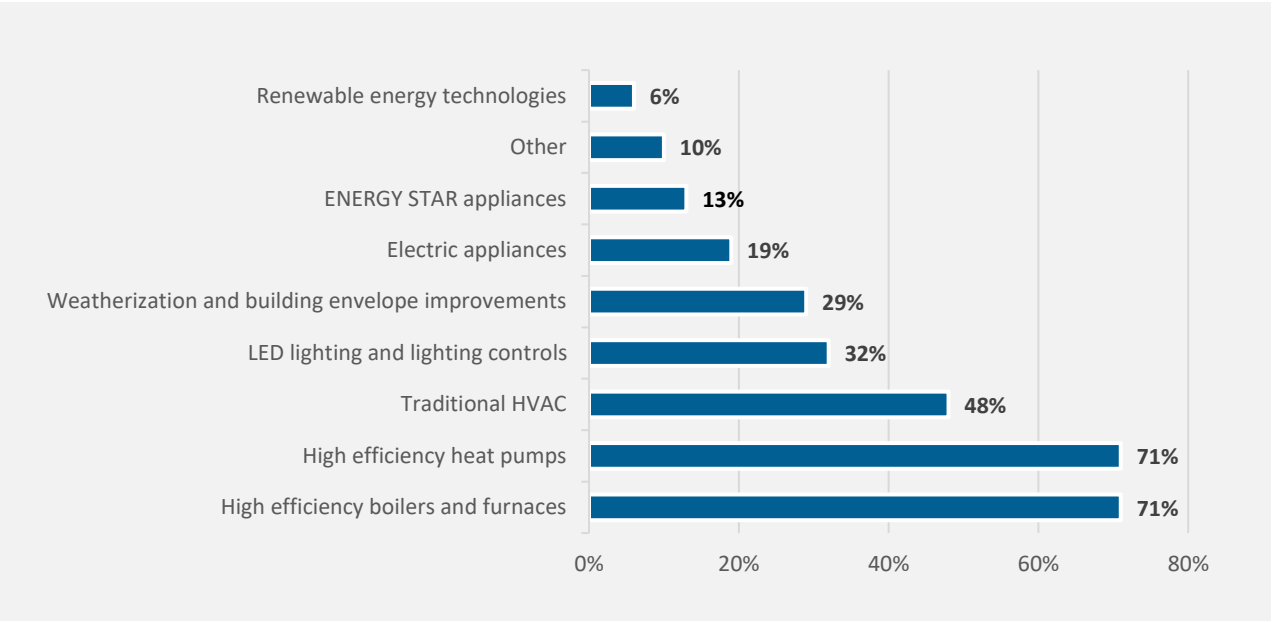
Firm and Employment Profiles

Rhode Island energy efficiency firms work across a range of different technologies. Among surveyed energy efficiency firms,[12] seven in ten support the installation of high efficiency heat pumps and high efficiency boilers. Traditional HVAC technologies are a focus of half (48 percent) of surveyed energy efficiency businesses. About a third support LED and lighting controls, and three in ten conduct weatherization and building envelope improvements.

[11] Detail on survey methods can be found in Appendix A: Methodology. There are limitations with any survey, and in this instance, one limitation is the relatively small number of Rhode Island businesses that completed the survey (see Methodology for details). The results, however, align with similar surveys fielded in other states and executive interviews conducted with a range of energy efficiency business leaders in Rhode Island and other states, lending confidence to the results.

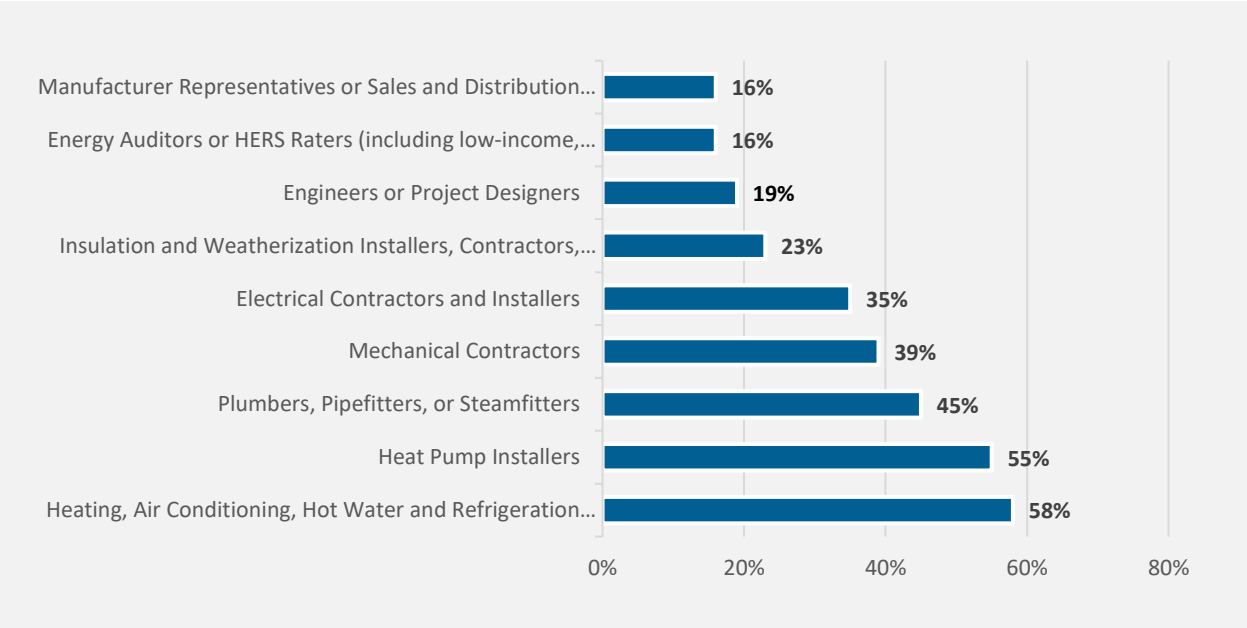
[12] Only installation, maintenance, and repair or construction firms engaged with energy efficiency technologies qualified for the employer survey. Other supply chain segments are not represented here.

Figure 6. Technologies in Which Surveyed Energy Efficiency Firms Work[13]



These firms employ a wide range of energy efficiency workers, predominantly focused on construction-related occupations. The most common occupation within firms was HVAC technician (58 percent of respondents employ at least one HVAC technician) followed by heat pump installers (55 percent) and plumbers, pipefitters, or steamfitters (45 percent). Other occupations employed include mechanical contractors (39 percent), electricians (35 percent), and weatherization technicians (23 percent).

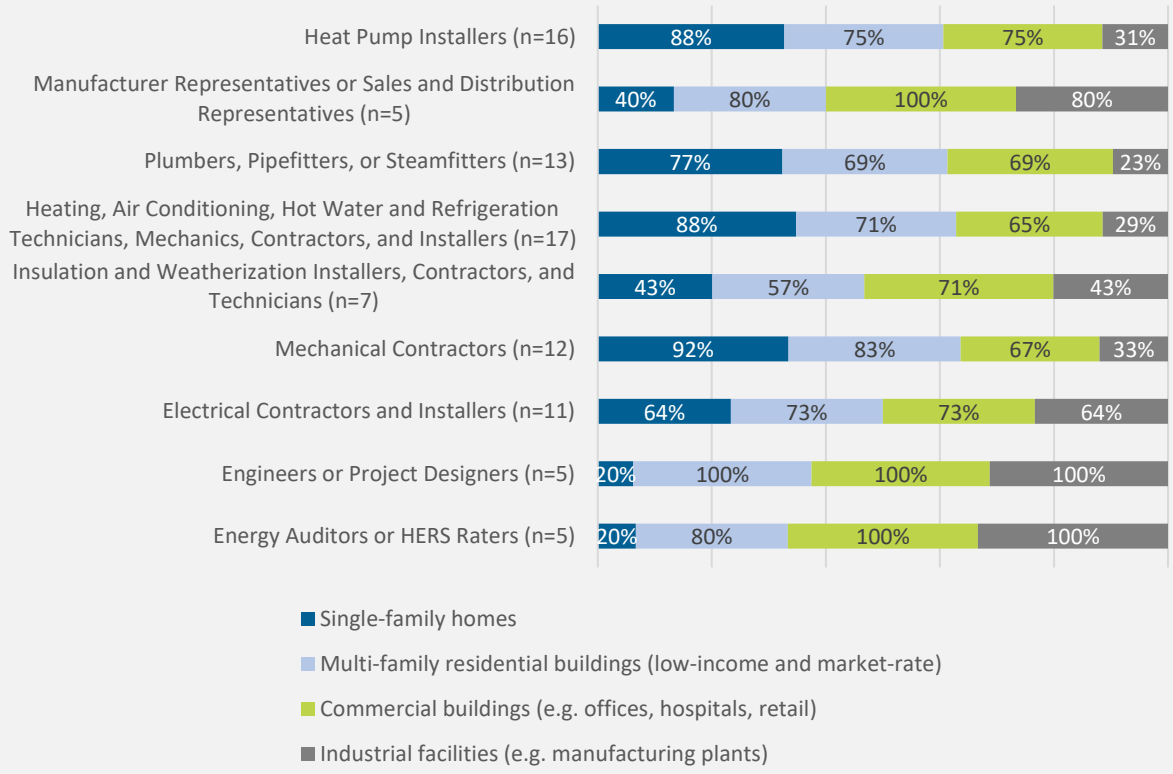
Figure 7. Occupations That Surveyed Energy Efficiency Firms Employ



[13] Three firms selected "Other," specifying Building Automation and Temperature Controls, HVAC and Plumbing Insulation, and Electric Vehicle Charging Stations.

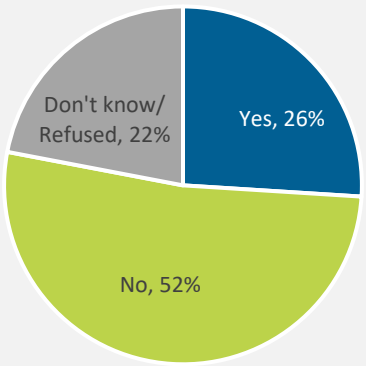
Surveyed businesses work across all building types, though single-family homes (46 percent) and commercial buildings (46 percent) are their most frequent focus.

Figure 8. Business Segments in Which Workers of Surveyed Energy Efficiency Firms Fall



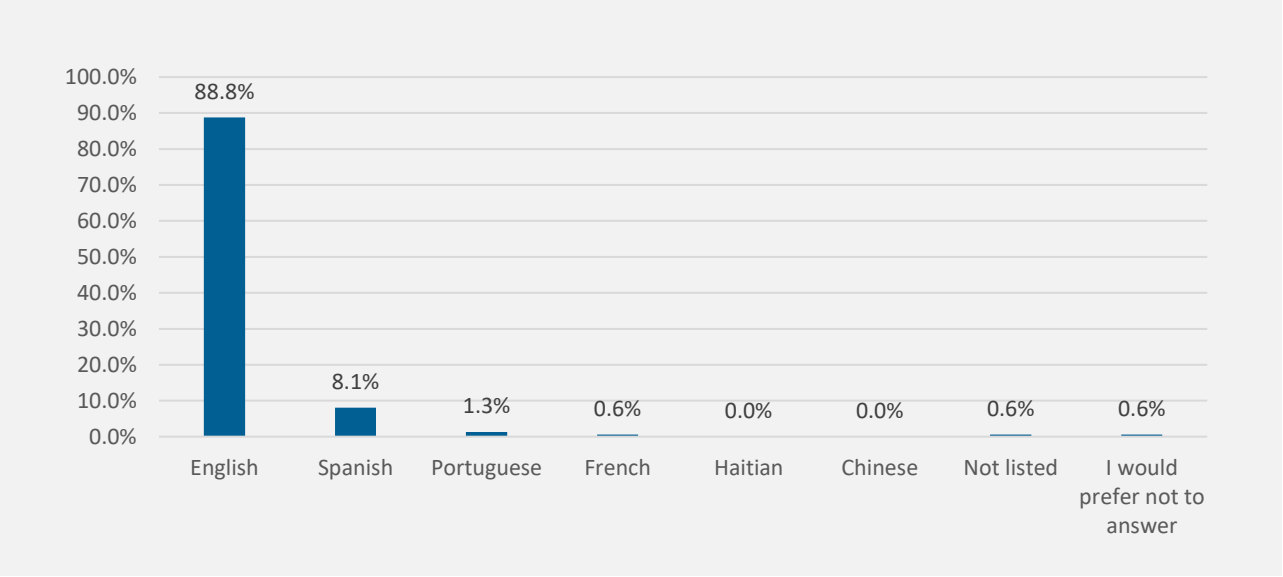
Few energy efficiency employers have a formal diversity, equity, and inclusion (DEI) or Affirmative Action (AA) program in their organization, with one-quarter (26 percent) responding that they do.

Figure 9. Does Your Firm Have Formal Diversity, Equity, and Inclusion or Affirmative Action Programs?



While English is the predominant language spoken among current workers in energy efficiency firms (89 percent), a few other languages are spoken, including Spanish, Portuguese, and French.

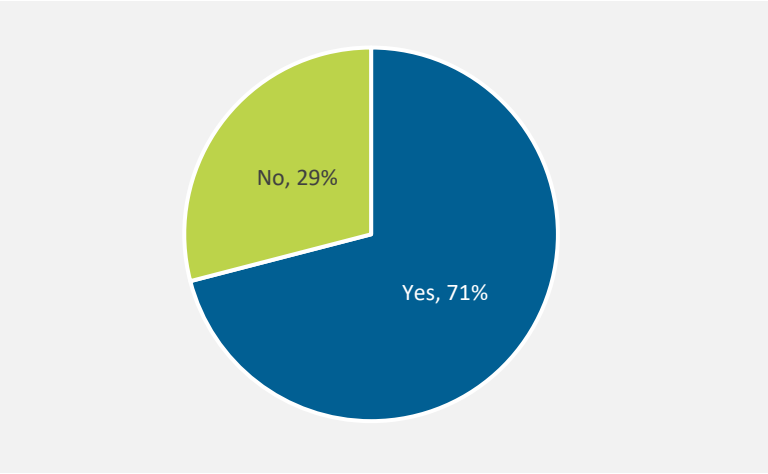
Figure 10. Primary Language of Current Energy Efficiency Workers



Hiring Landscape

Seven in ten (71 percent) energy efficiency businesses report that they have hired at least one additional energy efficiency worker in the last year, compared to three in ten (29 percent) that did not.

Figure 11. Has Your Business Hired At Least One Energy Efficiency Worker During the Last 12 Months?



While most businesses were in hiring mode, most report hiring five or fewer employees in 2021. This reflects both the small size of most Rhode Island energy efficiency businesses and the overall stability of the market (despite the lack of recovery to 2019 job levels) as illustrated in Figures 1 and 3, above.

Figure 12. Number of Employees Hired per Business, by Job Type, Over the Last 12 Months

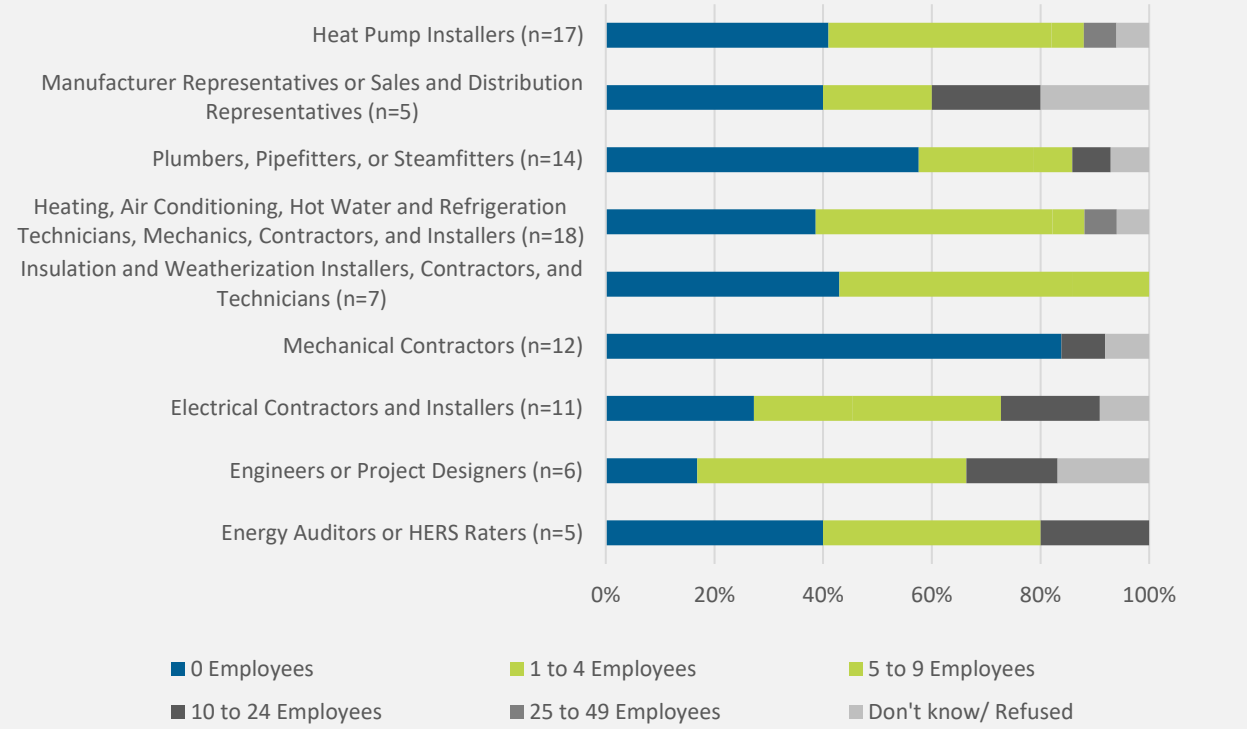
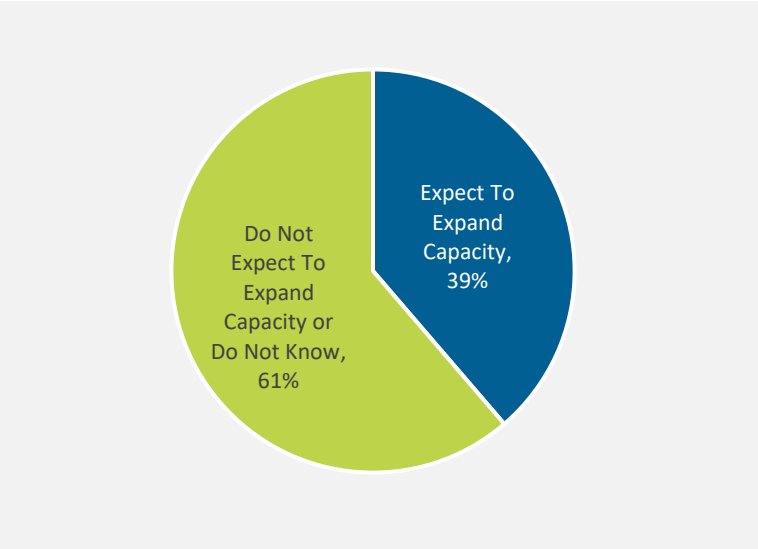


Figure 13. Share of Employers Saying They Will Expand Capacity by Hiring for New Types of Energy Efficiency Roles in the Future

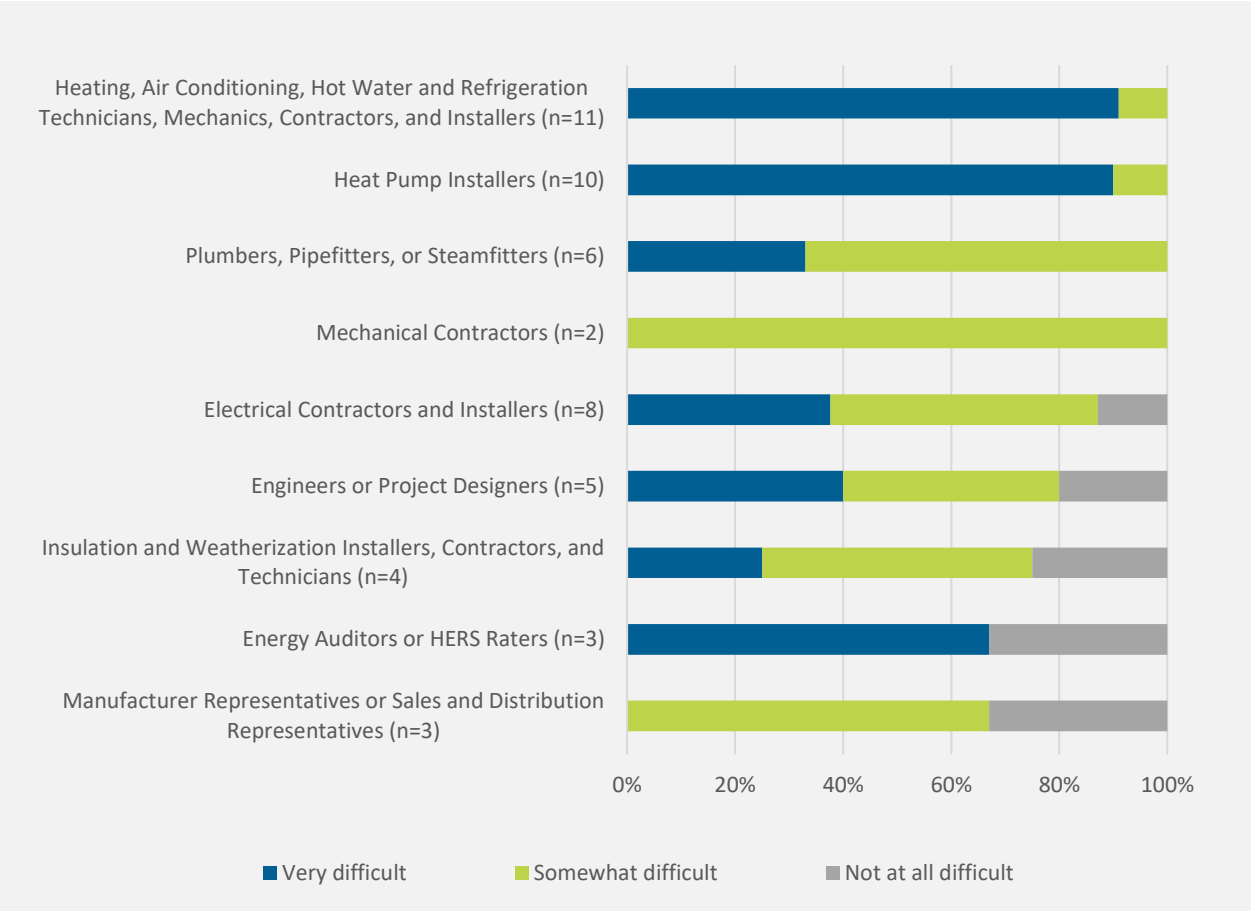


Many Rhode Island energy efficiency firms are growing into new areas of business. Almost four in ten firms expect to expand their capacity by hiring workers in occupations they did not previously employ. Employers expect to add employees from across all energy efficiency occupations surveyed, including HVAC technicians, electricians, energy auditors, engineers, heat pump installers, and weatherization technicians.

Hiring Difficulties

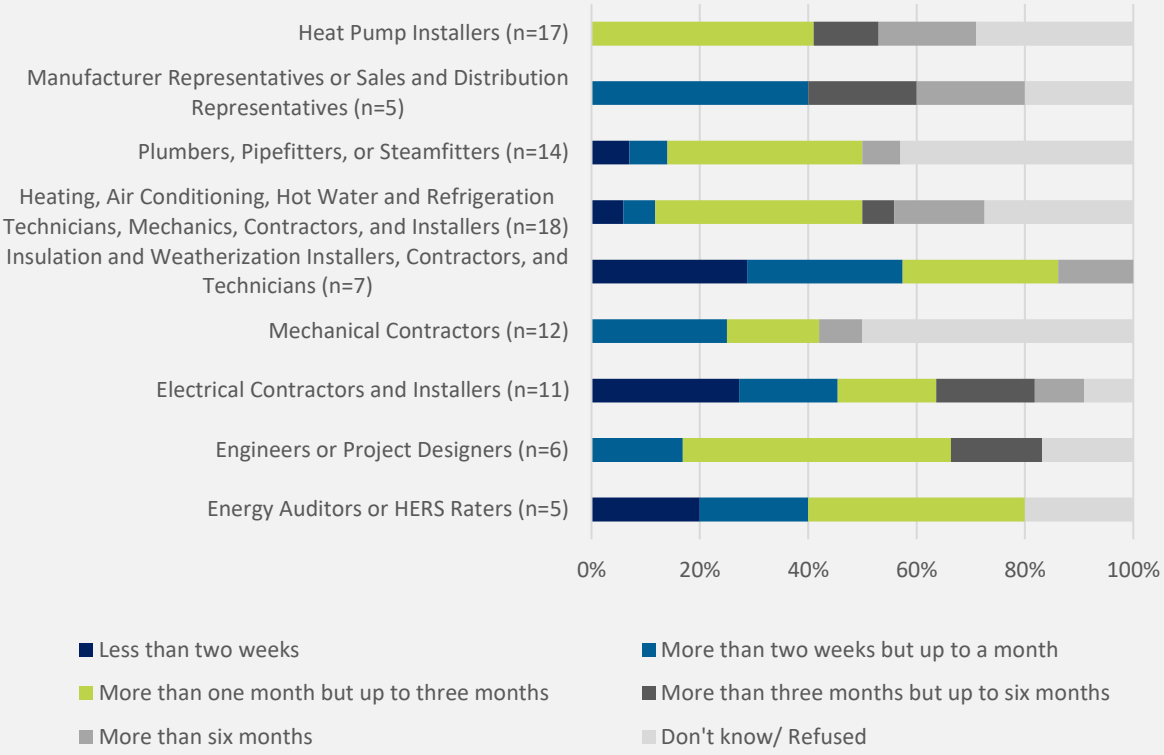
Nearly all employers surveyed indicated that they have faced difficulties hiring energy efficiency workers over the last 12 months, with nine in ten describing it as very difficult (56 percent) or somewhat difficult (35 percent) to find qualified applicants to fill a position. The most difficult to fill were HVAC technicians and heat pump installers, with nine in ten employers reporting it was very difficult to hire for these roles. Other positions were more likely to be described as somewhat difficult to fill.

Figure 5. Share of Employers Reporting it was Very, Somewhat, or Not Difficult to Fill Various Energy Efficiency Roles



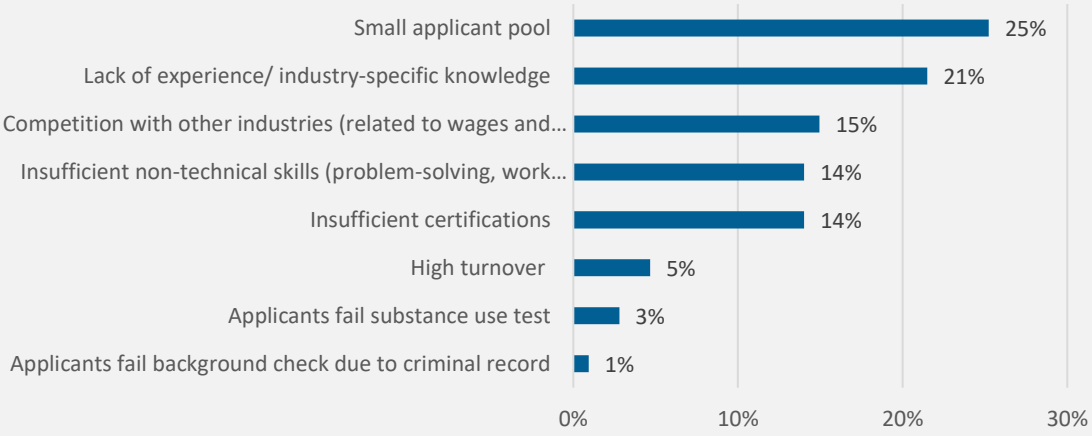
Employers also say filling open positions for heat pump installers and HVAC technicians took a long time. Nearly two-thirds (62 percent) of open HVAC technician positions took at least a month to fill, and a quarter took more than three months. Seven in ten (71 percent) open heat pump installer positions took more than a month to fill, with three in ten (30 percent) taking longer than three months. Other positions were somewhat easier to fill, with slightly less than half (45 percent) of open electrician positions, six in ten (58 percent) insulation and weatherization positions, and four in ten (40 percent) energy auditor roles being filled in under a month.

Figure 15. Length of Time Employers Took to Fill Individual Energy Job Openings, by Job Type



Reasons for hiring difficulty varied. Across all responses, two categories emerged: (1) a lack of labor supply and (2) a lack of workers prepared to step into the role immediately. A small applicant pool was the top reason for difficulty in hiring, with a quarter (25 percent) of respondents citing this challenge, and another 15 percent citing competition with other industries. Lack of experience/industry-specific knowledge was the second-leading reason, cited by two in ten (21 percent), followed by insufficient certifications (14 percent) and insufficient non-technical skills (14 percent). These results are comparable to surveys of energy efficiency employers in other northeast states.

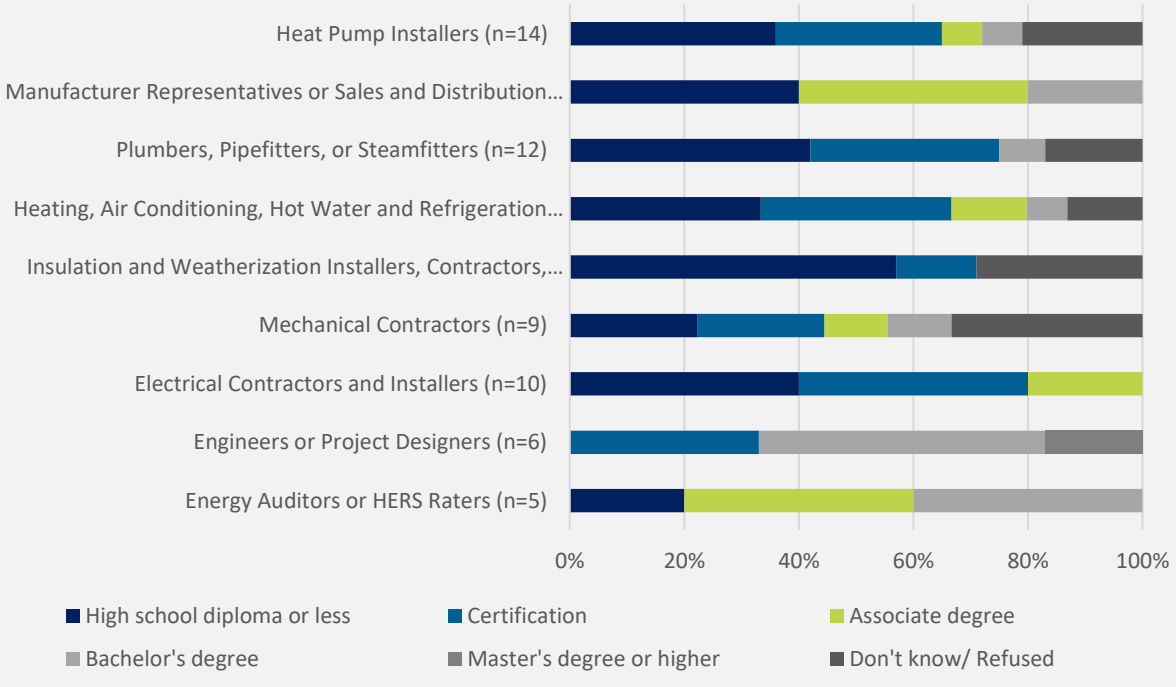
Figure 16. Primary Reason Employers Cited for Hiring Difficulty



Hiring Requirements

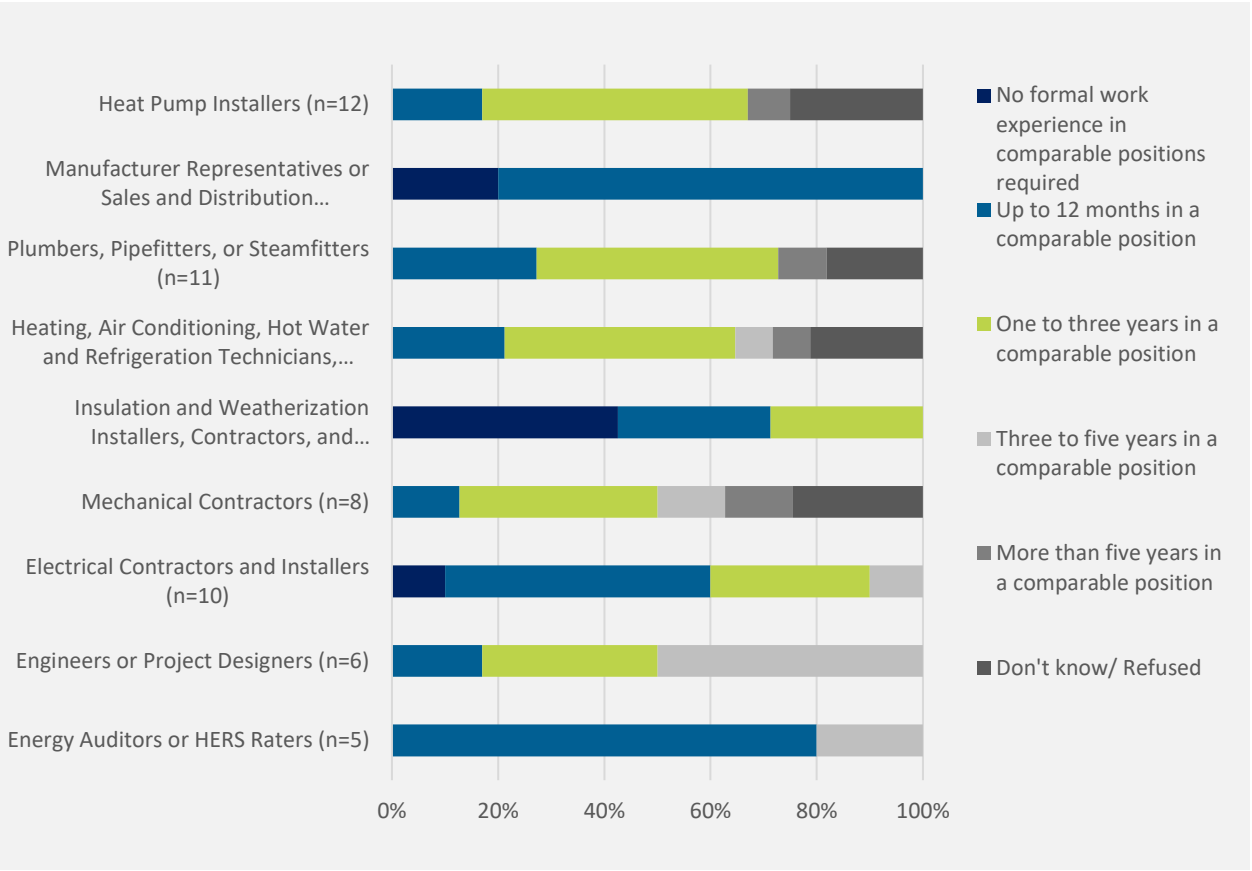
Respondents report that many of their energy efficiency job openings do not require a college degree. In fact, many employers report employing workers for several energy efficiency jobs that require a high school diploma or less; many other jobs require certification in the relevant field. More than half of jobs in insulation and weatherization require a high school diploma or less. Survey data generally indicate that employers value applicants' experience more than specific certifications, training, or education.

Figure 17. Energy Efficiency Employers' Education Requirements by Role



Most employers expect some work experience for most roles, with at least half requiring that heat pump installers (50 percent), plumbers (54 percent), HVAC technicians (57 percent), and mechanical contractors (64 percent) have a year or more of experience in a comparable role. There are, however, exceptions: Most notably, seven in ten (72 percent) employers require insulation and weatherization applications to have experience totaling one year or less, and four in ten (43 percent) do not require these applicants to have any formal work experience.

Figure 18. Energy Efficiency Employers' Requirements for Previous Work Experience by Role



Finally, about half of employers (52 percent) conduct substance use testing for potential applicants, and two-thirds (67 percent) conduct criminal background checks.

Figure 19. Do You Conduct Substance Use Testing for Potential Applicants?

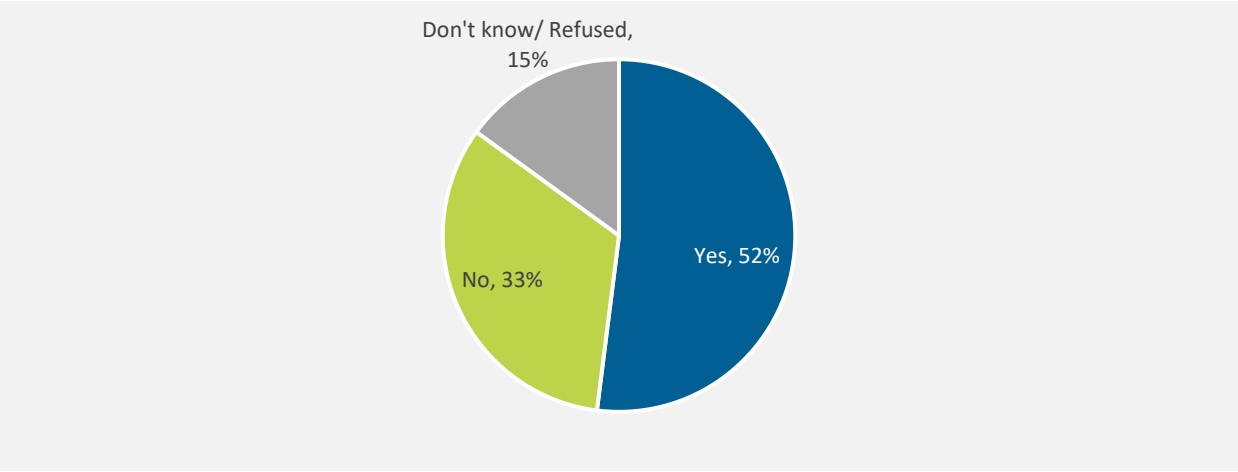
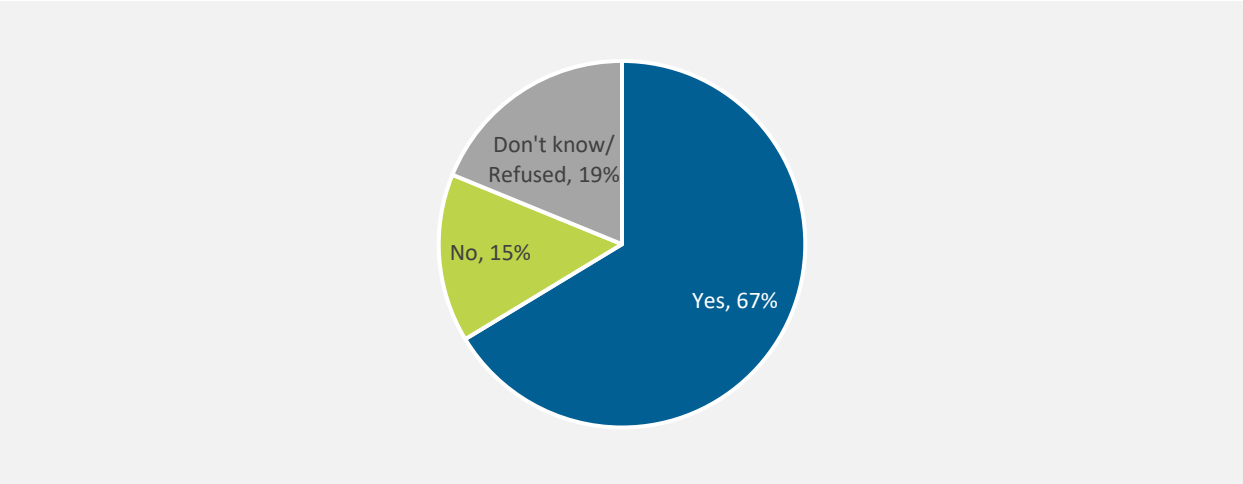


Figure 20. Do You Conduct Criminal Background Checks for Potential Applicants?

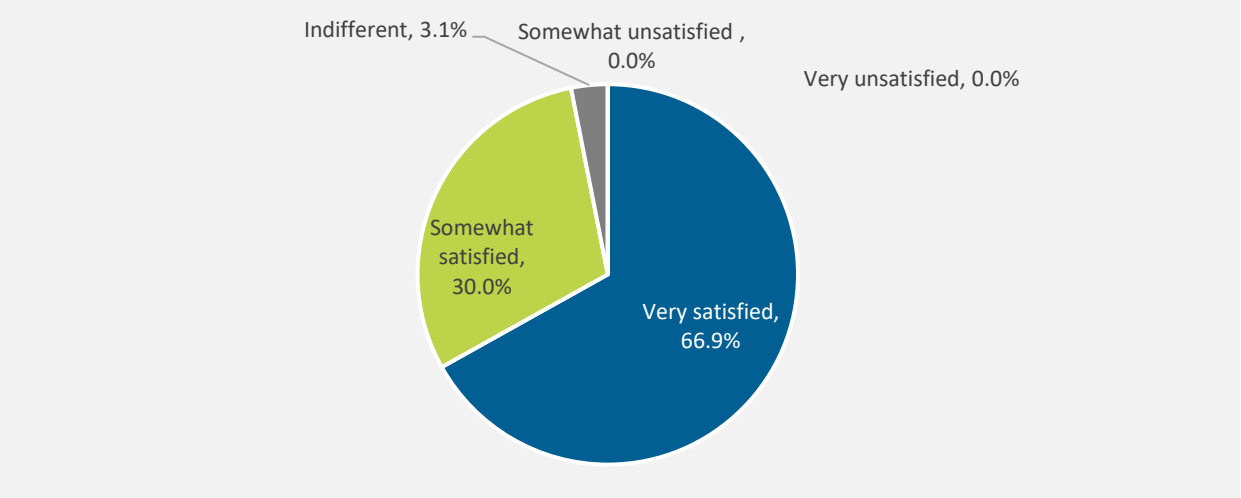


Workers

Benefits, Satisfaction, and Career Opportunities

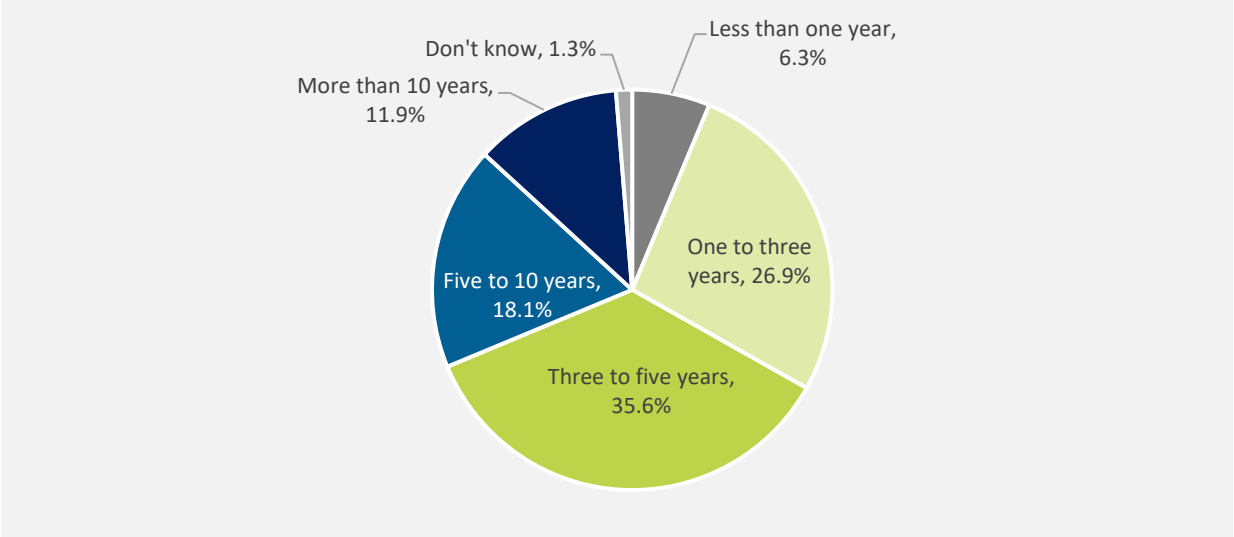
Nearly all energy efficiency workers are satisfied with their jobs, with two-thirds (67 percent) stating they are very satisfied.

Figure 21. Current Energy Efficiency Workers' Career Satisfaction



Most energy efficiency workers are early in their careers, with slightly more than one in ten (12 percent) having worked in energy efficiency longer than ten years. Nearly triple that share (33 percent) have been in the field three years or less.

Figure 22. Length of Time Current Energy Efficiency Workers Have Been Working in the Energy Efficiency Field



Nearly all workers see their future next step as an advancement within their company (71 percent) or within their industry (23 percent). In terms of current obstacles to advancement, only one third (36 percent) cite a lack of opportunities or open positions, about the same as those who foresee no obstacles (31 percent).

Figure 23. Next Step in Career or Promotion for Current Energy Efficiency Workers

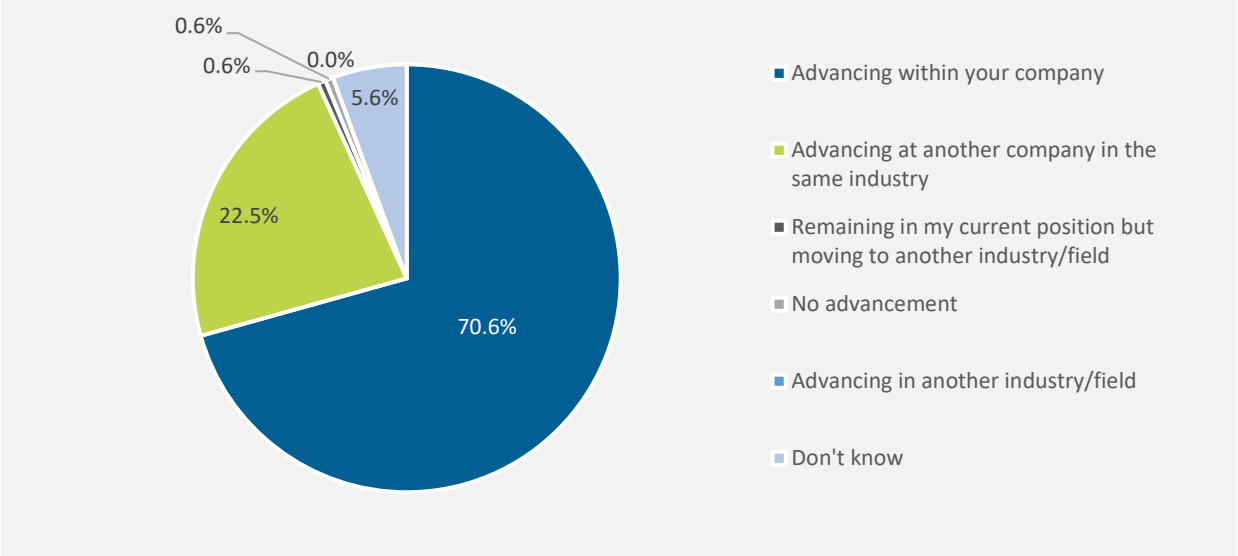
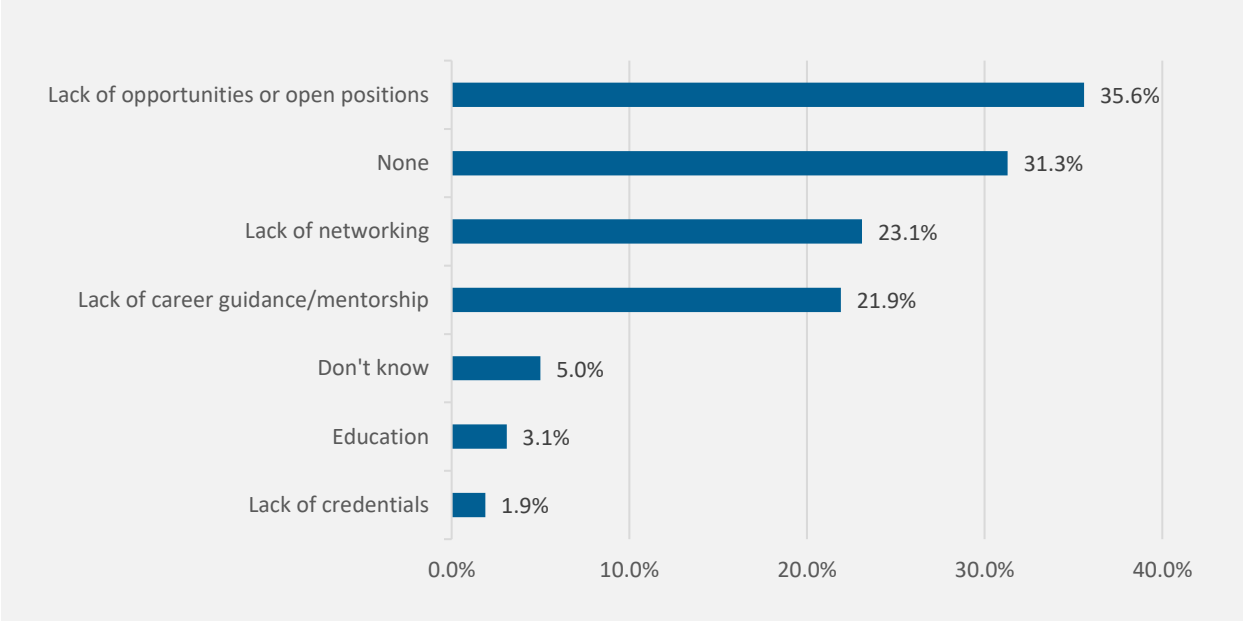


Figure 24. Obstacles to Promotion in the Energy Efficiency Field Foreseen by Current Workers[14]



[14] Survey respondents were allowed to select all that applied to the question asked, "do you foresee any obstacles to promotion within the energy efficiency field?"

Most energy efficiency employees in Rhode Island have healthcare benefits for their workers, with nearly six in ten receiving full coverage and another 30 percent receiving partial coverage from employers. Nearly 80 percent provide paid vacation. Some employers also offer other benefits, such as flexible work schedules (55 percent), a company vehicle (46 percent), or tuition or transportation support (26 percent and 25 percent, respectively).

Figure 25. As a Current Energy Efficiency Worker, Does Your Employer Offer Paid Healthcare Benefits?

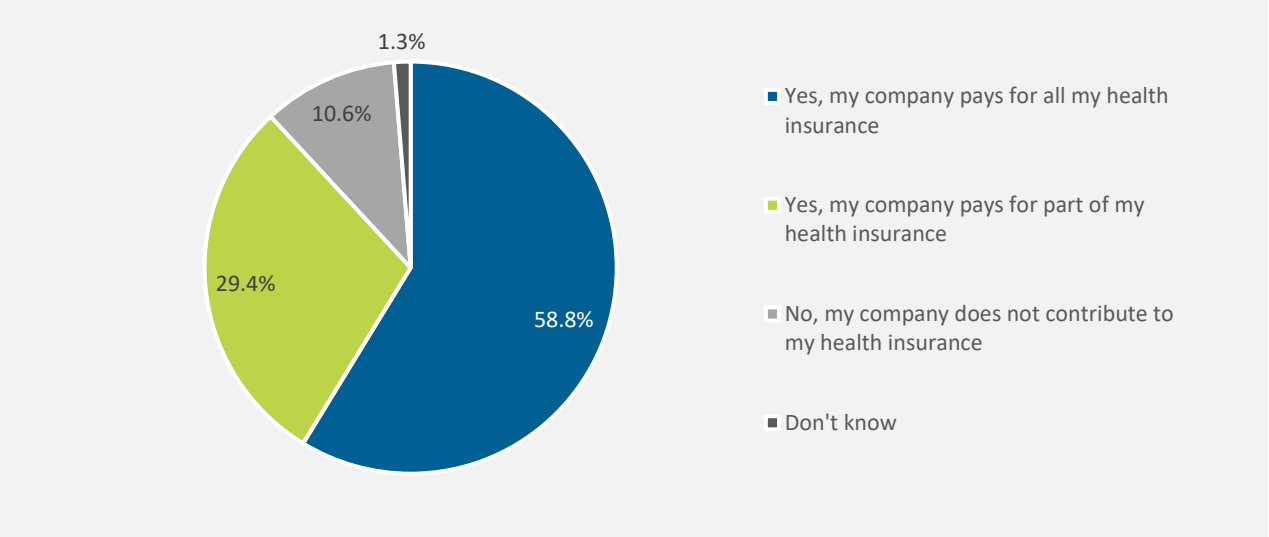


Figure 26. As a Current Energy Efficiency Worker, Does Your Employer Offer Paid Vacation Benefits?

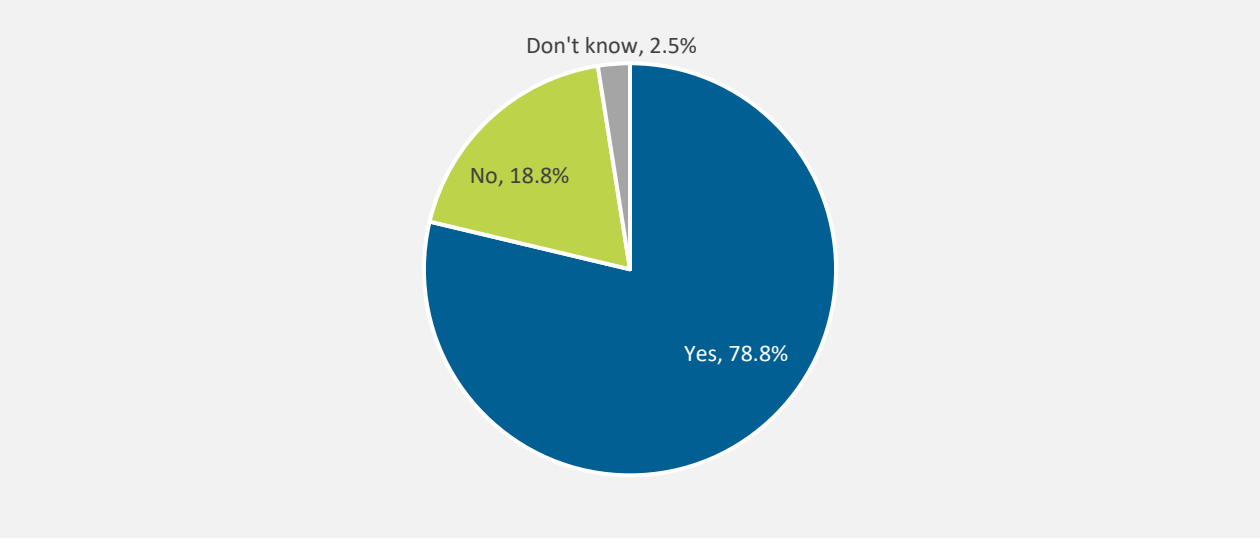
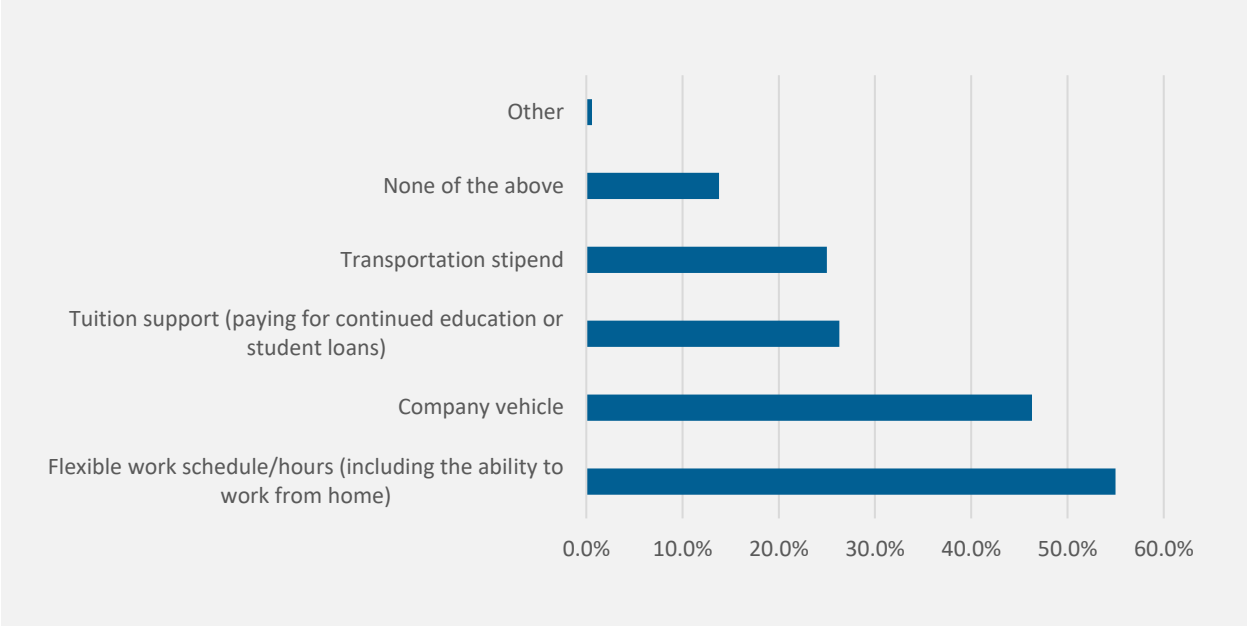


Figure 27. Share of Employers Providing Additional Benefits, by Benefit



Education and Career Support

One-third of current workers stated that training and education courses have helped them either obtain a job or increase their earnings in the field. These respondents specified that they completed trainings or courses through a wide variety of providers, including trade or technical schools, community colleges, colleges/universities, on-the-job or on-site training through their employee, and private training companies. One-third of workers also reported participating in apprenticeships, internships, or dedicated mentorships, with essentially all who participated (95 percent) stating these opportunities improved their job prospects or contributed to their success in the field.

Figure 28. Have You Completed Any Training or Education Courses That You Feel Have Either Helped You Get a Job or Increase Your Pay in the Energy Efficiency Field?

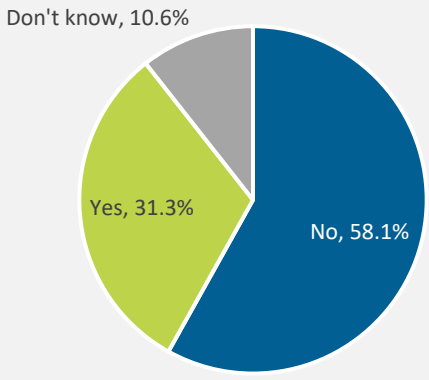


Figure 29. Participation in Formal Apprenticeship, Internship, or Mentorship Programs by Current Energy Efficiency Workers

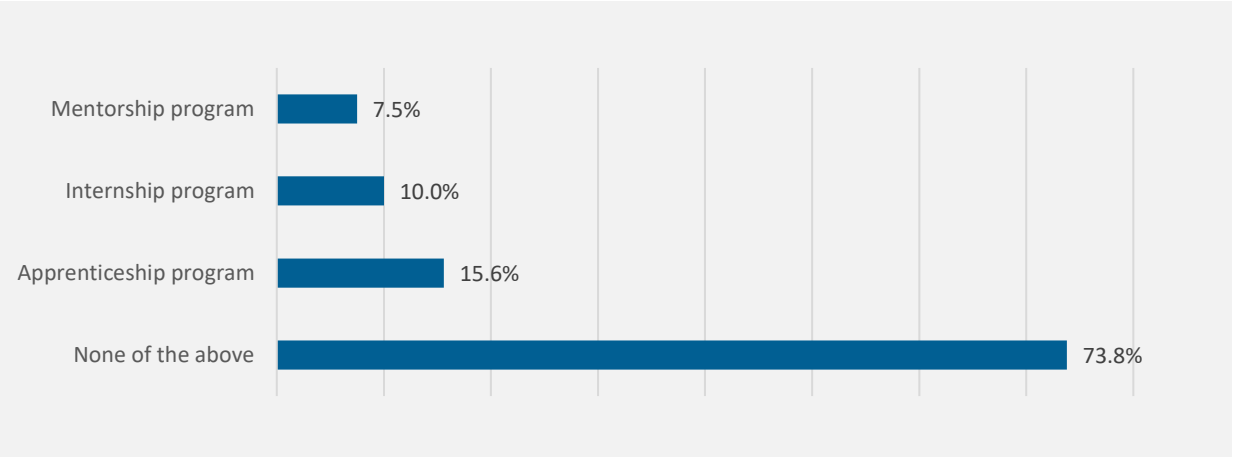
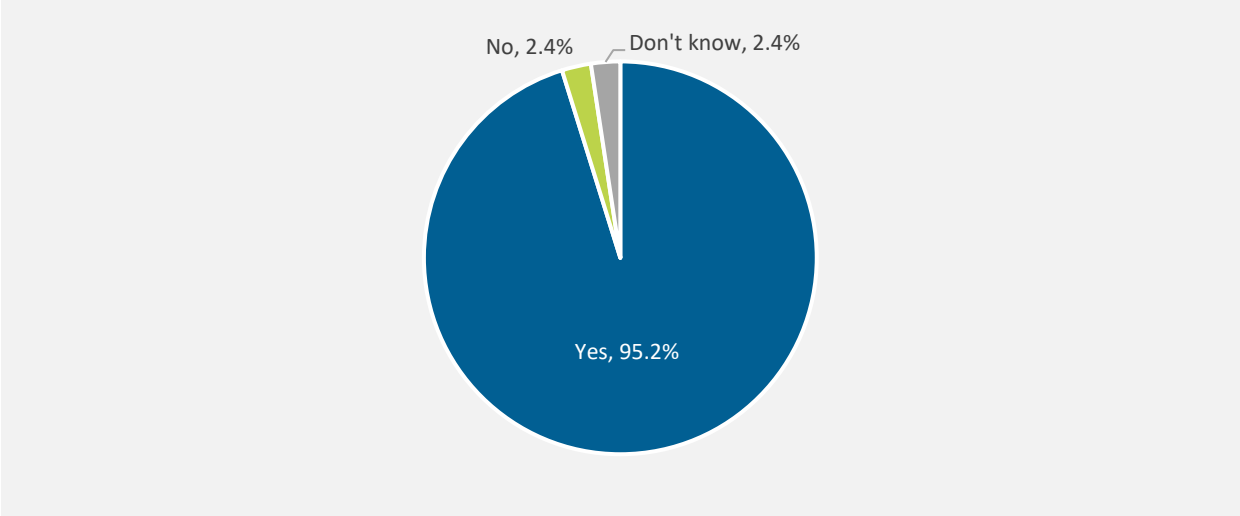
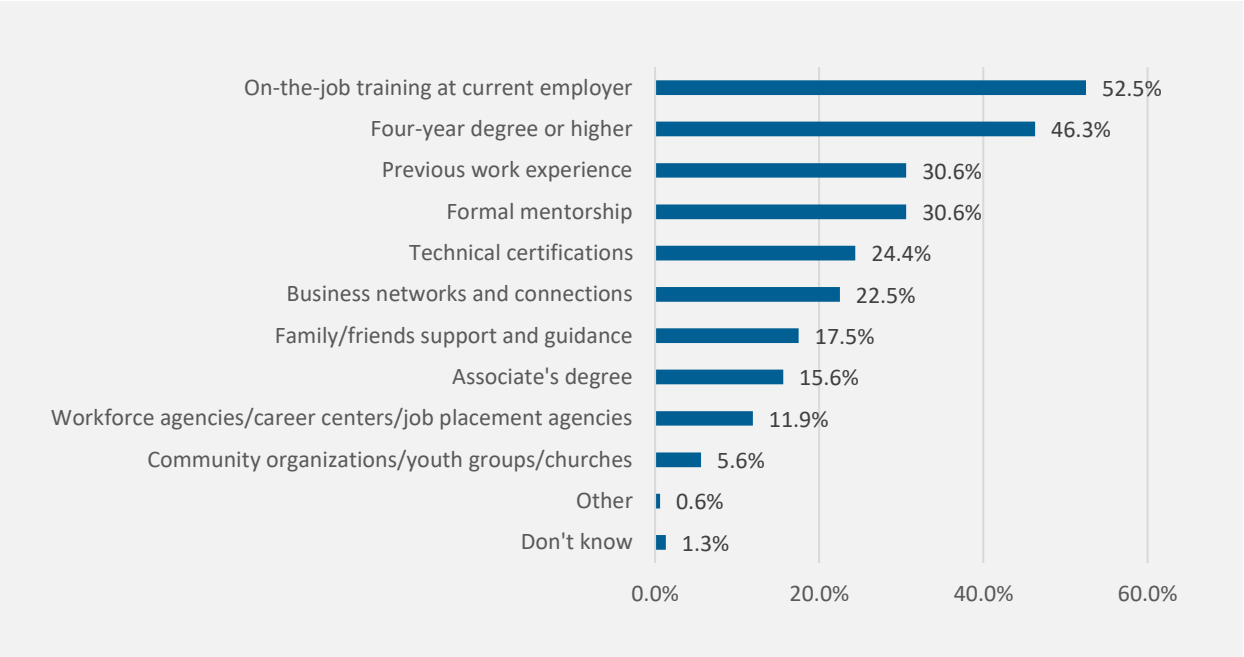


Figure 30. Did Participation in a Formal Apprenticeship, Internship, and/or Mentorship Program Improve Your Job Prospects or Your Success at Your Current Job?



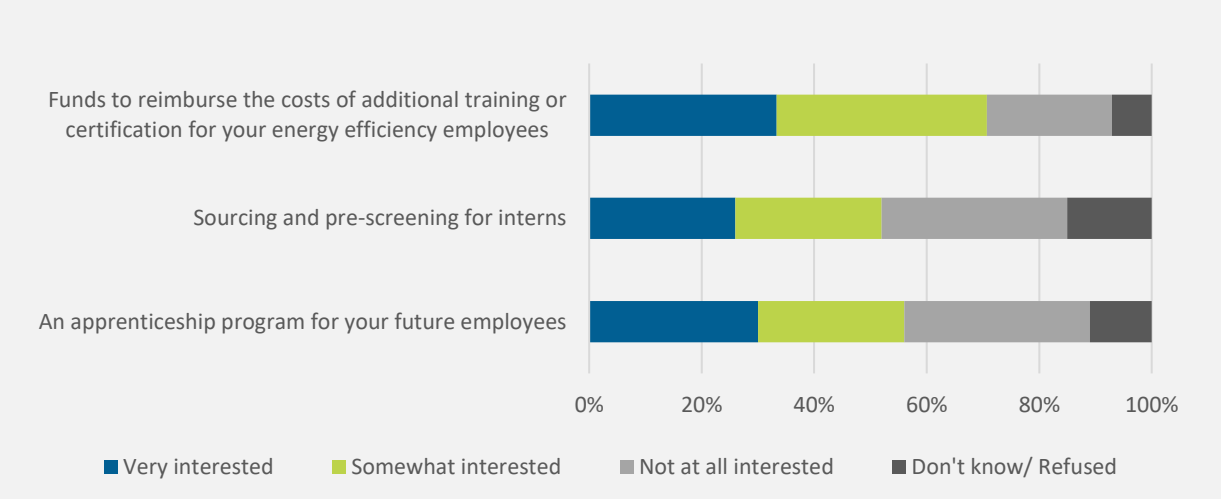
According to current energy efficiency workers, many important career growth opportunities are found through existing or prior work experience. Over half (53 percent) listed on-the-job training at a current job as important for successful career navigation, while formal mentorship and prior experience were each chosen by a third (31 percent) of workers. A quarter of respondents (23 percent) listed business networks and connections. Nearly half of workers (46 percent), list four-year or graduate degrees as important, and a quarter (24 percent) report that technical certifications are important for career growth and navigation.

Figure 31. Programs or Credentials Important for Successful Career Navigation in the Energy Efficiency Field, Reported by Current Workers



The majority of surveyed firms are interested in offering or accessing recruitment and training program offerings. Specifically, 56 percent reported that they are interested in funds to reimburse the costs of additional training or certification for their energy efficiency employees, and about half of businesses (56 percent) indicated some level of interest in an apprenticeship program for their future employees and/or sourcing and pre-screening for interns (52 percent).

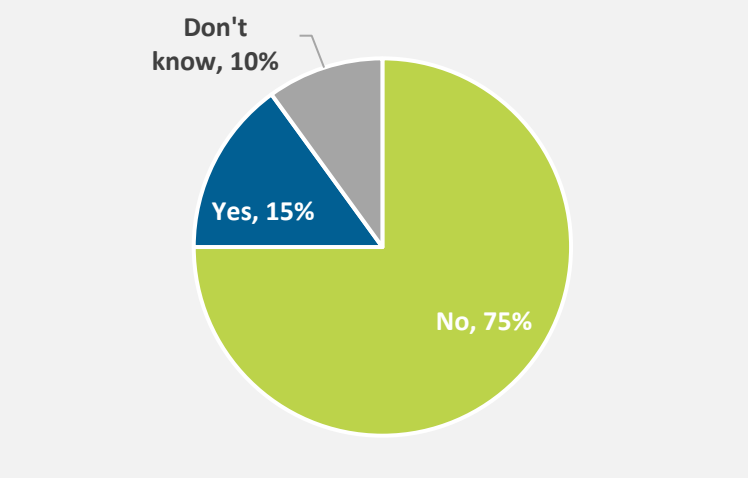
Figure 32. Surveyed Energy Efficiency Employers' Interest in Potential Recruitment and Training Programs



Certifications

Three-quarters (75 percent) of employers do not require employees to hold certifications beyond the state's requirements for the position they hold.

Figure 33. As a Current Energy Efficiency Worker, Does Your Employer Require You to Hold Specific Licenses or Certifications?



Across all occupations, employers were most likely to list the OSHA card (10-hour safety course), OSHA Confined Spaces Training, and Certified Energy Manager certifications as valuable, with completion of the OSHA trainings being relevant to all trade positions and completion of Certified Energy Manager training being important for roles such as energy auditor, engineer or project designer, and electrician.

Other certifications mentioned as valuable for different positions include:

- Air Conditioning Contractors of America (ACCA), Manual D (duct design)
- Air Conditioning Contractors of America (ACCA), Manual J (system sizing)
- Air Conditioning Contractors of America (ACCA), Manual S (equipment selection)
- Building Performance Institute (BPI), BPI Energy Auditor
- Construction Supervisor License (CSL): Specialty CSL Insulation license
- United States Environmental Protection Agency (US EPA), Section 608 Technician Certification
- United States Department of Energy (US DOE), Weatherization Assistance Program
- Weatherization Crew Chief Certification

Potential Energy Efficiency Workers

The difficulties employers face in hiring for energy efficiency jobs are not likely to be eased in the near term by an influx of new workers, judging by potential workers' knowledge of and interest in energy efficiency jobs. This is unfortunate, given that these jobs closely align with what these workers are seeking in a job, are typically of high quality, and receive exceptionally high job satisfaction ratings from current workers.

Awareness of Energy Efficiency Jobs

When asked if they were aware of energy efficiency job types, careers, or occupations, only 15 percent of potential workers responded yes. Six percent of potential workers were "very likely" to apply for a position in the energy efficiency industry (although 40 percent were "somewhat likely", indicating an openness to these career paths even if specific knowledge of them is lacking), and just two percent were aware of energy efficiency training and education programs in their area.

Figure 34. Have You Heard of Any Energy Efficiency Job Types, Careers, or Occupations?

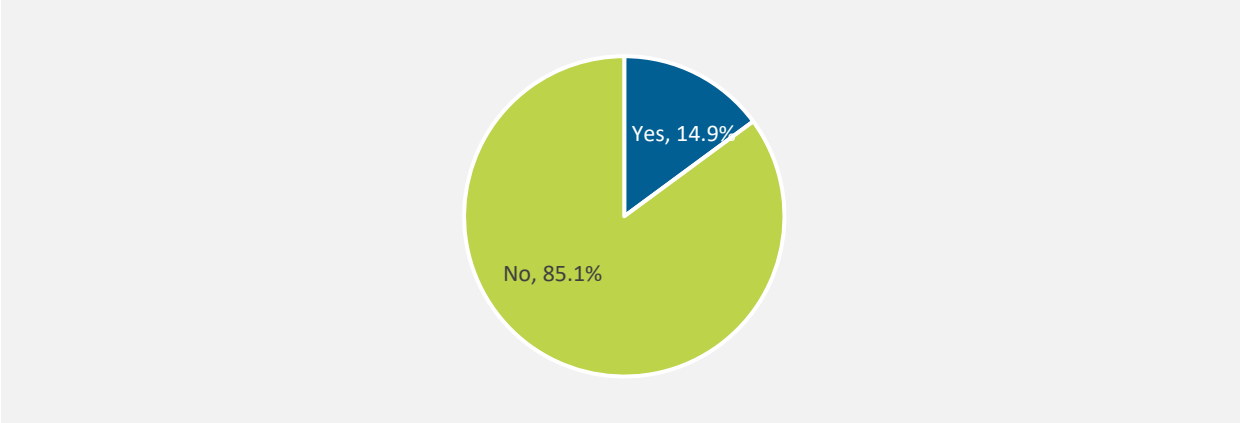


Figure 35. What is the Likelihood That You Will Apply for a Position in the Energy Efficiency Industry?

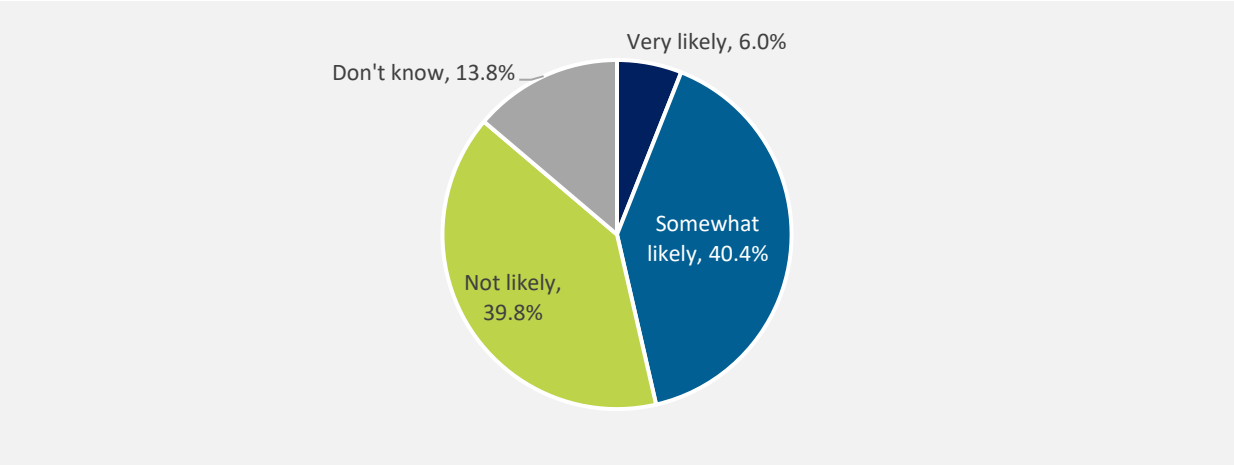
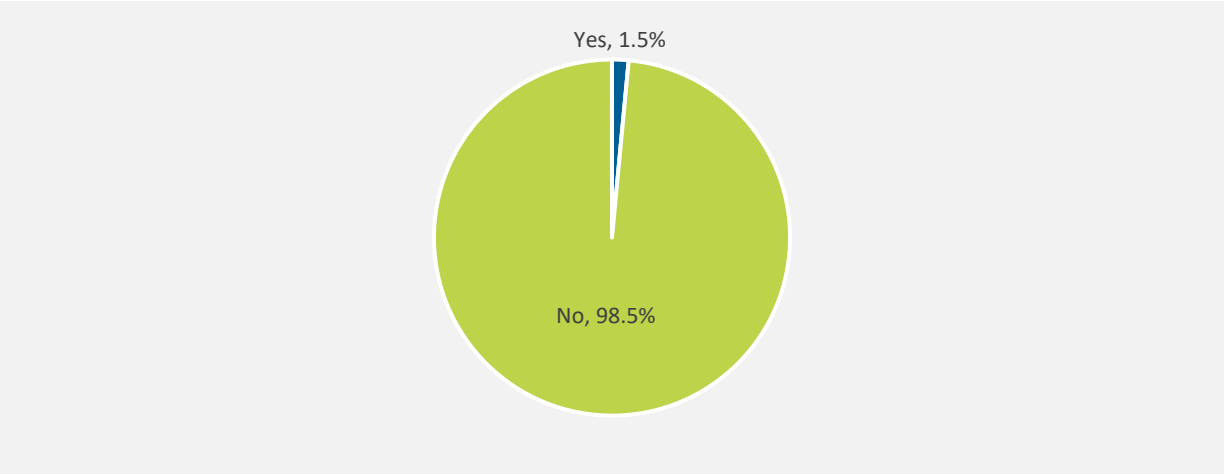


Figure 36. Are You Aware of Any Energy Efficiency Training or Education Programs in Your Area?



Job Qualities Sought by Potential Workers

Overall, potential workers highlighted the importance of good benefits, meaningful work, growth opportunities, and flexibility in schedule and location when evaluating job opportunities. These qualities align with how current workers describe their jobs. When asked the single most important quality they are looking for in a job, the most popular option chosen by potential workers was meaningful work and opportunities providing a better work-life balance (i.e., flexibility in schedule and/or job location).

Figure 37. Importance of Various Job Qualities to Potential Workers

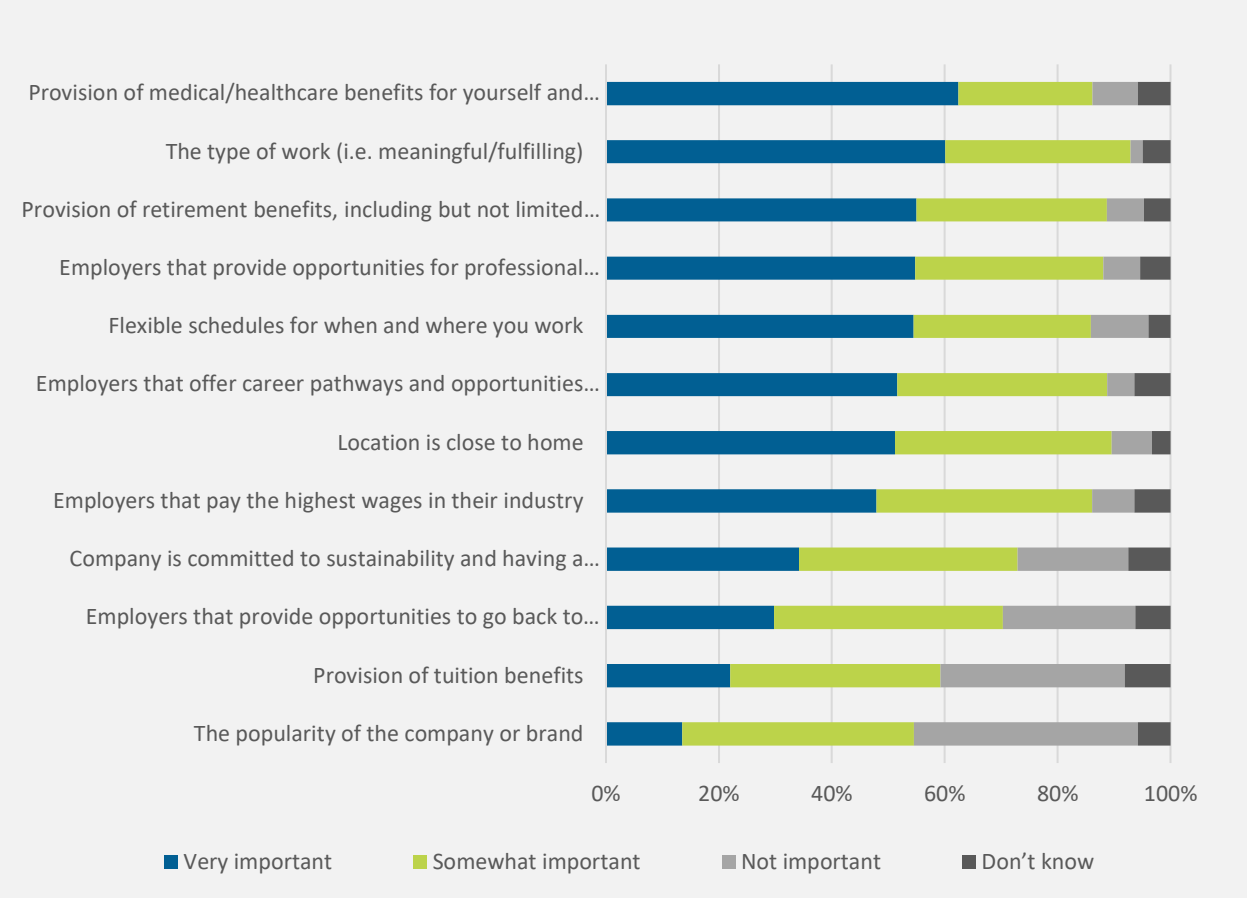
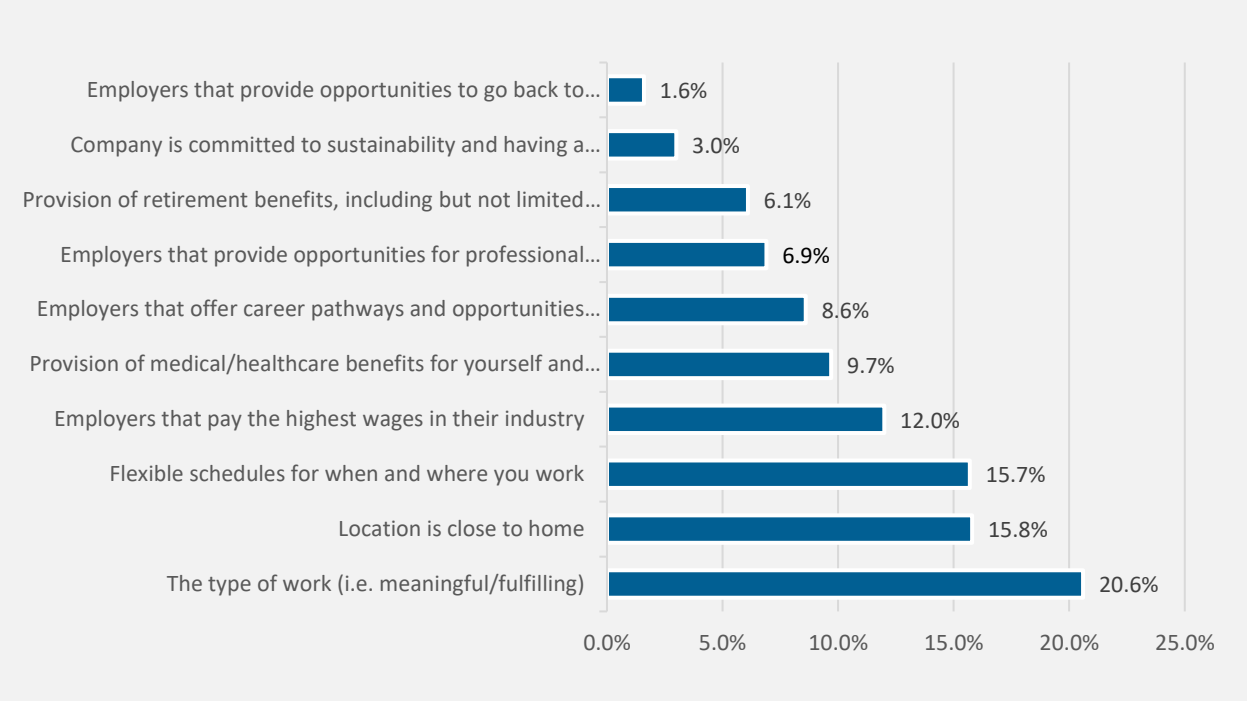


Figure 38. Factor Most Important to Potential Workers When Deciding Where to Work

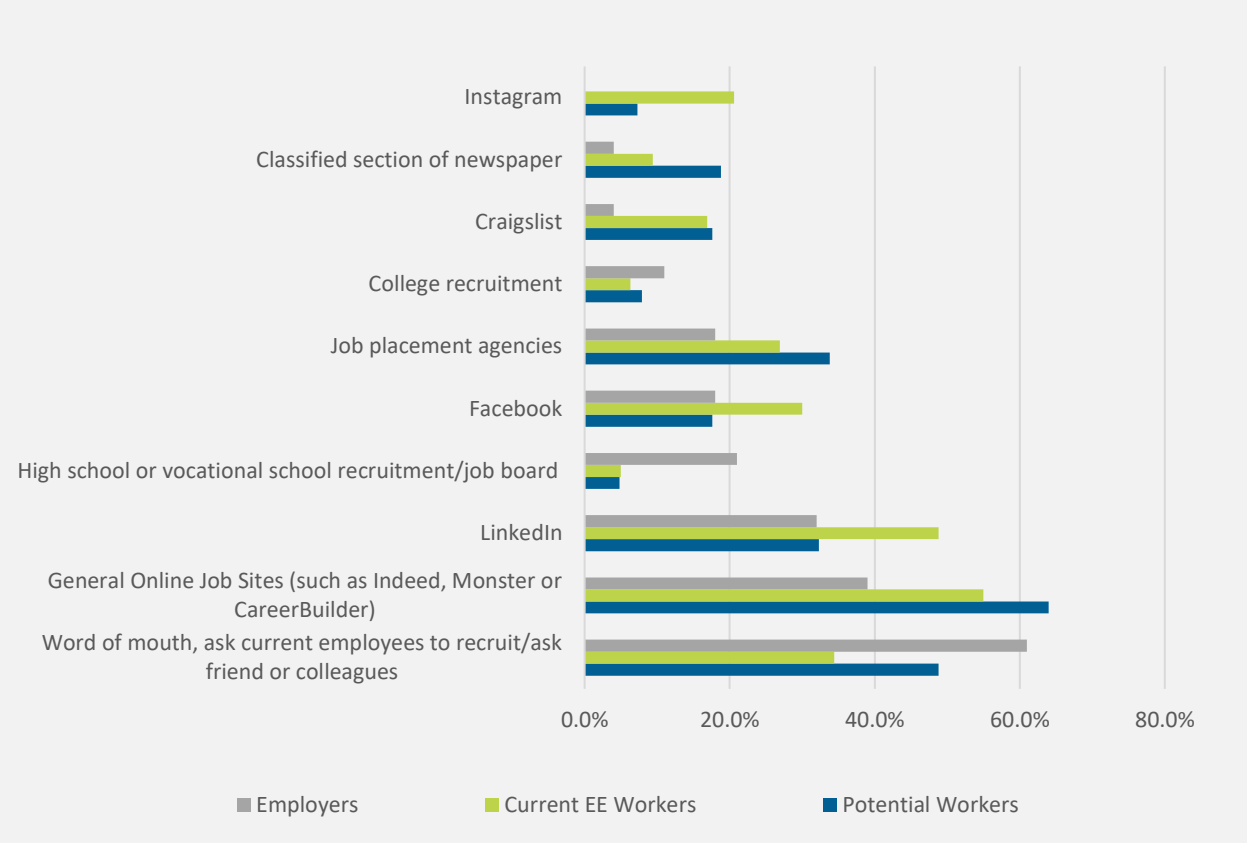


Use of Hiring Resources by Employers, Current Workers, and Potential Workers

Word of mouth and online job sites top the list of hiring resources used by energy-efficiency employers. Six in ten (61 percent) firms reported that they regularly use word of mouth, which includes asking current employees to recruit workers. Online job sites—including Indeed, Monster, and CareerBuilder—are used by four in ten hiring firms (39 percent), while LinkedIn is used by a third (32 percent). Other hiring resources, including social media platforms, job placement agencies, and recruiting from high schools and colleges, are used more sparingly.

There are differences between how potential and current workers search for jobs and how employers seek to fill them. Both groups of workers are more likely than employers to use online job sites (64 percent of potential and 55 percent of current workers, compared to 39 percent of employers). Job placement agencies are also more likely to be used by workers (34 percent of potential and 27 percent of current) than employers (18 percent). Craigslist (used by 18 percent of potential workers and 17 percent of current workers) and classified ads (used by 19 percent of potential and nine percent of current workers) are also more popular with workers than employers (4 percent of employers using each). Meanwhile, workers (49 percent of potential and 34 percent of current) are less likely than employers (61 percent) to rely on word of mouth. Other areas of misalignment between workers and employers are found in the use of high school or vocational school resources, social media, and job placement agencies.

Figure 39. Hiring Resources Used by Energy Efficiency Employers, Current Workers, and Potential Workers



Workforce Development Ecosystem and Funding Landscape

Summary

This chapter provides more detail on the current training landscape for energy efficiency jobs in Rhode Island as well as information about organizations in Rhode Island that can provide workforce development funding, career-building support services, and wraparound services. To conduct this analysis, BW Research compiled an inventory of workforce development programs and assets accessible to residents in the state, leveraging prior training inventories and publicly available listings on school, government, business, and association websites.

A review of the training and education assets in Rhode Island shows that current and potential workers have access to many training programs to guide their professional development and readiness in the energy efficiency field.

An evaluation of the overall landscape in Rhode Island reveals that a wide range of entities are involved in energy efficiency workforce development, including community colleges, universities, career and technical education centers, trade schools, unions, community organizations, and private institutions or companies. The programs they offer target a wide variety of energy efficiency occupations, with large concentrations of programs focused on energy auditors/HERS raters/building analysts/building inspectors, HVAC technicians, electricians, and engineers as well as operations and maintenance roles.

There are, however, gaps in the available programs that should be addressed for greater access and improved workforce development. A majority of the 280 programs identified are offered online, while 87 are offered physically in Rhode Island. Many in-person training courses were offered online during the COVID-19 pandemic, and there has been an ongoing transition into more hybrid options. Some program hosts interviewed for this report are hoping to keep these programs online while others are offering both options.

Northwestern Rhode Island appears to have no in-person energy efficiency trainings, although it includes counties with large percentages of their populations living in an environmental justice community. Access to energy efficiency trainings can help connect environmental justice communities with energy efficiency jobs and benefits. The southern and western parts of the state also have few energy-efficiency-related training opportunities.

Alongside these training assets, there are many organizations that can support the talent pipeline of residents—especially people of color, women, and those living in underserved communities—in taking advantage of these programs and opportunities for career development. These include community-based organizations that have a presence and trust within underserved and underrepresented communities, career and technical education centers that prepare high school-aged residents for trades occupations, and organizations that provide wraparound support services to workers and reduce barriers to accessing workforce development services and programs.

Funding from multiple sources appears to be available to most energy efficiency workforce training providers across the state, and organizations are able to stack funds from various sources to develop

programs. Funding sources include state and federal education, workforce, and energy program funds as well as private grants. Increasing the flexibility of these funds would allow workforce solutions providers to provide more holistic delivery of training programs, especially in underserved areas.

Workforce support and community organizations face other limitations with the programs they can deliver. Because grant money often comes with strings attached, these organizations require access to grants that specifically allow for the development of energy efficiency programs. Further, Community Action Agencies, or agencies implementing the Community Action Program (CAP), which employ and train energy auditors to improve residential efficiency, require additional funding—or an expansion of their current funding—so that they can complete any maintenance a home may require before weatherization work can begin. Otherwise, weatherization assistance programs will be unable to serve many of the households they could otherwise help.

Training Entities

The following is a brief overview of each of the training entities profiled in this report.

Community Colleges
Community colleges offer complete training pathways for certain technical occupations, like energy systems managers and electricians. They also occasionally host courses to directly certify students for, or prepare students for certification exams within, specific career pathways. Community colleges can also provide a more financially attainable path to an eventual four-year bachelor's degree program in an advanced career, like engineering.

Technical Schools
Technical schools are a broad category of organizations that host courses aimed at adults looking to enter a new career or further their current career. Technical schools are occasionally an after-hours, continuing education branch of a high school but are most often private entities that either prepare for existing certificates (like those accredited by OSHA or BPI) or create programs that aim to prepare workers for specific careers and signal value to potential employers (like HVAC technician trainings). Technical school fees vary, but most are for-profit entities.

Vocational High Schools
In Rhode Island, vocational high schools are government-funded, and most are intended to provide high school students with the complete training necessary for entry to a given career.

Trade Associations
Trade associations offer certificate programs similar to those offered by technical schools, but they are more often not-for-profit organizations. Thus, trade association programs, though significantly fewer in number, are typically more financially attainable than technical school programs.

Four-year College/University
Colleges/universities offer Bachelor's, Master's, and Doctoral degrees for individuals seeking careers that require advanced training, such as electrical engineering or building sciences degrees. Some larger schools also host trade association events and training programs.

Community-based Organizations
Community-based organizations serve the needs of a local community, or communities, by hosting programs, services, or other supporting initiatives that advance the wellbeing and prosperity of the community members, based on their specific circumstances and desires. Typically, these not-for-profit organizations have a strong presence in the communities they serve and work to build trust among the local residents. Some initiatives include job training to align with economic and community development goals.

Energy Efficiency Training and Other Workforce Supports in Rhode Island

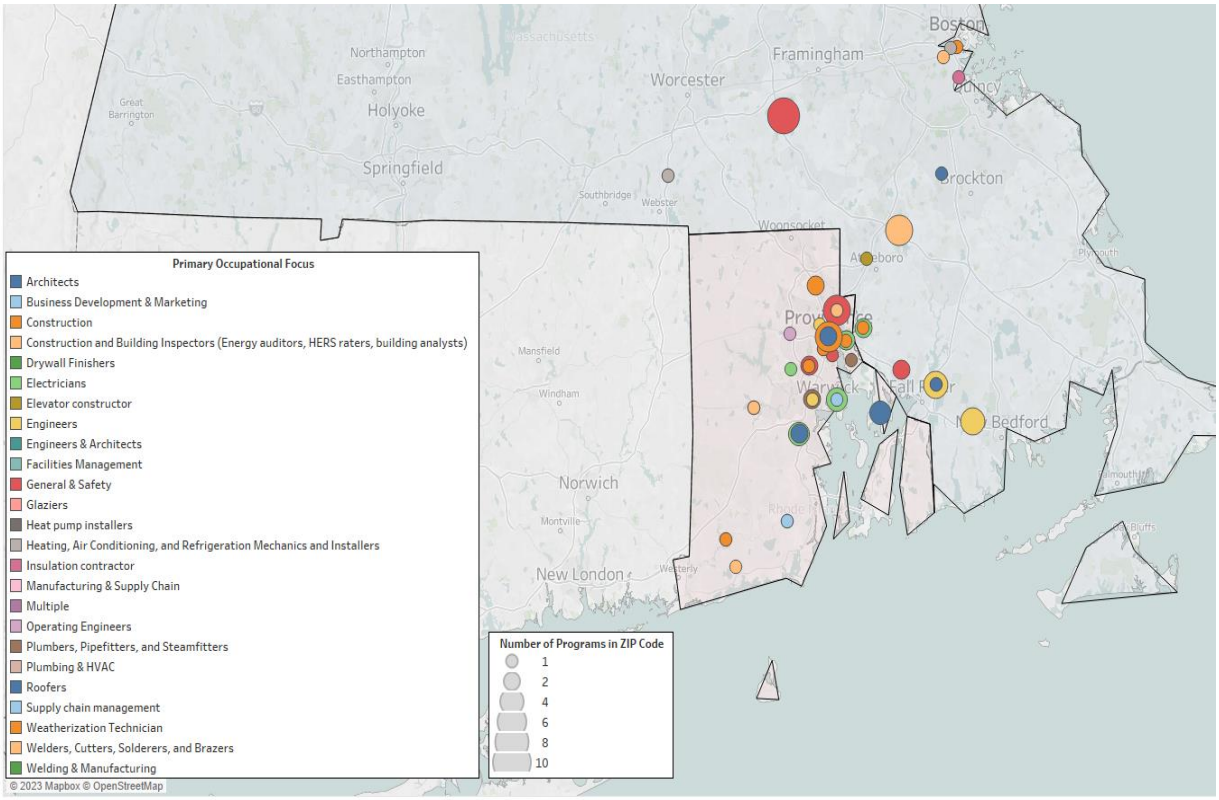
This section highlights the current training programs accessible to Rhode Island residents that are, or could be, involved in developing the state's energy efficiency workforce. This research has identified 280 programs, with 87 taking place physically in Rhode Island. Most identified programs, or 53.2 percent, are hosted by private training companies, and of those, 74.5 percent are held online. The remaining programs are hosted by a mix of community colleges, universities, career and technical education centers, trade schools, unions, community organizations, and other private institutions or companies.

Table 2. Location, Institution Type, and Number of Training Programs

Location	Institution Type	No. of Programs
Rhode Island		**87**
	College/University	21
	Community College	5
	Community-Based/Non-Profit Organization	1
	Industry Association	14
	Private Training Company/Technical School	27
	Union	5
	Utility	1
	Vocational-Technical High School	13
Massachusetts		**38**
	College/University	5
	Community College	7
	Community-Based/Non-Profit Organization	1
	Private Training Company/Technical School	11
	Technology Institute	5
	Union	9
Online		**155**
	College/University	5
	Community College	22
	Community-Based/Non-Profit Organization	4
	Industry Association	11
	Private Training Company/Technical School	111
	Technology Institute	2
	TOTAL	**280**

Location Analysis

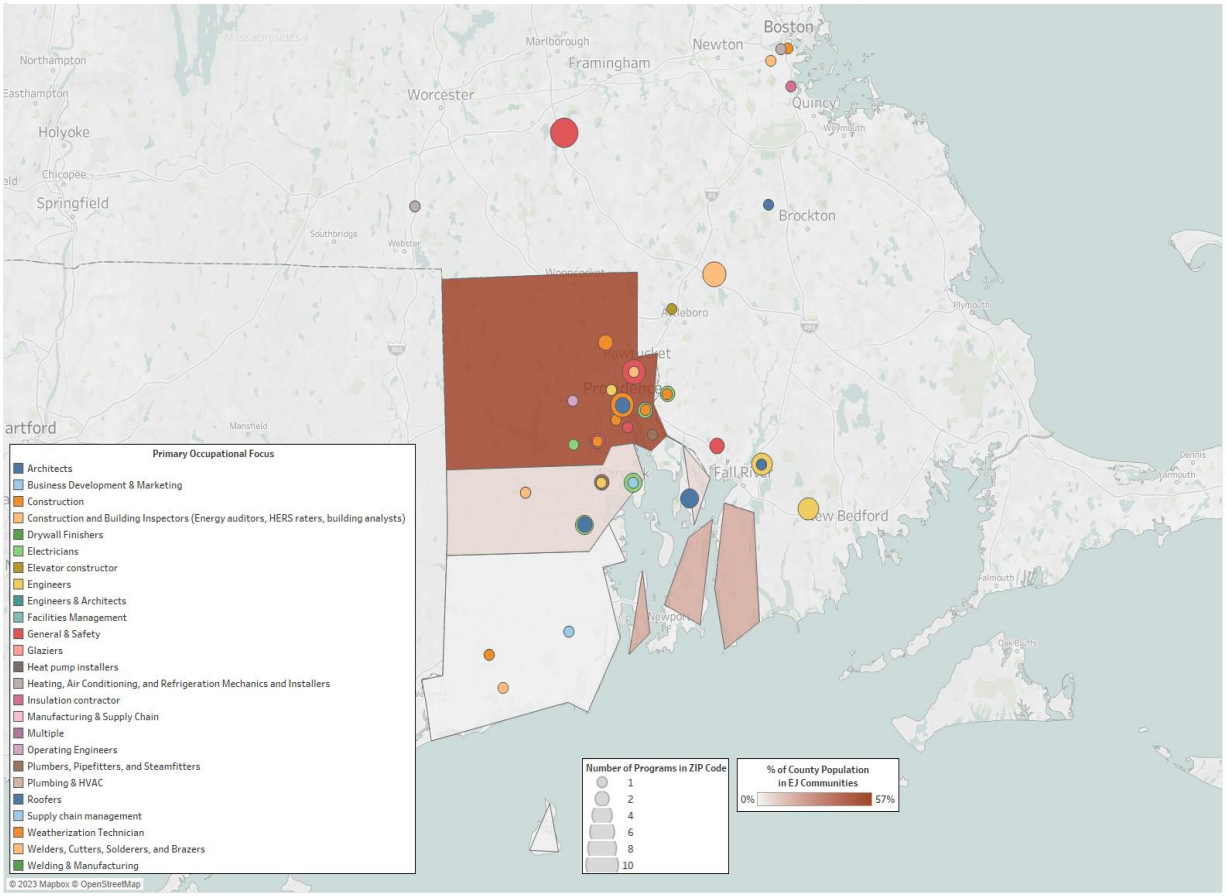
Figure 40. Map of In-Person Trainings Accessible to Rhode Island Residents by Primary Occupational Focus



A considerable proportion of the in-person Rhode Island-based trainings are found in the Providence-Warwick, RI-MA Metro Area. While there is a wide variety of occupational focus in this area, construction, electrician, and general and safety training programs are the most prominent. While there is a concentration of energy efficiency-related training programs in this metropolitan area, there is a lack of programs in the northwestern, western, and southern parts of Rhode Island. There are a few programs in southern Rhode Island, which are hosted by a career and technical education center, a university, and a private training company. These programs are focused on construction, engineering, construction and building inspection, supply chain management, and business development and marketing pathways.

A number of energy efficiency-related training programs identified are located in the state of Massachusetts, in Bristol, Suffolk, Middlesex, and Norfolk counties, which are close to or easily accessible from Rhode Island. These programs are focused mostly on engineers and construction and building inspectors, including energy auditors, HERS raters, and building analysts, and also includes general and safety programs.

Figure 41. Map of In-Person Trainings Accessible to Rhode Island Residents by Primary Occupational Focus, with Percentage of Environmental Justice Community Residents by Rhode Island County



Counties in the northern part of Rhode Island have the greatest share of residents living in an environmental justice community. Rhode Island residents who are interested in energy efficiency careers and live in environmental justice communities close to Providence and Pawtucket can access a variety of training programs. There is, however, a lack of training programs accessible to environmental justice community members living north of Pawtucket and west of Providence. This may make it difficult for these residents to explore energy efficiency career pathways. While the southern section of the state has relatively fewer energy efficiency-related training programs, a smaller share of residents here live in environmental justice communities.

Trainings Held Physically in Rhode Island

Among the eighty-seven energy efficiency-related training programs physically held in Rhode Island, almost one-fifth are apprenticeships, while another 17 percent are programs for job readiness. The research also identified several pre-apprenticeship and apprenticeship-readiness programs. Apprenticeships and related programs provide important opportunities for interested workers to get hands-on experience and land permanent positions. The variety of programs on offer allows multiple entry points to energy efficiency careers and suggest a strong pipeline of incoming workers. Certification

programs represent 11.5 percent while upskilling programs for professionals already in the field represent only seven percent of all in-person trainings in Rhode Island.

Table 3. Degree/Outcome of Energy Efficiency Trainings Held Physically in Rhode Island

Degree/Outcome	No. of Programs	Percent of Programs
Apprenticeship	17	19.5%
Job Readiness	15	17.2%
Pre-apprenticeship	11	12.6%
Certificate	10	11.5%
Bachelor's	9	10.3%
Associate’s	8	9.2%
Upskilling	6	6.9%
Course Credits	3	3.4%
Apprenticeship Readiness	2	2.3%
Certificate & Course Credits	2	2.3%
Continuing Education Unit (CEU) Credits	2	2.3%
Master's	2	2.3%

The identified energy efficiency training programs focus on a wide variety of occupations in the field. More than half of the programs identified focus on building construction workers, electricians, or engineers. Training programs for plumbers, pipefitters, and steamfitters; architects; and heating, air conditioning, and refrigeration mechanics and installers are also common, and a few programs focus on construction and building inspectors.

Table 4. Primary Occupational Focus of Energy Efficiency Trainings Held Physically in Rhode Island

Primary Occupational Focus	No. of Programs
Construction Professionals	13
Electricians	10
Engineers	10
All Occupations – a general & safety focus	10
Plumbers, Pipefitters, and Steamfitters	8
Architects	7
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	6
Construction and Building Inspectors (energy auditors, HERS raters, building analysts)	3
Business Development & Marketing Professionals	2
Heat Pump Installers	2
Plumbers & Heating, Ventilation, and Air Conditioning Technicians	2

Weatherization Technicians	2
Drywall Finishers	1
Elevator Constructors	1
Engineers & Architects	1
Facilities Management Professionals	1
Glaziers	1
Manufacturing & Supply Chain Professionals	1
Operating Engineers	1
Roofers	1
Supply Chain Management Professionals	1
Welders, Cutters, Solderers, and Brazers	1
Welding & Manufacturing Professionals	1
Multi-Occupational Focus	1

Most training programs in Rhode Island align with occupations that most energy efficiency employers employ or anticipate employing in the future.

Trainings Held Physically in Massachusetts

There are thirty-eight energy efficiency training programs held in Massachusetts that are accessible to Rhode Island residents (meaning they are a reasonable travel distance or accessible by train to Rhode Island residents and the educational institutions allow Rhode Island residents to apply). The programs in this category are located in the Massachusetts counties of Bristol, Suffolk, Middlesex, and Norfolk. These trainings are mostly certificate programs and cover a variety of occupations, though almost a quarter are general & safety trainings and 21 percent are engineering programs. Six of the thirty-eight programs focus on construction and building inspectors, including energy auditors, HERS raters, and building analysts.

Table 5. Degree/Outcome of Energy Efficiency Trainings Held Physically in Massachusetts, Accessible to Rhode Island Residents

Degree/Outcome	No. of Programs	Percent of Program
Certificate	18	47.4%
Associate Degree	5	13.2%
Job Readiness	4	10.5%
Apprenticeship	3	7.9%
Bachelor's Degree	2	5.3%
Master's Degree	2	5.3%
Professional Development	2	5.3%
Doctorate Degree	1	2.6%
None	1	2.6%

Table 6. Primary Occupational Focus of Energy Efficiency Trainings Held Physically in Massachusetts, Accessible to Rhode Island Residents

Primary Occupational Focus	No. of Programs
All Occupations – a general & safety focus	9
Engineers	8
Construction and Building Inspectors (energy auditors, HERS raters, building analysts)	6
Electricians	3
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3
Manufacturing & Supply Chain Professionals	2
Architects	1
Construction Professionals	1
Elevator Constructors	1
Insulation Contractors	1
Roofers	1
Weatherization Technicians	1
Welders, Cutters, Solderers, and Brazers	1

Trainings Held Online

Over half, or roughly 55 percent, of the energy efficiency training programs identified by the research are held online. Among these 155 programs, approximately 37 percent provide certificates upon completion. Almost one-third grant Continuing Education Unit (CEU) credits for upskilling and professional development tracking. Very few are degree or job readiness programs. There are no online apprenticeships, because these require hands-on job training and experience.

Table 7. Degree/Outcome of Energy Efficiency Trainings Held Online

Degree/Outcome	No. of Programs	Percent of Programs
Certificate	58	37.4%
Continuing Education Unit (CEU) Credits	49	31.6%
Test Preparation	25	16.1%
Professional Development	10	6.5%
Master's	3	1.9%
Accreditation	2	1.3%
Apprenticeship Educational Hours	2	1.3%
Bachelor's	2	1.3%
Job Readiness	2	1.3%
Graduate Certificate	1	0.6%
Pre-apprenticeship	1	0.6%

The most popular occupational focus for online energy efficiency training programs is construction and building inspectors, including energy auditors, HERS raters, and building analysts. Among the 58 online certificate programs (non-graduate), nineteen focus on construction and building inspectors. Another popular occupational focus for these programs is heating, air conditioning, and refrigeration mechanics and installers. There are fewer programs designed for electricians and engineers, and there are only a few programs for plumbers, pipefitters, and steamfitters.

Table 8. Primary Occupational Focus of Energy Efficiency Trainings Held Online

Primary Occupational Focus	No. of Programs
Construction and Building Inspectors (energy auditors, HERS raters, building analysts)	37
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	23
Operations & Maintenance Professionals	22
All Occupations – a general & safety focus	15
LEED Green Associates	10
Electricians	8
Engineers	6
Heat Pump Installers	6
Management Analysts	6
Weatherization Technicians	4
Business Development & Marketing Professionals	3
Management Workers	3
Manufacturing & Supply Chain Professionals	3
Plumbers, Pipefitters, and Steamfitters	3
Architects	1
Construction Professionals	1
Plumbers & Heating, Ventilation, and Air Conditioning Technicians	1
Ventilation System Installers	1
Multi-Occupational Focus	2

SIDEBAR: CLEAResult Training Provider

CLEAResult, a private training company headquartered in Texas but with an office in Providence, Rhode Island, partners with various organizations to develop energy efficiency trainings based on need or request. With some regular partners, trainings occur monthly, some on the same topic and others on a different topic each month. While CLEAResult attempts to locate free spaces to hold the trainings, they often go where their partners are or where their partners request the training to be held. Some partners work with CLEAResult to train specific internal workers, while others open to trainings to the public.

The inventory captures some of the current CLEAResult trainings, including RI Energy-sponsored trainings, but not all. Below is a list of training topics that CLEAResult covers, though note that this is not

fully updated, as trainings and topics are constantly changing. CLEAResult has been responding to market demand for energy auditors, HVAC technicians, electricians, and plumbers, and has been working to increase the number of trainings for incoming workers. Strategic partnerships with CLEAResult and other training providers help to ensure that the trainings necessary to develop the state's energy efficiency workforce are available and accessible.

CLEAResult Training Topics

Residential

- Air Source Heat Pumps
- Envelope & Building Science
- Green Building: Standards and High-Preforming Homes
- Healthy Homes: Indoor Air Quality and Your Health
- Healthy Homes: Sheridan Small Home Virtual Tour
- Home Comfort: Heating, Cooling & Ventilation
- One- and Two-Family Dwelling Code
- Residential Energy Code Update
- Ventilation: Code Requirements and Compliance Strategies
- Weatherization:Insulation and Building Science
- Zero Energy Homes: Advanced Envelope & Building Science
- Zero Energy Homes: Designing HVAC for Large Spaces with Low Loads
- Zero Energy Homes: Mini Split Heat Pump Duct Design—Warwick, RI Case Study

Commercial

- Advanced Building Commissioning
- Intro to Commercial Building Commissioning
- Rhode Island Commercial Energy Code Update
- Rhode Island Stretch Code Training
- Zero Energy Buildings

Asset Inventory

This section highlights various entities involved in providing funding, career-building, and wraparound services to the Rhode Island workforce.

Funding for energy efficiency workforce development is available, but developing a job training program usually requires organizers to stack funding from a variety of sources. From interviews with energy efficiency stakeholders in Rhode Island, including community-based organizations, training providers, industry associations, technical education providers, and college or university programs, the research team was able to identify flows of funding relating to energy efficiency work and training. Table 8 below includes some stakeholders with whom the research team spoke and the sources of funding they shared.

Many stakeholders receive federal and state funds, notably from the Rhode Island departments of Education, Human Services, and Labor and Training and the Rhode Island Office of Energy Resources.

Local city funds are also available for certain organizations, such as career and technical education centers and community action agencies. Some training providers, including community action agencies and industry associations, may access utility, specifically Rhode Island Energy, funding for energy efficiency trainings.

Table 9. Sample of Energy Efficiency and Workforce Development Funding Opportunities

Organization Name	Funding Opportunity	Funder Type
Rhode Island State Council on the Arts	Build the Future Grant	State Agency
City of Providence	Hardest Hit Community Organizations Fund	State Agency
City of Providence	Workforce Development Funding Program	State Agency
Governor's Workforce Board	Apprenticeship Initiatives	State Agency
Governor's Workforce Board	Incumbent Worker Training Grants	State Agency
Governor's Workforce Board	PrepareRI	State Agency
Governor's Workforce Board	Real Skills for Youth	State Agency
Governor's Workforce Board	Workplace Accessibility Grants	State Agency
Rhode Island Department of Education	21st Century Technology and Equipment Fund	State Agency
Rhode Island Department of Education	Facility Equity Initiative	State Agency
Rhode Island Department of Education	Funding Formula for Aid to Education	State Agency
Rhode Island Department of Human Services	Rhode Island Works (RIW) Program	State Agency
Rhode Island Department of Human Services	WAP: Weatherization Assistance Program	State Agency
Rhode Island Department of Labor and Training	On-the-Job (OJT) Training Program	State Agency
Rhode Island Office of Energy Resources/Rhode Island Infrastructure Bank	Rhode Island Efficient Buildings Fund (RIEBF)	State Agency
Rhode Island Science and Technology Advisory Council	Internship Grant	State Agency
Rhode Island Foundation	Racial Equity and Social Justice Grants	Private

Table 10. Funding Sources of Example Stakeholders

Organization	Federal Funds	RI Dept of Human Services	RI Dept of Education	RI Dept of Energy	RI Dept of Labor and Training	State Aid for Career & Technical Programs	Local City Funds	Utility/ RI Energy	Community - Based Projects	Grants
Community-based Organization #1	X	X		X				X		
Community-based Organization #2	X	X					X	X		
Industry Association	X			X	X			X		
Career and Technical	X					X	X		X	

Education Center			
College/ University Program	**X**	**X**	**X**

Programs that are grant-funded are often somewhat limited in their scope of work, given that many grant-making entities specify the ways in which their grantees may use the funds. Therefore, some workforce development organizations, notably community-based organizations, may require specific energy efficiency grants in order to develop energy efficiency-focused training and education programs. In addition, Community Action Agencies, commonly referred to as CAP Agencies, expressed their need for more funding to complete weatherization work as well as an expansion of their funding to complete pre-weatherization projects in homes that request weatherization. These agencies employ and train energy auditors to improve residential energy efficiency. They receive funding specifically for weatherization work, but they report being unable to weatherize certain homes if the homes require pre-weatherization measures first, due to these funding restrictions.

Holistic funding approaches that provide for all the various aspects of a training program are especially helpful when designing training programs in underserved communities. Program aspects important to consider by funders include funding to hire teachers/instructors; spaces to hold the trainings; administrative workers to plan and organize the trainings; demonstration equipment; general and career counseling for participants; marketing and outreach efforts to find participants; and job placement assistance for participants who complete the training.

Wraparound services, such as transportation assistance, childcare, stipends to support costs of living over the course of the trainings, and career counseling, are important for reducing barriers to entry and bringing a more diverse workforce into the energy efficiency field. There are many residents of underserved communities who could advance in the energy efficiency field and enjoy the career and compensation benefits it provides if they could attend relevant training programs and receive the right support. Examples of wraparound service providers include Rhode Island Reconnect and Rhode Island Department of Human Services (DHS) programs, such as the Child Care Assistance Program and the Rhode Island Works program.

Career-building program providers are vital for increasing awareness of energy efficiency careers and increasing the pipeline of workers in this field. These organizations may be community-based which have a presence and trust within communities who may be interested in the benefits of an energy efficiency career. Other organizations include workforce development programs that focus on either directly hosting job training programs or connecting job seekers with education, training, and job opportunities in a wide range of fields, including energy. Some of these program providers target members of underserved, underrepresented, and marginalized communities, with the aim of connecting these individuals to workforce opportunities that fit their values, interests, and goals.

Table 11. Sample of Workforce Development and Career-building Program Providers

Organization Name	Function	Organization Type
Acadia Center	Advocacy	Climate Organization
Back to Work RI	Workforce Development	State Agency
Building Futures Rhode Island	Workforce Development	Industry Coalition
City of Providence, Workforce Solutions	Workforce Development	City Agency
CLEAResult	Workforce Development	Private
Climate Jobs RI	Advocacy & Job Creation	Labor Coalition
Community College of Rhode Island	Career Building/Job Readiness	Community College
Cranston Area Career and Technical Center	Career Building/Job Readiness	Career and Technical Education Center
Davies Career & Technical High	Career Building/Job Readiness	Career and Technical Education Center
Equus Workforce Solutions	Workforce Development	Private
Garden Time's Green Reentry	Workforce Development	Non-profit
Groundworks Rhode Island	Workforce Development	Non-profit
Institute for Labor Studies and Research	Workforce Development	Labor Union & Non-profit
Northeast Energy Efficiency Partnerships	Education	Non-profit
PrepareRI	Workforce Development	State & Private
Providence Career & Technical Academy	Career Building/Job Readiness	Career and Technical Education Center
Real Jobs Rhode Island	Workforce Development	Private
Regional Career Technical Center at Coventry High School	Career Building/Job Readiness	Career and Technical Education Center
Rhode Island Association, affiliate of PHCC National Association	Workforce Development	Industry Association
Rhode Island Black Business Association (RIBBA)	Workforce Development	Non-profit
Rhode Island Builders Association Residential Construction Workforce Partnership	Workforce Development	Non-profit
Rhode Island Department of Education	Education	State Agency
Rhode Island Department of Labor & Training: Workforce Development Services	Workforce Development	State Agency
Rhode Island Science and Technology Advisory Council	Workforce Development	State Agency
RI Builders Association	Workforce Development	Private
RI Energy Efficiency and Resource Management Council	Education	State Agency
RI Workforce Alliance, Economic Progress Institute	Workforce Development	Private
Skills for Rhode Island's Future	Workforce Development	Non-profit

State of Rhode Island Governor's Workforce Board	Workforce Development	State Agency
The Green & Healthy Homes Initiative	Workforce Development	Private
The Metropolitan Regional Career and Technical Center	Career Building/Job Readiness	Career and Technical Education Center
The Rhode Island College Workforce Development Hub	Workforce Development	Private
University of Rhode Island	Career Building/Job Readiness	Private
Warwick Area Career and Technical Center	Career Building/Job Readiness	Career and Technical Education Center
Workforce Solutions of Providence/Cranston	Workforce Development	State Agency
Youth Build Futures	Workforce Development	Non-profit

Specific Asset Examples

Many entities play key roles in increasing access to training and workforce development opportunities for low-income and underserved communities. Rhode Island Reconnect and Rhode Island's Community Action Agencies are two important examples of these types of workforce assets.

There are seven Community Action Agencies in Rhode Island that are not-for-profit organizations developed to address the needs of low-income communities through policy and advocacy; job training and technical assistance; education, housing, health, and financial supports; and capacity-building measures. In Rhode Island, they serve all thirty-nine cities and towns. As part of the weatherization programs, they hire and train energy auditors to complete energy efficiency assessments and weatherization measures in residential spaces across the state. They rely on federal and state funding as well as funding from the local utility, or Rhode Island Energy.

Rhode Island Reconnect works with job seekers to break down the barriers they face to achieving a career that supports them and their families with living wages and benefits. This organization provides participants with various wraparound services, such English language instruction, childcare, transportation, and counseling assistance, so they are able to complete their job training or education programs and earn the credentials they need to enter the workforce.

Recommendations

Based on the findings of this workforce assessment, this report offers the following recommendations for advocates and practitioners operating at the intersection of energy efficiency and workforce issues.

1 **Prioritize increasing the pipeline of future energy efficiency workers through education, communications, and information sharing.** Hiring challenges are apparent and being felt industry wide. In a tight hiring market, with significant growth opportunities ahead, bringing new workers into the industry is a foundational step toward building a strong and stable Rhode Island energy efficiency workforce**.** Most prospective workers, especially students and underserved populations, need greater access to and more information about the wide range of energy efficiency jobs that are available, the benefits of these jobs, their requirements, and the programs to support entry into this field. Select specific options include the following:

a. *Develop modern and inclusive marketing tools, resources, and materials about career pathways* that have information on trainings, wages, and market opportunities, as well as highlighting varying requirements for distinct types of jobs (especially entry-level).
b. *Launch a marketing campaign with targeted outreach and community-oriented communications activities to rebrand energy efficiency jobs,* highlighting their benefits, explaining what various jobs entail, and building enthusiasm for specific occupations.
c. *Address the need for a single database that has information about work-based learning opportunities* in energy efficiency, and make this available to students, instructors, and companies. There are several agencies that could host the database, including the Rhode Island Department of Education, the Governor's Workforce Board, and the Rhode Island Office of the Postsecondary Commissioner. PrepareRI's existing infrastructure—developed around work-based learning opportunities—could also be utilized.
d. *Expand funding options and ease the provision for wraparound support* to cover things like childcare and transportation costs and compensate students for missing paid employment opportunities outside of school or during the summers.
e. *Establish supportive environments and concierge-like services* to provide back-end support, career mentoring, and staffing and other organizational capacity to address various personal and societal barriers.

2 **Pursue a comprehensive approach that balances education, training, and certifications, while getting new workers the foundational, in-the-field experience they lack.** While education, training, and certifications can support securing and advancing in an energy efficiency career, this is not considered to be a significant barrier to energy efficiency employment in Rhode Island. In surveys, both employers and employees place a high priority on seeking and gaining experience in specific occupations. However, training, education, and work experience each fulfill important roles, and a comprehensive approach

that combines work-based learning and mentorship with certifications and ongoing training, among things items, can be beneficial in Rhode Island.

3 **Actively support efforts to secure initial energy efficiency employment.** Securing the first job can be exceedingly difficult for prospective entrants into an energy efficiency career, especially in technical or trade-related positions. Among youths, people of color, and those from underserved backgrounds, the most important way to get ahead is to get that first job. Even in an industry desperate for new workers, surveys and interviews confirm the importance of initial ability to do the work immediately. It is therefore critical to support aspiring energy efficiency workers in their efforts to launch this career. One approach is to alleviate some of the risk employers take when hiring new workers by helping to train them up more quickly, through specific apprentice programs or "earn-and-learn" programs sponsored by the state as well as through internships, specialized early technical education, and practical training that target individuals early in their careers.

4 **Strengthen educational institutions' emphasis on energy efficiency.** Rhode Island educational institutions (e.g., vocational-technical programs, high schools, community colleges, and four-year degree institutions) are not offering much in the way of an energy efficiency curriculum and are generally not focused on this sector. This begins with the emphasis on obtaining a four-year degree over a pathway into the trades, but it is compounded by a lack of instructors, lack of awareness and knowledge of opportunities and pathways, and perceptions of limited interest among students. A reawakening to the value of the trades is leading to some general optimism, but much more intentional focus is needed to change the dynamic among Rhode Island educational entities. Supporting early exposure to energy efficiency careers and encouraging partnerships with the energy efficiency sector that provide students with real-world experience are examples of best practice. So, too, is evolving current curriculums and hiring instructors to provide specific training and knowledge related to energy efficiency. Updating the vocational-technical program, high school, and community college models to train students more directly for energy efficiency careers, while also creating more seats for student demand and better mechanisms to connect students with opportunities for work-based learning and hands-on experience with employers, year-round, can aid their professional development and success.

5 **Bring an equity-centered approach to further increase the pipeline of workers and bring higher-quality job opportunities to underserved communities.** Many efforts to boost the pipeline of future efficiency workers could have the dual advantage of creating pathways to greater equity, access, and diversity in the workforce. These dual-advantage pathways may include establishing alternative means of accessing energy efficiency jobs; efforts to reach workers who are not native English speakers; investing in wraparound support services; and partnering with community organizations on workforce efforts.

a. *Explore options that support and expand alternative pathways to energy efficiency positions to ensure greater access.* Individuals who lack the means to earn a bachelor's or graduate degree can be shut out of many high-quality energy

efficiency jobs. Establishing alternative credentials, training certificates, and pathways can make these roles accessible to more individuals.

b. *Expand the language offerings so that workers who are not native English speakers—and especially Spanish speakers—can access energy efficiency jobs.* This is necessary to address one of the most common concerns expressed in interviews, which is the absence of resources and training capacity for Spanish speakers, as well as speakers of Portuguese, French, Chinese, and other languages. Those providing services to job seekers should also emphasize hiring bilingual staff, such as case managers, workforce concierges, outreach coordinators, and other relevant individuals.
c. *Fund wraparound services and recruitment initiatives that serve target populations in underserved communities.* Providing wraparound services, such as transportation and childcare assistance, housing, legal counsel, stipends to support costs of living during trainings, and career counseling, can begin leveling the playing field for those struggling with social and personal barriers. There are a number of wraparound providers already in the state, and successful expansion programs have been stood up to start addressing this need.
d. *Work closely with community-based organizations to reach underrepresented communities and tap into their pipeline of qualified future energy efficiency workers.* When recruiting workers from underserved communities, community-based organizations are effective conduits to target populations, due to their community presence, positive power dynamic, and strong level of trust within the community. Strategic partnerships that boost their capacity and provide staffing support can be key.
e. *Develop more holistic funding opportunities that can provide for all of the distinct aspects of developing a training program*. This can be especially helpful in underserved communities. Specific elements of training programs that do not always fall in the first tier of funding include (1) well-qualified instructors, (2) space for trainings, (3) administration and back-end workers, (4) demonstration equipment, (5) marketing and outreach to find hard-to-reach participants, and (6) job placement assistance.

6 **Encourage leadership and collaboration across the Rhode Island energy efficiency workforce development ecosystem.** Most interviewees highlighted the need for Rhode Island to more actively prepare for, and address, its energy efficiency workforce needs and move away from the current siloed approach. The state would benefit from addressing its lack of a leading entity or institution that can support collaboration, foster information sharing, and increase engagement with and enthusiasm about a growing energy efficiency workforce (akin to the role MassCEC plays in Massachusetts and NYSERDA plays in New York). There is a strong need for energy efficiency workforce development coordination across the state. Many actors are involved in related training programs, funding, the provision of wraparound services, and other workforce supports, but few are bringing everyone together to deliver coordinated services. Stakeholders within the workforce ecosystem, such as community organizations, training providers, industry groups, and RI Energy, should encourage and incentivize each other to coordinate and collaborate more effectively on this issue, engaging through the breadth of available working groups and advisory committees.

7 **Leverage and scale successful programs and success stories in Rhode Island.** To support the previous recommendation on leadership and collaboration, many programs in the state have developed models to learn from and scale up. Examples include the following:

a. The *Governor's Workforce Board*, which is the state's long-standing primary workforce training and investment entity. It is a critical player and partner in helping state entities design, fund, and build training programs, and it is the most likely candidate to lead the drive for a stronger focus on energy efficiency workforce development. Its new subcommittee, the Green Energy Workforce Advisory Committee, is a natural starting point.
b. Respected *government agencies* that are addressing the workforce needs in energy efficiency from different angles, including Rhode Island's Office of Energy Resources, Department of Education, Department of Labor and Training, Science and Technology Advisory Council, and Office of the Postsecondary Commissioner.
c. *Real Jobs Rhode Island*, an initiative led by businesses across the state, partners with employers, training providers, and community organizations to connect job seekers with employers, upskill current workers, recruit new workers, and support business ventures.
d. *Climate Jobs Rhode Island* is a coalition of labor, environmental, and community groups moving toward a just transition to a green economy that meets worker needs and advances equitable growth.
e. *Skills for Rhode Island's Future* is a non-profit organization designed to connect unemployed and underemployed individuals across the state with meaningful employment opportunities.
f. Garden Time's *Green Reentry* program supports formerly incarcerated or justice-impacted individuals who want to enter the workforce in environmental-based industries with job training and job readiness opportunities.
g. The community-based organization *Groundworks RI* offers adult job training to Rhode Islanders who are seeking environmental sector employment that allows them to work in their own communities. The organization places a special emphasis on serving formerly incarcerated individuals and public housing residents.
h. Specializing in the residential construction industry, the Rhode Island Builders Association's *Residential Construction Workforce Partnership* seeks to bridge the skills gap in the construction industry by offering residential construction trade training to interested adults. The Partnership also offers vocational English as a second language classes aligned with the carpentry program.
i. *YouthBuild Futures* is a non-profit that helps youth who lack a high school diploma or financial resources to tap into their potential through multiple initiatives, including education support and job training for the construction industry and other career pathways.
j. The *Career and Technical Education Board of Trustees*, which oversees Rhode Island's career and technical education programs, can help ensure that existing students are receiving the support they need to develop professionally and access technical and trade occupations and that prospective students have opportunities to explore these pathways.

Rhode Island Energy is an important stakeholder in developing Rhode Island's energy efficiency workforce, and working in partnership with many others, it can have considerable impact. Near-term actions to address energy efficiency workforce needs should include the following:

1. **Encourage workforce ecosystem coordination and leadership development** by advocating for an increased emphasis on energy efficiency and workforce development within relevant state-wide entities and supporting emerging leadership efforts around energy efficiency workforce development in the state. Where RI Energy participates in relevant working groups, committees, and advisory bodies, it can highlight the importance of focusing on this issue. It can also support the development of relationship building and collaboration among educators, policymakers, employers, training providers, unions, and community groups, which are critical to long-term success.

2. **Support marketing efforts and pipeline building** by further leveraging its marketing and communications capacity with credible information resources and campaigns and partnering with groups, especially those serving underserved communities, to raise awareness about the value and opportunities of energy efficiency jobs.

3. **Champion energy efficiency-related programs at all levels of education** by increasing support for specific programs in high schools and vocational-technical schools, including curriculum development, instructor recruitment, internships, and equipment needs. Utilities like RI Energy are well suited to understand the breadth of soft and hard skills tomorrow's energy workers need and can connect with and support trade schools and apprentice/internship programs to better develop these. RI Energy can also promote its own internships to specific schools in the region to help develop their students.

4. **Partner with contractors** to expand worker recruitment by communicating the benefits of energy efficiency careers, funding career navigators and wraparound supports, and educating contractors about opportunities in energy efficiency. RI Energy is well situated to support diversification and ensure the inclusion of contractors that resemble and represent the populations the utility serves. It can do so by encouraging small and minority-, women-, and veteran-owned business enterprises (MWVBEs) to participate in bidding processes and by assisting contractors—especially Hispanic/Latino contractors—in understanding how best to compete for bids. RI Energy can also support entrepreneurialism in this sector by working with the abundance of smaller firms working in the state's residential market.

Career Profiles

Construction and Building Inspectors

Summary: Construction and building inspectors conduct analyses of buildings and construction projects to determine the quality of the structures and systems as well as their compliance with the required legal codes, standards, regulations, or specifications. This requires familiarity with the specific structures and systems in the buildings as well as the measuring devices used to collect the necessary data. There are many types of inspectors, and they typically specialize in a building system or other building aspect. Energy auditors or raters are a type of inspector in the energy efficiency industry who evaluate a building's energy waste.

Often, construction and building inspectors need a high school diploma and some work experience in the construction industry, both of which provide inspectors with a foundation in the basic mathematics and mechanical skills used when conducting inspections. In addition to these typical educational and work experience requirements, construction and building inspectors complete on-the-job training to learn job duties more specific to their local codes and regulations, building or construction system, and reporting processes. Once experienced, they may advance to supervisory or management positions. Construction and building inspectors in Rhode Island earn a wage greater than statewide averages at the entry-level, median, and experienced levels. Jobs that could easily transition into construction and building inspector roles are found across multiple occupational groups, including business and financial operations; life, physical, and social sciences; protective services; farming, fishing, and forestry; and transportation and material moving.

JOB DESCRIPTION[15]

Construction and building inspectors evaluate buildings and other construction projects to ensure they are compliant with local and national codes, ordinances, and regulations. These inspectors review building plans and specifications; utilize several types of measuring and monitoring equipment to assess the electrical, plumbing, heating, and various other systems for damage or other issues; and document their findings to share with superiors, clients, or authorities. They may be involved at multiple stages of a project and play a vital role in certifying the quality and safety of the project.

There are several types of construction and building inspectors, including but not limited to coating inspectors, home inspectors, and inspectors who specialize in a specific system of a building or project. These specialty inspectors could be electrical inspectors, plumbing inspectors, elevator inspectors, or mechanical inspectors who focus on the heating, ventilation, air conditioning, and refrigeration systems. Energy auditors, a type of inspector, play a role in the energy efficiency industry by evaluating building and home systems, such as the insulation and the heating and cooling systems, to estimate air leakage and energy waste. From there, they can work with the building owners to determine the best ways to lower energy consumption, waste, and costs.

[15] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed May 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

WAGES

The entry-level, median, and experienced wages for construction and building inspectors in Rhode Island are greater than the statewide averages at each level, respectively. Entry-level inspectors earn $24 an hour, compared to the state average of just over $15 an hour for entry-level workers. Experienced inspectors can increase their wages to $40.50 per hour, which is a little more than $1 an hour greater than the average experienced worker wage in the state. The median hourly wage for construction and building inspectors in Rhode Island is just over $33 per hour.

Table 12. Wage Distribution[16]

	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Construction and Building Inspectors (Annual)	$49,900	$69,200	$84,300
Construction and Building Inspectors (Hourly)	$24.01	$33.27	$40.53

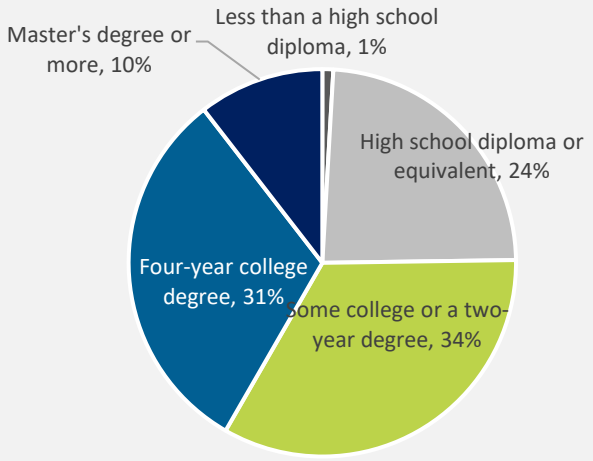
EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[17]

Typically, workers are required to have a high school diploma and construction work experience to become building or construction inspectors. Though much of their training occurs while on the job, basic skills learned in high school, such as mathematics and writing, provide trainees with a stronger educational foundation. During on-the-job training, inspectors learn about building codes and standards as well as local ordinances, inspection and evaluation techniques, and documentation practices. After completing sufficient training, inspectors may apply for a license or certification as required by the city or state. Energy auditors or raters do not need to meet national certification requirements, but earning a certification demonstrates a workers' competency and may open additional opportunities for development and advancement.

Of the current pool of construction and building inspectors in Rhode Island, one percent have less than a high school diploma or equivalent. Roughly one-quarter of current workers have a high school diploma or equivalent, and 34 percent have some college or a two-year degree. Just over three in ten have a four-year college degree, and the remaining ten percent have a master's degree or doctorate.

[16] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[17] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.

Figure 42. Educational Attainment of Current Workers[18]



Based on 163 active job postings for construction and building inspectors in Rhode Island between May 2022 and May 2023,[19] certifications currently in demand from employers include:

- Certified Construction Manager (CCM)
- Driver's License
- Envelope Professional
- Fire Inspector II
- Licensed Professional Engineer
- NICET Certification (not specified)
- NICET Level 1
- Occupational Health and Safety Technologist (OHST)
- Residential Building Inspector (RBI)
- Society for Protective Coatings Certification (SSPC)

Construction and building inspectors should understand common building systems in order to conduct proper evaluations of them and ensure their proper functioning. These workers should also know how to operate the measuring instruments and other equipment they use to gather the data needed to assess the systems and report their findings. Construction and building inspectors are most frequently required to have proficiency in some or all of the following:[20]

- Ammeters
- Fire Safety
- HVAC Systems
- Mechanical Systems

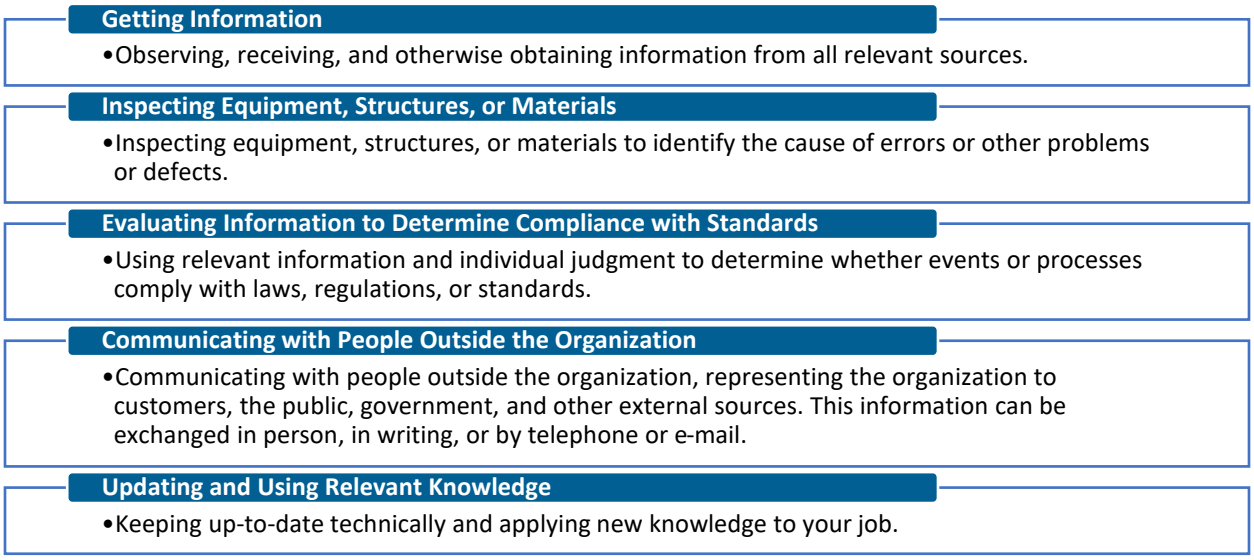
[18] Adapted from JobsEQ occupational profile for the construction and building inspector workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diversity, accessed May 2023. http://jobseq.eqsuite.com.

[19] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

[20] Based on 163 active job postings for construction and building inspectors in Rhode Island from 5/7/2022 to 5/7/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

- Microsoft Office
- Personal Computers (PCs)
- Plumbing Systems

Figure 43. Top Work Activities[21]



CAREER TRANSITION POTENTIAL

This section highlights occupations that require skills and experience levels similar to construction and building inspectors and could, therefore, allow for transition into an inspector job with minimal additional preparation. Jobs that could facilitate transition into a construction and building inspector position are found within several occupational groups, including business and financial operations; life, physical, and social sciences; protective services; farming, fishing, and forestry; and transportation and material moving.[22]

A construction and building inspector career is a good pathway into the energy efficiency industry for workers featured in the table below. Workers in these occupations have familiarity with inspection practices and understand the importance of safety measures. Like construction and building inspectors, they typically study relevant codes, laws, and regulations; collect data; analyze their findings; and report results.

Fire inspectors and investigators, agricultural inspectors, traffic technicians, and transportation inspectors would all see a median hourly wage increase following transition into a construction and building inspector career. On the other hand, compliance officers, miscellaneous business operations

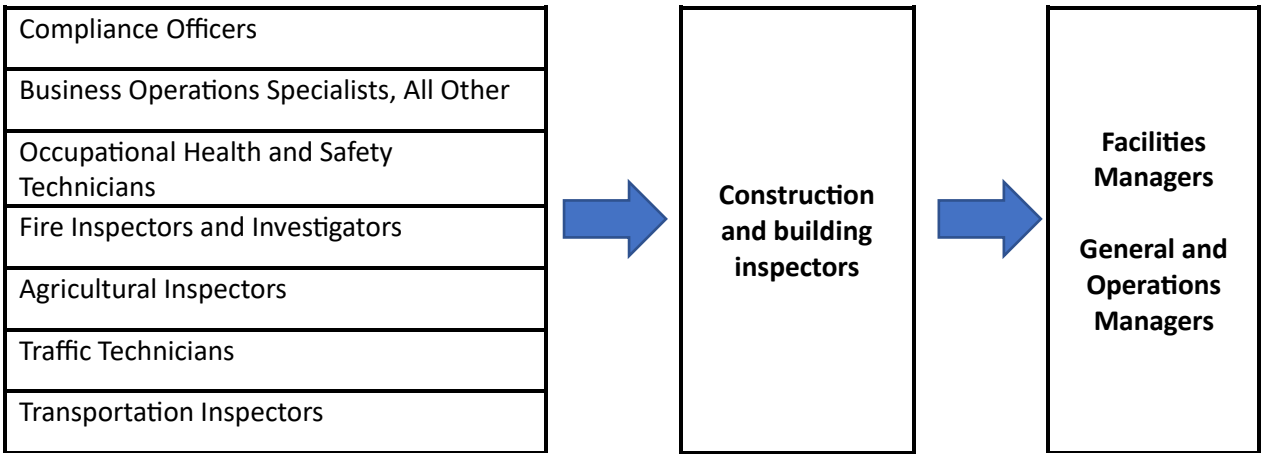
[21] ONET OnLine, Accessed May 2023. https://www.onetonline.org/.
[22] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

specialists, and occupational health and safety technicians would see a drop in their median hourly wages, with miscellaneous business operations specialists' wages falling the most—roughly $6 an hour. Workers in all of these occupations would meet the typical entry-level education requirements for construction and building inspectors, and workers in several of these occupations would exceed the requirements.

Table 13. Transferable Occupations[23]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry-Level Education
Construction and Building Inspectors	**354**	**$33.27**	**High school diploma or equivalent**
Compliance Officers	992	$38.49	Bachelor's degree
Business Operations Specialists, All Other	3,443	$39.52	Bachelor's degree
Occupational Health and Safety Technicians	80	$34.77	High school diploma or equivalent
Fire Inspectors and Investigators	53	$32.20	Postsecondary non-degree award
Agricultural Inspectors	44	$23.49	Bachelor's degree
Traffic Technicians	18	$26.39	High school diploma or equivalent
Transportation Inspectors	43	$25.72	High school diploma or equivalent

Figure 44. Career Transferability & Progression[24]



[23] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

[24] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

Electricians

Summary: Electricians are specialized in the electrical systems commonly found in buildings and infrastructure sites, and they are especially important in the construction and energy efficiency industries. They install, maintain, and repair the electrical, communication, lighting, and control systems and components in homes, buildings, and other establishments. There are five types of electricians, named for where they most often work or where their specialty lies: residential, commercial, industrial, auto, and maintenance. Following safety regulations is vitally important for all electricians. Experienced electricians may be sought for consultation by building engineers and architects designing new construction projects.

Jobs that could allow for an easy transition into an electrician position are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups. Entry-level and median wages for electricians in Rhode Island are greater than statewide averages. Electricians acquire the necessary skills and technology-specific knowledge through either a four-to-five-year apprenticeship or formal education. They must have a high school diploma or equivalent and be at least 18 years old. Many states require electricians to obtain a license. Electricians may advance to become master electricians, supervisors, or other related roles in project management.

JOB DESCRIPTION[25]

Electricians are necessary for construction projects because they install, maintain, and repair the electrical systems and components in homes and buildings. Specifically, they work with electrical power, communications, lighting, and control systems. They execute electrical wiring plans according to blueprints, connect electrical systems to power lines, and test the systems. Electricians must be vigilant in ensuring the safety of the systems and components they install and repair, and they must also take great care to ensure their own safety. Buildings engineers and architects may consult experienced electricians on new construction projects.

The five types of electrician are residential, commercial, industrial, auto, and maintenance electricians. Residential electricians are the most common and may find themselves working with phone, security, ventilation, and backup power systems in the home. Industrial electricians often need specialized knowledge of machines found in power plants, factories, mills, and mines, while auto electricians are expert in motor vehicles. There is currently a high demand for qualified electricians in various contexts, including hospitals, railways, telecom services, and airports. Electricians may be self-employed or do contractual work.

WAGES

The entry-level and median wages for electricians in Rhode Island are greater than the statewide averages. Entry-level electricians earn a little under $21 an hour, compared to the state average of just over $15 an hour for entry-level workers. Experienced electricians can increase their wages to over $36 per hour, though they earn less than the average experienced worker in the state. The median hourly wage for electricians in Rhode Island is between $30 and $31.

[25] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed January 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

Table 14. Wage Distribution[26]

	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Electrician (Annual)	$43,000	$63,600	$75,200
Electrician (Hourly)	$20.67	$30.57	$36.16

EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[27]

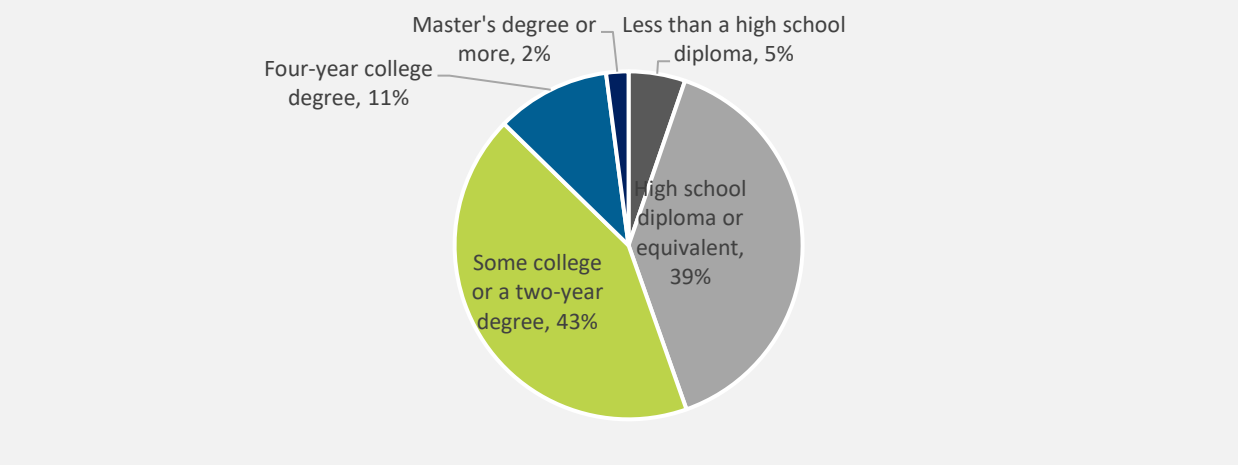
Electricians must have at least a high school diploma or equivalent. They often learn the trade in a four-to-five-year apprenticeship or in formal education. Workers can earn certification by taking a two-year electrician course at a technical school. Electricians must be at least 18 years old. A basic understanding of algebra is important for success.

Many states, including Rhode Island, require electricians to obtain a license. There are additional certifications available in photovoltaic, electrical generating, and lighting systems. Electricians must be able to read blueprints and interpret technical diagrams as well as understand the National Electrical Code and local regulations. They are required to stay up to date on codes and regulations as new safety measures and new products are released.

Of the current pool of electricians in Rhode Island, 39 percent have a high school diploma or equivalent. Only five percent have less than a high school diploma. Roughly four in ten electricians have some college or a two-year degree, while 13 percent possess a four-year college degree or higher.

[26] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[27] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.

Figure 45. Educational Attainment of Current Workers[28]



Based on 275 active job postings for electricians in Rhode Island between May 2022 and May 2023,[29] certifications currently in demand from employers include:

- Driver's License
- Commercial Driver's License (CDL)
- Class B Commercial Driver's License (CDL-B)
- Certified Tree Worker
- Certified Welder
- OSHA 10-hour Safety Training
- OSHA 30-hour Safety Training

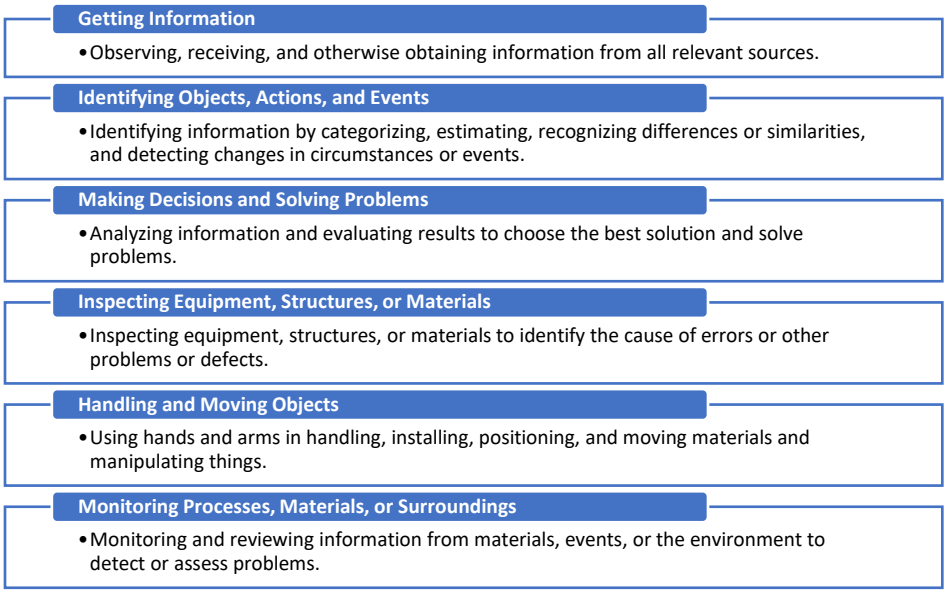
Since electricians are responsible for connecting and installing electrical circuits and systems, they are expected to know how to read blueprints and schematics and work with circuits and other electrical equipment, such as conduit benders. They also need to understand common plumbing and HVAC systems with electrical components that are found throughout the various buildings in which electricians work. Electricians are most frequently required to have proficiency in some or all of the following:[30]

- Ability to lift 41–50 pounds
- Ability to lift 51–100 pounds
- Blueprint Reading
- Circuits
- Conduit Benders
- Generators
- HVAC Systems
- Manufacturing

[28] Adapted from JobsEQ occupational profile for the electrician workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diversity, accessed May 2023. https://jobseq.eqsuite.com/.
[29] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.
[30] Based on 275 active job postings for electricians in Rhode Island from 5/7/2022 to 5/7/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com/.

- Plumbing
- Power Tools

Figure 46. Top Work Activities[31]



CAREER TRANSITION POTENTIAL

This section highlights the occupations that require skills and experience levels similar to electricians and could, therefore, allow for transition into an electrician job with minimal additional preparation. Jobs that could facilitate transition into an electrician position are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups.[32]

An electrician career is a good pathway into the energy efficiency industry for workers featured in the below tables. Heating, air conditioning, and refrigeration (HVAC) technicians understand the electrical components and wiring of heating, ventilation, air conditioning, and refrigeration systems in order to test, install, and maintain them. This familiarity with electrical systems can be expanded upon easily. Additionally, HVAC technicians would see a slight wage increase following this career transition. Elevator and escalator installers and repairers have key transferable skills owing to their ability to read and understand blueprints and connect electrical wiring, though these workers may see a substantial decrease in hourly wages after transitioning to a career as an electrician. Typical entry-level education requirements for HVAC technicians and elevator and escalator installers and repairers meet or exceed the typical requirements for electricians.

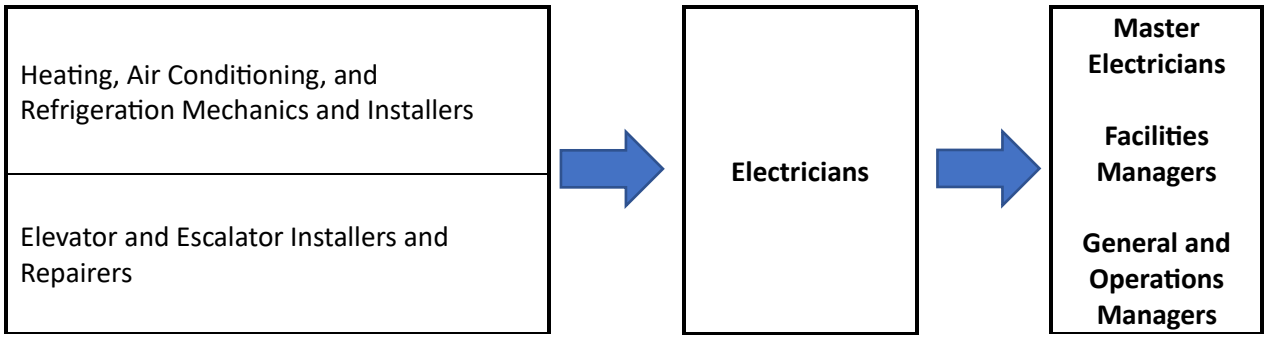
[31] ONET OnLine, Accessed January 2023. https://www.onetonline.org/.

[32] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

Table 15. Transferable Occupations[33]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry- Level Education
Electricians	**2,270**	**$30.57**	**High school diploma or equivalent**
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,263	$30.44	Postsecondary non-degree award
Elevator and Escalator Installers and Repairers	53	$61.58	High school diploma or equivalent

Figure 47. Career Transferability & Progression[34]



[33] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

[34] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Summary: Heating, air conditioning, and refrigeration mechanics and installers (HVAC technicians) specialize in installing, cleaning, and repairing heating, ventilation, cooling, and refrigeration systems. These workers are particularly important to the buildings and energy efficiency industries due to their specialization in temperature control and air quality systems, which consume substantial amounts of energy. They must be comfortable working in extremely hot or very cold environments and during evenings and weekends. Postsecondary education and apprenticeships are two common ways HVAC technicians learn the trade. Depending on their location, some may need to obtain a license to work in the field. It is vital that HVAC technicians are properly trained in handling hazardous refrigerants to prevent injuries, accidents, and fatalities. All HVAC technicians who plan to handle refrigerants are required to pass the US Environmental Protection Agency certification exam.

Jobs that could facilitate transition into a HVAC technician career are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups. Entry-level and median wages for HVAC technicians in Rhode Island are greater than statewide averages. HVAC technicians can become senior technicians with proper experience.

JOB DESCRIPTION[35]

HVAC technicians are important for temperature control and air quality in many types of buildings, as they install, clean, and conduct maintenance and repairs on heating, ventilation, cooling, and refrigeration systems. They commonly work in residences, schools, hospitals and commercial buildings, and manufacturing facilities. HVAC technicians must be comfortable working in environments that are extremely hot or very cold since they are often repairing malfunctioning temperature control systems. They may also work in awkward or cramped spaces where HVAC systems are typically located.

HVAC technicians may become specialized in a specific element of HVAC, such as radiant heating systems, commercial refrigeration, or solar panels. HVAC technicians sometimes work evenings and weekends on top of their regular hours to repair malfunctioning systems. As HVAC systems are becoming more complex, employers typically prefer technicians with a postsecondary education or who have completed an apprenticeship. It is especially important that technicians working with refrigerants understand and implement the required safety measures.

WAGES

Entry-level and median wages for HVAC technicians in Rhode Island are greater than the statewide averages. Entry-level HVAC technicians typically earn a little over $21 an hour, while the statewide entry-level average is just over $15 an hour. Experienced HVAC technicians earn almost $37 an hour, but this is roughly $2 an hour less than the average experienced worker in the state. The median hourly wage for Rhode Island HVAC technicians is just over $30 an hour.

[35] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed January 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

Table 16. Wage Distribution[36]

	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Heating, air conditioning, and refrigeration mechanics and installers (Annual)	$44,400	$63,300	$76,800
Heating, air conditioning, and refrigeration mechanics and installers (Hourly)	$21.34	$30.44	$36.92

EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[37]

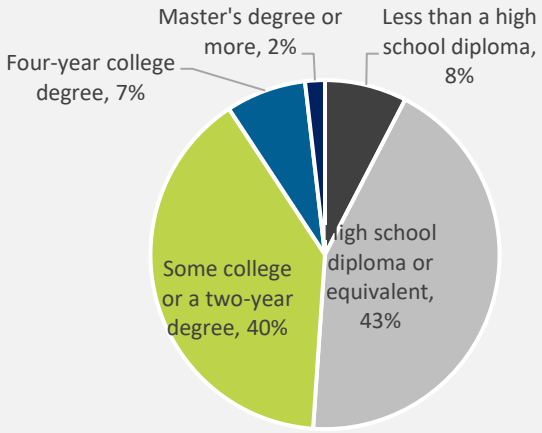
The typical entry-level education requirement for HVAC technicians is a postsecondary non-degree award. Today's employers prefer to hire HVAC technicians who have a postsecondary education or have completed an apprenticeship. A postsecondary education is completed in six months to two years, depending on the institution and the qualification, and upon completion, students earn either a certificate or an associate's degree. Apprenticeships typically last three to five years.

Relevant postsecondary education and apprenticeships provide vocational education along with instruction in mathematics and physics. In addition, HVAC technicians who handle refrigerants are required to pass the US Environmental Protection Agency certification exam. HVAC technicians may also be required to obtain state licenses. Rhode Island requires all contractors and subcontractors involved in building or repairing residential or commercial structures to be registered with the state's Contractors' Registration and Licensing Board.[38]

Of the current pool of HVAC technicians in Rhode Island, just over four in ten have a high school diploma or equivalent. Another four in ten have some college or a two-year degree. Roughly ten percent of HVAC technicians have a four-year college degree or higher, while the remaining eight percent have less than a high school diploma.

[36] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[37] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.
[38] State of Rhode Island, "FAQs for the contractor," accessed June 2023. https://crb.ri.gov/contractor-registration/faqs

Figure 48. Educational Attainment of Current Workers[39]



Based on 461 active job postings in for HVAC technicians in Rhode Island from May 2022 through May 2023,[40] certifications currently in demand from employers include:

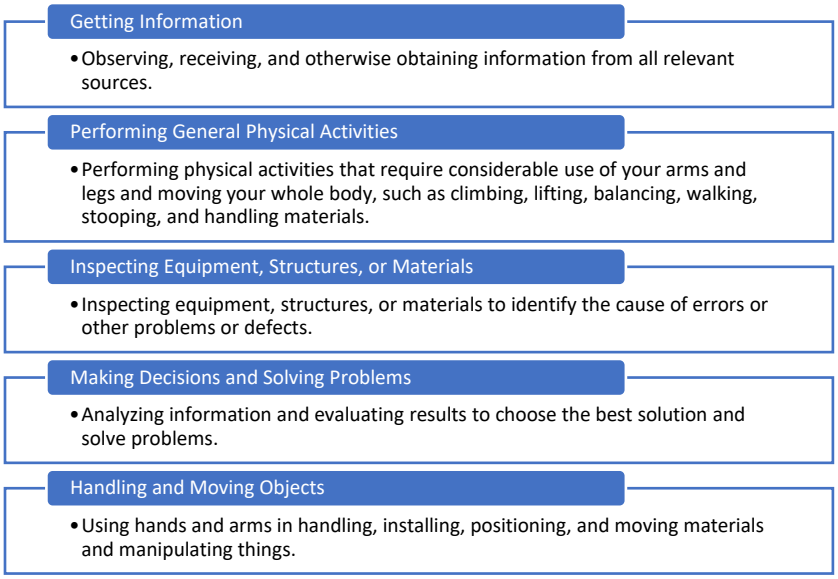
- Certification in Cardiopulmonary Resuscitation (CPR)
- Driver's License
- EPA Section 608 Certification (EPA 608)
- EPA Universal Certification
- OSHA 10-hour Safety Training
- Secret Clearance

HVAC systems include heavy components, so technicians need to be physically fit in order to carry, lift, or support them. It is helpful for HVAC technicians to have background knowledge or training in plumbing and electrical systems because they need to know how to connect HVAC systems with other piping systems and set up or fix the electrical components of HVAC systems. HVAC technicians are most frequently required to have proficiency in some or all of the following:[41]

- Ability to lift 51–100 pounds
- Boilers
- Gauges
- HVAC Systems
- Mechanical Systems
- Microsoft Office
- Plumbing
- Power Tools
- Refrigeration Systems
- Using Ladders

[39] Adapted from JobsEQ occupational profile for the electrician workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diveristy, accessed May 2023. http://jobseq.eqsuite.com.
[40] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.
[41] Based on 461 active job postings for HVAC technicians in Rhode Island from 5/7/2022 to 5/7/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

Figure 49. Top Work Activities[42]



CAREER TRANSITION POTENTIAL

This section highlights the occupations that require skills and experience levels similar to HVAC technicians and could, therefore, allow for transition into an HVAC technician job with minimal additional preparation. Jobs that could facilitate transition into an HVAC technician position are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups.[43]

Since HVAC systems require some background knowledge or training in plumbing and electrical systems, electricians and plumbers, pipefitters, or steamfitters could easily transition into HVAC careers. These workers already understand important components of the HVAC systems, though they would need to complete more advanced technical training related to HVAC systems. They would, however, see a small decrease in their median hourly wages following the transition.

An HVAC technician career is a good pathway into the energy efficiency industry for elevator and escalator installers and repairers. Since elevator and escalator installers and repairers are already trained in reading blueprints and connecting electrical wiring for elevators and escalators, they could easily learn these parts of the job. Like electricians and plumbers, elevator and escalator installers and repairers would need more specialized, technical training in HVAC systems. Elevator and escalator installers and repairers would see a significant wage decrease following the transition: The median hourly wage for an HVAC technician is roughly $31 less than the median hourly wage for elevator and escalator installers and repairers.

[42] ONET OnLine, Accessed January 2023. https://www.onetonline.org/.

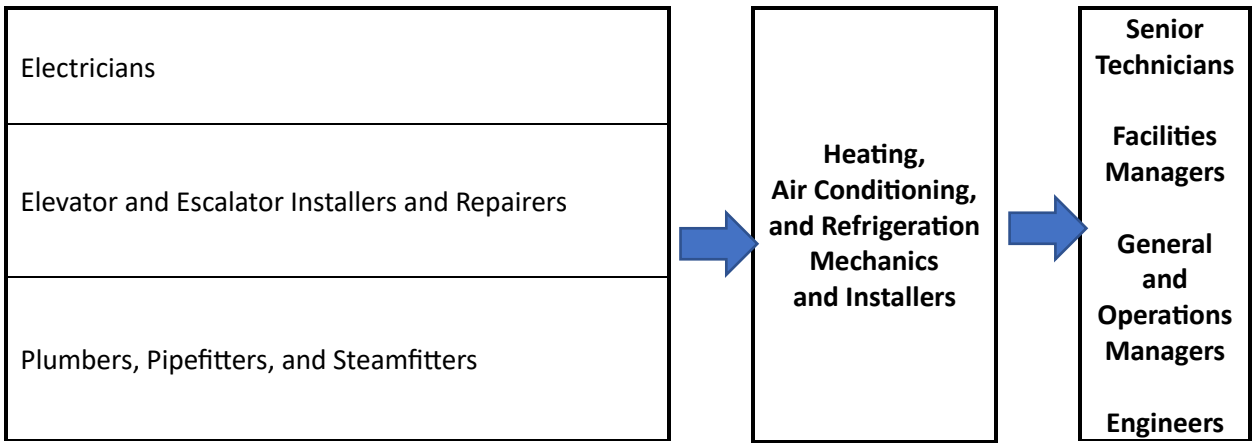
[43] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

Workers looking to transition to an HVAC technician position from any of these occupations would need a postsecondary non-degree award to meet the typical entry-level education requirements.

Table 17. Transferable Occupations[44]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry- Level Education
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	**1,263**	**$30.44**	**Postsecondary non-degree award**
Electricians	2,270	$30.57	High school diploma or equivalent
Elevator and Escalator Installers and Repairers	53	$61.58	High school diploma or equivalent
Plumbers, Pipefitters, and Steamfitters	2,108	$31.30	High school diploma or equivalent

Figure S0. Career Transferability & Progression[45]



[44] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

[45] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

Plumbers, Pipefitters, and Steamfitters

Summary: Plumbers, pipefitters, and steamfitters are all skilled workers in the construction and extraction occupational group. They install and repair the piping systems in buildings and other establishments, though each has additional distinct responsibilities. Plumbers typically work with piping systems for water and gas utilities, while pipefitters and steamfitters specialize in piping systems for chemicals, acids, and gases. Workers are usually in full-time employment and may be called in for emergencies outside their regular hours.

Jobs that could facilitate transition into a plumber, pipefitter, or steamfitter position are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups. Generally, the entry-level, median, and experienced wages for this occupational category are greater than Rhode Island average wages at each level. The typical entry-level education for these workers is a high school diploma or equivalent. They learn their trades in apprenticeships or vocational-technical schools and must pass a licensing exam, or multiple licensing exams depending on the individual's goals. With experience, these workers could become master plumbers or independent contractors in the energy efficiency industry.

JOB DESCRIPTION[46]

Plumbers, pipefitters, and steamfitters install and repair the piping fixtures and systems in homes, businesses, and industrial establishments and any other place where piping and related systems are found. In addition to their specialized work, plumbers, pipefitters, and steamfitters prepare cost estimates for clients, read blueprints and instructional diagrams, and determine which materials and equipment they need for a project. They also need to be aware of and follow local and state building codes.

These workers are often categorized together, but they have some distinct tasks. Plumbers install and repair piping systems for utilities such as water and gas in homes, businesses, and factories. Pipefitters and steamfitters (sometimes referred to as "fitters") install and repair piping systems for chemicals, acids, and gases, and steamfitters specifically work with systems carrying liquids or gases under high pressure. Plumbers and fitters may be employed full-time by schools, colleges, airports, municipalities, or other institutions owning buildings that require ongoing plumbing maintenance, though pipefitters and steamfitters most commonly work in manufacturing, commercial, and industrial spaces, and they may also work in large office buildings and power plants. Generally, plumbers and fitters work full-time regular hours, and they are sometimes called to respond to out-of-hours emergencies.

WAGES

The entry-level, median, and experienced wages for plumbers and fitters in Rhode Island are greater than the statewide averages. Entry-level plumbers, pipefitters, and steamfitters earn over $20 an hour while the average for entry-level workers in the state is just over $15 an hour. Experienced plumbers and fitters may earn more than $40 an hour, compared to the average Rhode Island experienced worker

[46] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed January 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

wage of $39 an hour. The median hourly wage for plumbers and fitters in Rhode Island is just over $30 per hour.

Table 18. Wage Distribution[47]

	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Plumbers, Pipefitters, Steamfitters (Annual)	$42,000	$65,100	$84,200
Plumbers, Pipefitters, Steamfitters (Hourly)	$20.19	$31.30	$40.48

EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[48]

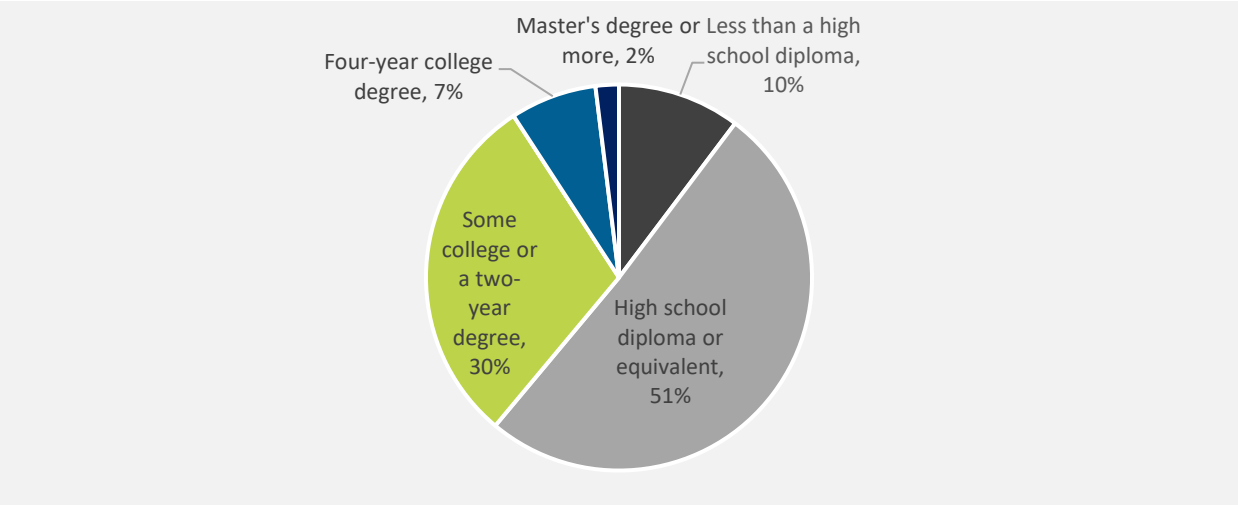
Plumbers and fitters often learn their trade on the job or through an apprenticeship, which typically provides both technical instruction and 2,000 hours of paid, on-the-job training. Vocational-technical training is also offered at some schools. Fitters need to be trained in welding in addition to the design, safety, and tool-use courses typically seen in the piping system curriculum. Applied mathematics, applied physics, and chemistry lessons are typically given to apprentices as well.

Upon completing an apprenticeship and passing a licensing exam, trainees can become journey-level workers. Many states, including Rhode Island,[49] require licensed plumbers and fitters. Fitters are sometimes required to obtain additional licenses to work on gas lines. At the journey level, plumbers and fitters are generally qualified to perform their tasks without oversight, though some localities require workers to gain an additional two to five years of experience after passing the exam before they can work independently. With several years of experience, plumbers may take a more advanced exam to earn master plumber status. In some locations, experienced plumbers can become independent contractors after obtaining additional licenses. Rhode Island requires all contractors and subcontractors involved in building or repairing residential or commercial structures to be registered with the state's Contractors' Registration and Licensing Board.[50]

Of the current pool of plumbers, pipefitters, and steamfitters, ten percent have less than a high school diploma. Just over half, or 51 percent, have a high school diploma or equivalent. Roughly three in ten have some college or a two-year degree, while seven percent have a four-year degree. The remaining two percent of current plumbers, pipefitters, and steamfitters have a master's degree or more.

[47] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[48] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.
[49] New England Institute of Technology, "Learn How to Get Your Plumbing License in Rhode Island," 26 March 2022. https://www.neit.edu/blog/plumbing-license-rhode-island#:~:text=Any%20aspiring%20plumber%20in%20Rhode,solvent%2C%20cement%2C%20and%20caulking.
[50] State of Rhode Island, "FAQs for the contractor," accessed June 2023. https://crb.ri.gov/contractor-registration/faqs

Figure 51. Educational Attainment of Current Workers[51]



Based on 249 active job postings for plumbers in Rhode Island between May 2022 and May 2023,[52] the certifications currently in demand from employers include:

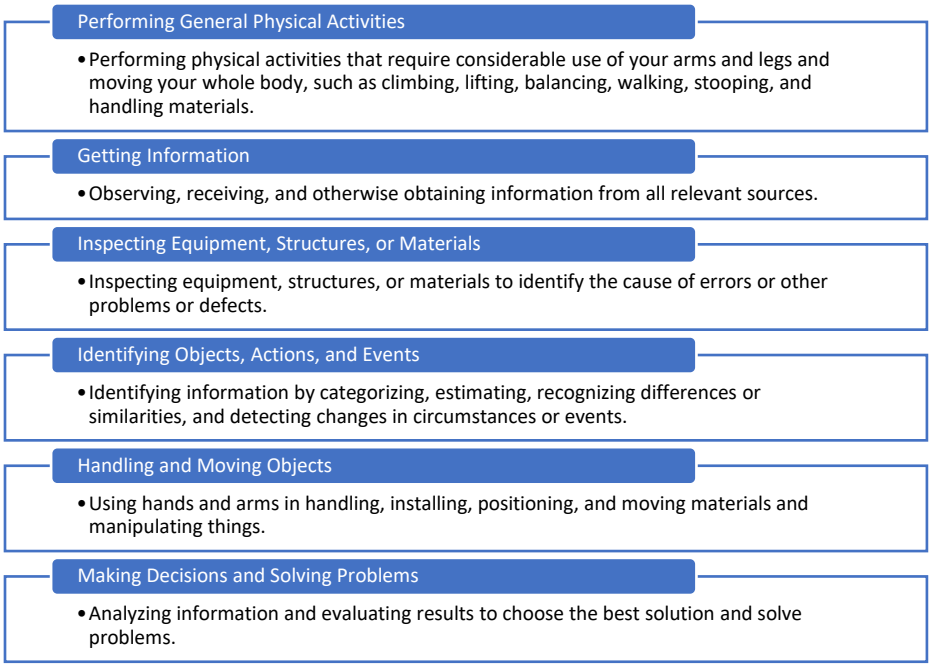
- Commercial Driver's License (CDL)
- Driver's License
- EPA Section 608 Certification (EPA 608)
- EPA Universal Certification
- OSHA 10-hour Safety Training

Plumbers, pipefitters, and steamfitters need to be highly skilled in plumbing and draining systems. The ability to solder and weld pipes is also often necessary to install and conduct maintenance or repairs on piping systems. Physical strength is often required as workers may need to lift or carry heavy piping materials. Plumbers and fitters are most frequently required to be proficient in some of all of the following:[53]

- Ability to Lift 41–50 pounds
- Ability to Lift 51–100 pounds
- Blueprint Reading
- Boilers
- Drainage Systems
- HVAC Systems
- Mechanical Systems
- Plumbing
- Soldering
- Welding

[51] Adapted from JobsEQ occupational profile for the plumber, pipefitter, and steamfitter workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diveristy, accessed May 2023, https://jobseq.eqsuite.com/.
[52] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.
[53] Based on 249 active job postings for plumbers in Rhode Island from 5/7/2022 to 5/7/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

Figure 52. Top Work Activities[54]



CAREER TRANSITION POTENTIAL

This section highlights the occupations that require skills and experience levels similar to plumbers, pipefitters, and steamfitters and could therefore allow for transitioning into a plumber or fitter job with minimal additional preparation. Jobs that could facilitate transition into these positions are found within the building and grounds cleaning and maintenance; construction and extraction; installation, maintenance, and repair; and transportation and material moving occupational groups.[55]

People working in jobs featured in the table below may find plumbing and fitting careers to be good way to transition into the energy efficiency industry. Workers in some of these occupations are trained in working with machines and the equipment used to install or repair them, including the mathematical and critical thinking skills needed to install systems and diagnose and fix problems. The transition into a plumbing or fitting career will also be eased for workers who understand electrical systems; are capable of interpreting blueprints and instructional diagrams; have experience learning and implementing safety measures; or have the skills to design, install, and repair electrical systems.

Boilermakers also have knowledge and skills relevant to fitters owing to their specialization in assembling, installing, maintaining, and repairing large containers holding liquids such as chemicals and oil, and gases. Assembling boilers also provides familiarity with welding.

[54] ONET OnLine, Accessed January 2023. https://www.onetonline.org/

[55] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

Landscaping and groundskeeping workers, stonemasons, electricians, and general maintenance and repair workers may also be suited to these jobs and would all see wage increases following transition into plumbing or fitting. Several of the highlighted occupations would see a drop in wages, however, with electrical power-line installers and repairers faring worst with median hourly wages falling roughly $17.50 per hour.

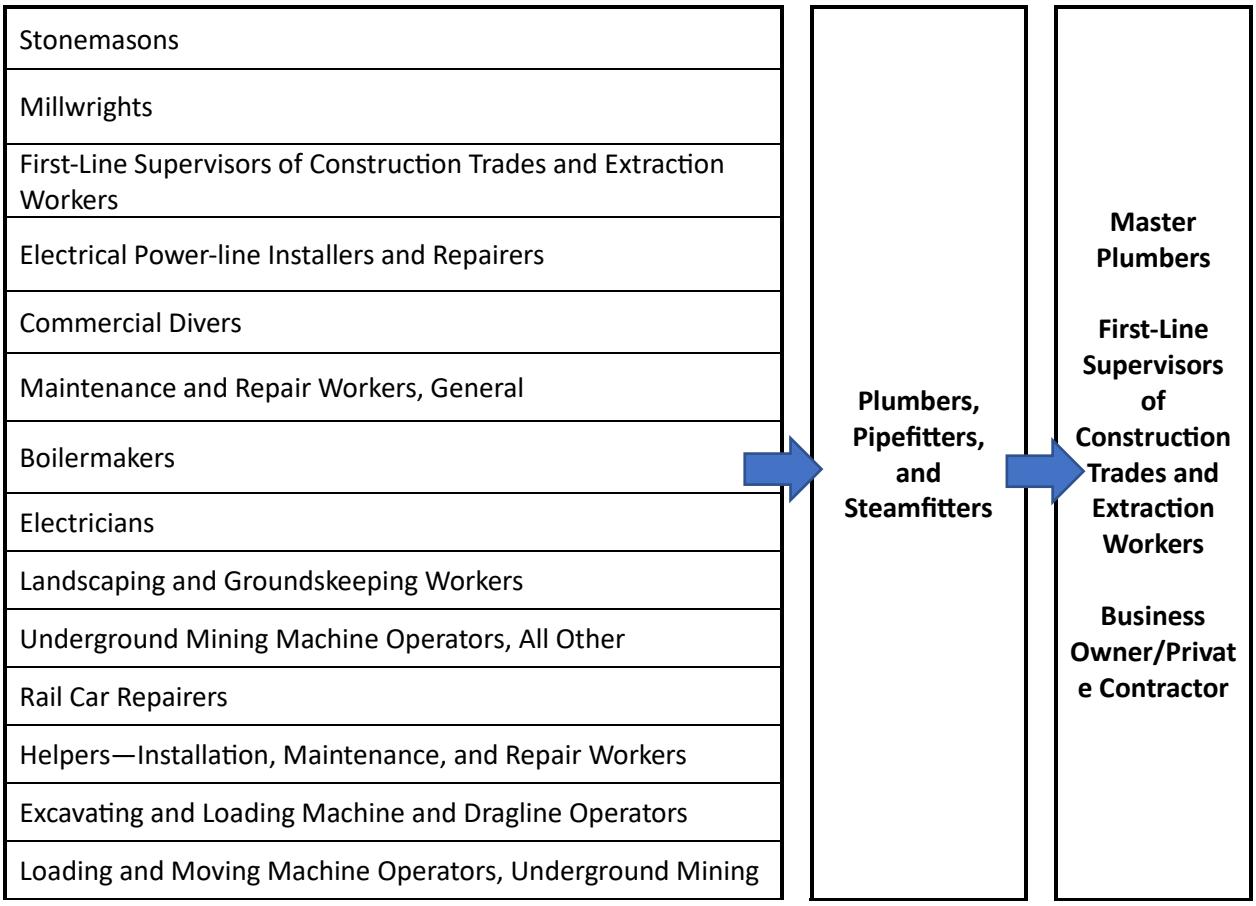
A high school diploma or equivalent is the typical entry-level education requirement for most of the highlighted occupations, which matches the typical requirement for entry-level plumbers and fitters. Landscaping and groundskeeping workers, underground mining machine operators, all other, and underground mining loading and moving machine operators who do not have a high school diploma or equivalent would typically need to acquire this to enter a plumbing or fitting career.

Table 19. Transferable Occupations[56]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry- Level Education
Plumbers, Pipefitters, and Steamfitters	**2,108**	**$31.30**	**HS diploma or equivalent**
Stonemasons	36	$25.78	HS diploma or equivalent
Millwrights	81	$31.70	HS diploma or equivalent
First-Line Supervisors of Construction Trades and Extraction Workers	2,192	$39.75	HS diploma or equivalent
Electrical Power-line Installers and Repairers	191	$48.82	HS diploma or equivalent
Commercial Divers	9	$32.96	Postsecondary non-degree award
Maintenance and Repair Workers, General	4,859	$24.08	HS diploma or equivalent
Boilermakers	48	$36.04	HS diploma or equivalent
Electricians	2,270	$30.57	HS diploma or equivalent
Landscaping and Groundskeeping Workers	4,715	$19.99	None
Underground Mining Machine Operators, All Other	6	$33.09	None
Rail Car Repairers	29	$32.77	HS diploma or equivalent
Helpers—Installation, Maintenance, and Repair Workers	168	$18.86	HS diploma or equivalent
Excavating and Loading Machine and Dragline Operators	79	$29.75	HS diploma or equivalent
Loading and Moving Machine Operators, Underground Mining	2	$31.24	None

[56] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

Figure 53. Career Transferability & Progression[57]



[57] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

Insulation Workers, Floor, Ceiling, and Wall

Summary: Floor, ceiling, and wall insulation workers install and replace the insulation material found in buildings. This work often requires long periods of standing, bending, or kneeling, often in confined spaces. Insulators must know how to use common hand and power tools to remove and install insulation. Installing insulation requires understanding what type and how much insulation material is required for each project; experience with measuring, cutting, and shaping the material to suitably fit; and proficiency in securing insulation in place and protecting it from contact damage and moisture. Insulation workers may need to protect themselves from insulation material particles, which can irritate the eyes, skin, and lungs. Proper insulation helps save energy and reduce noise in buildings.

Jobs that could facilitate transition into a floor, ceiling, and wall insulator position are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups. Entry-level building structure insulators in Rhode Island earn a little more than the statewide average for entry-level positions. There are typically no entry-level educational requirements, as workers usually learn the trade on the job. Insulation workers who remove or handle asbestos need specialized training accredited by the US Environmental Protection Agency. The Rhode Island Department of Health also has training, certification, and licensing requirements for asbestos abatement workers.

JOB DESCRIPTION[58]

In general, insulation workers, or insulators, install and replace insulation material in building structures or mechanical systems. Building structure insulators typically work indoors and install and replace insulation in attics, under floors, and behind walls. They read blueprints, measure and cut the materials to fit into walls and around systems and frameworks in the walls, and take care to secure the insulation and protect it from moisture. Proper insulation helps to save energy and reduce noise in buildings. Insulation workers may also install fire-stopping materials to reduce the risk of fire and smoke spreading throughout the building. They are often employed by drywall and insulation contractors.

Floor, ceiling, and wall insulation workers will find themselves standing, bending, or kneeling for prolonged periods, and they must be able to work in confined spaces. A well-ventilated work environment is helpful for preventing insulation materials from irritating the eyes, skin, and lungs. Workers who remove asbestos require special training due to the associated health risks. Generally, floor, ceiling, and wall insulators work regular hours but may occasionally have work overtime to meet tight construction deadlines.

WAGES

Entry-level floor, ceiling, and wall insulation workers in Rhode Island earn almost $17 an hour, which is a little more than the average entry-level worker in the state. The median hourly wage for building structure insulators is less than the state average by roughly $2 per hour. Experienced insulation workers typically earn a little more than $28 an hour, which is less than the $39-an-hour statewide average for experienced workers.

[58] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed January 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

Table 20. Wage Distribution[59]

	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Insulation Workers, Floor, Ceiling, and Wall (Annual)	$35,000	$45,100	$59,200
Insulation Workers, Floor, Ceiling, and Wall (Hourly)	$16.82	$21.70	$28.46

EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[60]

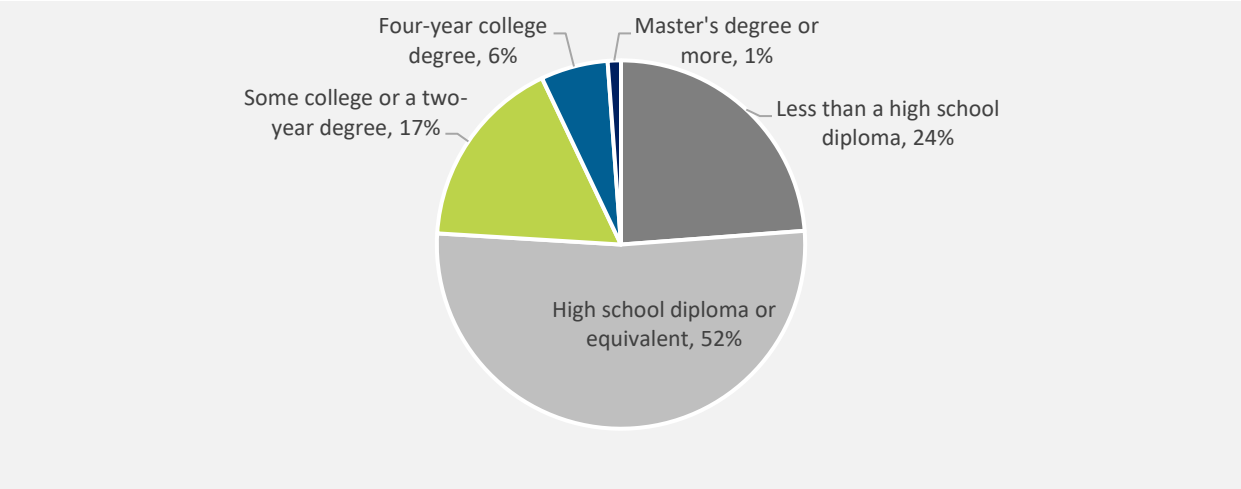
While there are no specific education requirements for building structure insulators, high school mathematics, mechanical drawing, and science courses are helpful. Floor, ceiling, and wall insulation workers often learn the trade in short-term, on-the-job training, working alongside experienced insulators. Eventually, they can remove and dispose of old insulation, read specifications to determine the amount and type of insulation needed, and measure and cut the materials. Learning to secure insulation with stapes, tape, or screws and installing aluminum, sheet metal, or plastic barriers to protect it from contact damage and moisture are also important. Installers of spray foam insulation also learn to use air compressors.

The US Environmental Protection Agency requires all insulation workers who handle asbestos to receive specialized training through programs accredited by the agency. According to the Rhode Island Department of Health asbestos control regulations, asbestos abatement must be done by workers who meet the Rhode Island Department of Health training, certification, and licensing requirements.[61] Insulation workers who do not work with or near asbestos must still use caution, because insulation particles can irritate the eyes, skin, and lungs. They must keep their work area well-ventilated and follow product and employer safety protocols. In addition, they can wear personal protective equipment to protect themselves from irritating materials and hazardous fumes.

Of the current pool of floor, ceiling, and wall insulation workers in Rhode Island, 24 percent have less than a high school diploma. About half have a high school diploma or equivalent. Seventeen percent have some college or a two-year degree, and six percent have a four-year college degree, and fewer than one percent have a master's degree or more.

[59] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[60] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.
[61] 216 RI Code R. § 216-50-15-1 (Asbestos Control), available at https://rules.sos.ri.gov/regulations/part/216-50-15-1.

Figure 54. Educational Attainment of Current Workers[62]



Based on eight active job postings for floor, ceiling, and wall insulation workers in Rhode Island from May 2022 through May 2023,[63] the certification most frequently in demand from employers is a driver's license.

Insulation workers must be skilled at using hand and power tools to remove, measure, cut, and install insulation materials accurately. Since they install insulation in ceilings and walls, they must also be comfortable using ladders and lifting heavy materials and equipment. In general, building structure insulators are most frequently required to be proficient in one or more of the following:[64]

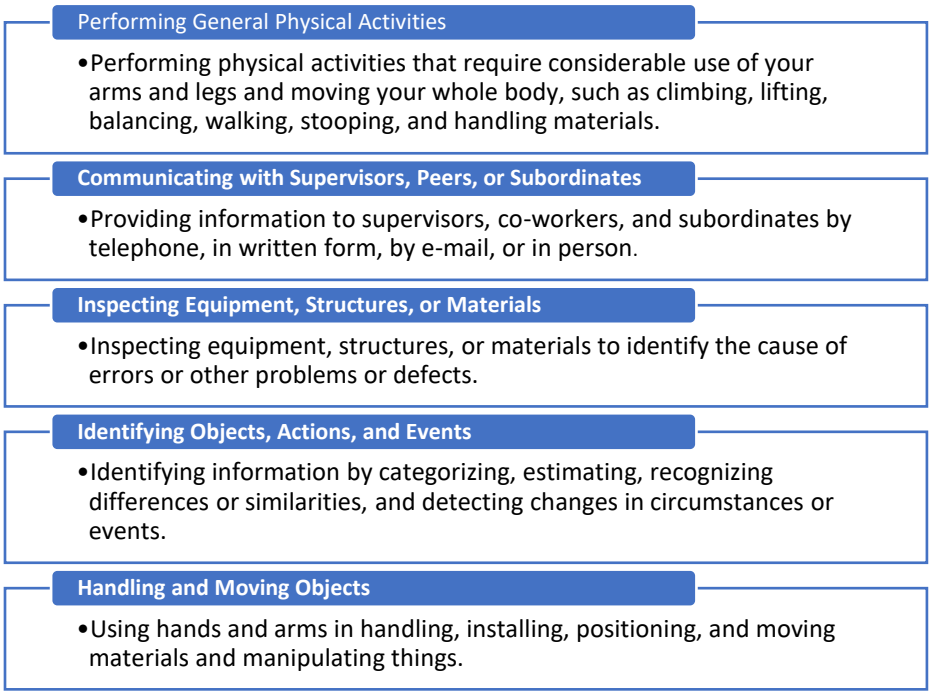
- Ability to Lift 101–150 pounds
- Ability to Lift 31–40 pounds
- Extension Ladders
- Generators
- Spanish

[62] Adapted from JobsEQ occupational profile for the floor, ceiling, and wall insulation workers workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diveristy, accessed May 2023. https://jobseq.eqsuite.com/.

[63] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

[64] Based on eight active job postings for floor, ceiling, and wall insulation workers in Rhode Island from 5/10/2022 to 5/10/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

Figure 55. Top Work Activities[65]



CAREER TRANSITION POTENTIAL

This section highlights the occupations that require skills and experience similar to floor, ceiling, and wall insulation workers and could, therefore, allow for transition into a building structure insulator job with minimal additional preparation. These transferrable occupations are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups.[66]

People working in jobs featured in the table below may find building structure insulation careers to be a good way to transition into the energy efficiency industry. Construction and maintenance painters are familiar with working on walls and ceilings since they apply paint and other materials to these as well as to building machinery, equipment, and other infrastructure. Fence erectors must perform accurate measurements and be proficient in the use of hand and power tools—two skills necessary for floor, ceiling, and wall insulation workers. Riggers, like building structure insulators, must exercise accuracy, safety, and mathematics knowledge in performing their jobs.

All of the occupations highlighted have typical entry-level education requirements that meet or exceed those for floor, ceiling, and wall insulation workers. None of the highlighted occupations would see a wage increase after transitioning to an insulator position. Riggers would see the largest drop, with their median hourly wages falling roughly $7.

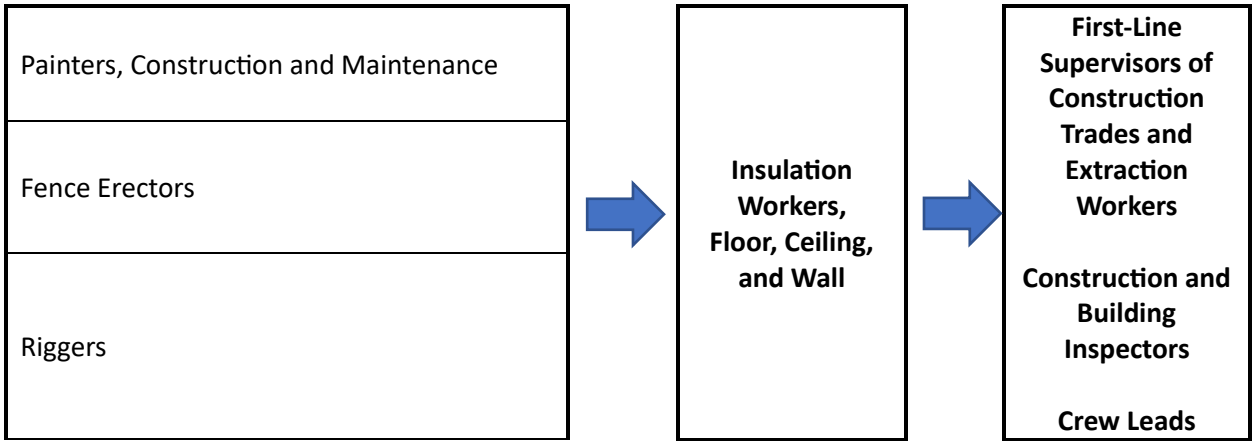
[65] ONET OnLine, Accessed January 2023. https://www.onetonline.org/

[66] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

Table 21. Transferable Occupations[67]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry- Level Education
Insulation Workers, Floor, Ceiling, and Wall	**109**	**$21.70**	**None**
Painters, Construction and Maintenance	1,359	$23.94	None
Fence Erectors	70	$22.31	None
Riggers	128	$29.10	High school diploma or equivalent

Figure 56. Career Transferability & Progression[68]



[67] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

[68] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

General Maintenance and Repair Workers

Summary: General maintenance and repair workers perform maintenance and repairs on machinery, equipment, or structures. They inspect products, diagnose problems, and develop solutions to fix the problems. Maintenance and repair workers may work on a wide range of systems, including electrical and plumbing, though they refer more complicated issues to specialized and licensed tradespeople. They may need to work in uncomfortable positions or environments.

Jobs that could facilitate transition into a general maintenance and repair worker role are largely found within the construction and extraction and the installation, maintenance, and repair occupational groups. Entry-level general maintenance and repair workers earn an hourly wage of a little under $17, which is around $1 an hour more than the statewide average for entry-level workers. The typical entry-level education requirement for this occupation in Rhode Island is a high school diploma or equivalent. Individuals often learn the trade on the job or in technical education programs. Once experienced, they could transition into supervisor positions or specialized tradesperson careers.

JOB DESCRIPTION[69]

General maintenance and repair workers maintain machinery, mechanical equipment, or structures. They perform routine maintenance tasks, assemble machinery or equipment, and fix or replace faulty components or systems, including those related to electrical or plumbing systems. These workers must be good problem solvers, as they often inspect machinery or equipment, diagnose problems, and develop solutions. Though very versatile, general maintenance and repair workers need to be able to identify which issues require a licensed tradesperson, such as an electrician or plumber, to complete specialized maintenance and repairs.

These workers may work indoors or outdoors, depending on their industry and tasks. They often use common hand and power tools to complete their work and may find themselves standing, walking, or reaching for extended periods of time, lifting heavy materials, and working in uncomfortable environments. General maintenance and repair workers typically work 40 hours a week, with occasional overtime when emergency repairs are needed.

WAGES

The entry-level and median hourly wages for general maintenance and repair workers in Rhode Island are slightly greater than statewide averages. The experienced wage for these workers is roughly $10 per hour less than the statewide average for experienced workers.

[69] Job description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook and O*NET OnLine, accessed January 2023. https://www.bls.gov/ooh/. https://www.onetonline.org.

Table 22. Wage Distribution[70]

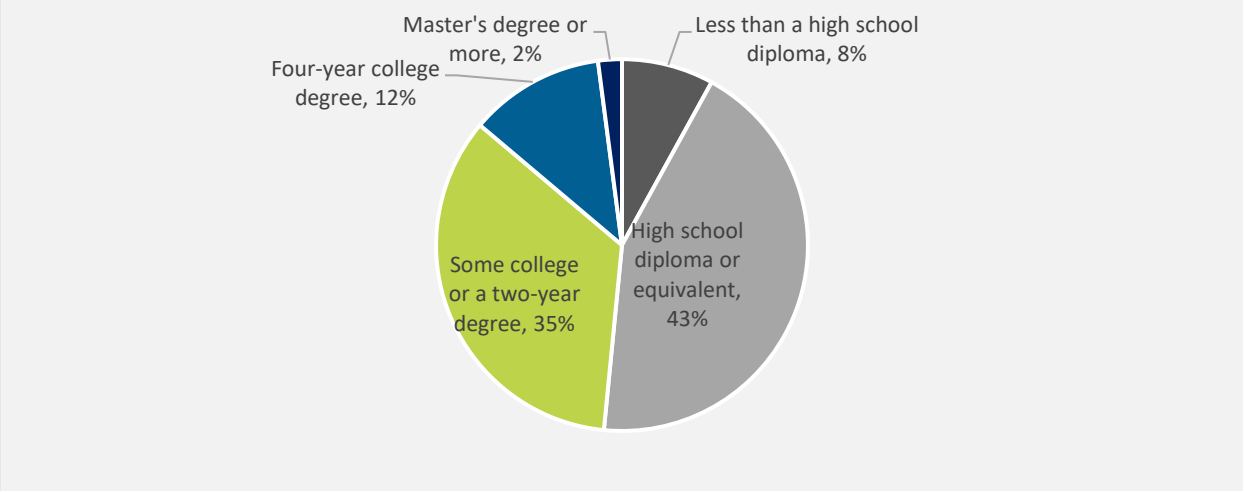
	Entry-Level	Median	Experienced
State Average (Annual)	$31,900	$49,800	$81,300
State Average (Hourly)	$15.33	$23.96	$39.09
Maintenance and Repair Workers, General (Annual)	$34,500	$50,100	$61,200
Maintenance and Repair Workers, General (Hourly)	$16.57	$24.08	$29.42

EDUCATION, EXPERIENCE, SKILL REQUIREMENTS, & CERTIFICATIONS[71]

The typical entry-level education requirement for a general maintenance and repair worker in Rhode Island is a high school diploma or equivalent. These workers often learn the trade while on the job, working alongside experienced colleagues, for a period generally ranging from three months to one year. Some prospective maintenance and repair workers also learn basic skills in mechanics, blueprint reading, and mathematics in high school courses or technical education programs. Over time, these workers learn how to conduct maintenance and repairs on a wide variety of systems, machines, and equipment. Once experienced, general maintenance and repair workers may transition into management positions, become licensed tradespeople in a specialized trade, or start their own businesses.

Of the current pool of general maintenance and repair workers in Rhode Island, eight percent have less than a high school diploma. Just over four in ten have a high school diploma or equivalent, and 35 percent have some college or a two-year college degree. Twelve percent of current workers have a four-year college degree, and two percent have a master's degree or higher.

Figure 57. Educational Attainment of Current Workers[72]



[70] JobsEQ, Occupational Wages from 2022 Q4, accessed May 2023. https://jobseq.eqsuite.com.
[71] Education and Experience description adapted from US Bureau of Labor Statistics Occupational Outlook Handbook, O*NET OnLine, and JobsEQ. https://www.bls.gov/ooh/. https://www.onetonline.org. https://jobseq.eqsuite.com.
[72] Adapted from JobsEQ occupational profile for the electrician workforce as of 2022 Q4 and based on place-of-residence employment estimates. JobsEQ, Occupational Diveristy, accessed May 2023. https://jobseq.eqsuite.com.

Based on 2,418 active job postings for general maintenance and repair workers in Rhode Island from May 2022 through May 2023,[73] certifications currently in demand from employers include:

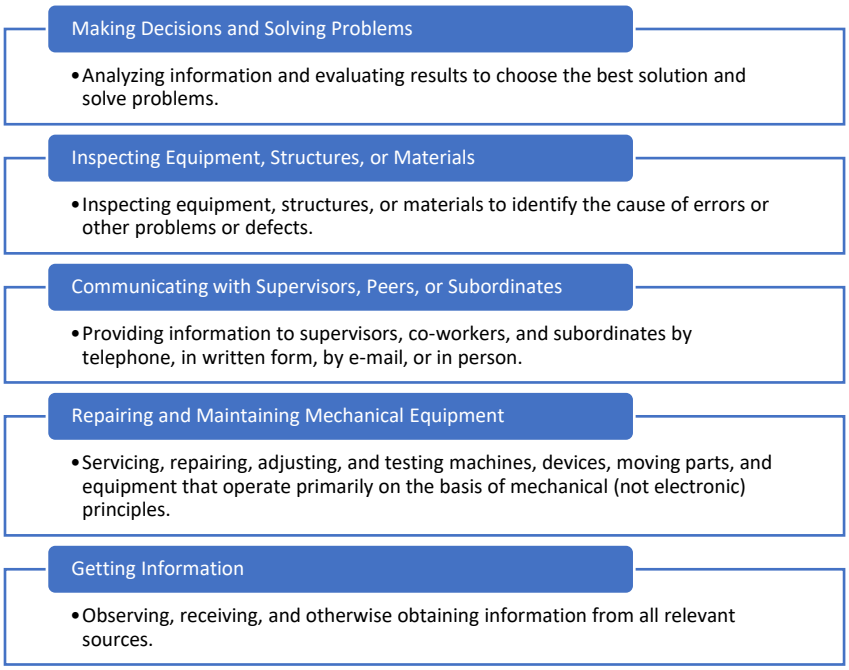
- Certified Maintenance & Reliability Professional (CMRP)
- Class A Commercial Driver's License (CDL-A)
- Class B Commercial Driver's License (CDL-B)
- Commercial Driver's License (CDL)
- Department of Transportation Medical Card
- Driver's License
- EPA Section 608 Certification (EPA 608)
- Forklift Certified
- OSHA 10-hour Safety Training
- Secret Clearance

General maintenance and repair workers often work in buildings, conducting common building maintenance and repair duties. They typically understand electrical, plumbing, and heating, ventilation, and air conditioning systems so that they can perform routine maintenance and common repairs. They must also know how to use various hand and power tools, such as screwdrivers, drills, and hammers, to install and make repairs on equipment, machinery, or other systems. General maintenance and repair workers are most frequently required to be proficient in one or more of the following:[74]

- Ability to Lift 41–50 pounds
- Ability to Lift 51–100 pounds
- Building Maintenance
- HVAC Systems
- Landscaping
- Mechanical Systems
- Microsoft Office
- Plumbing
- Power Tools
- Using Ladders

[73] JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.
[74] Based on 2,418 active job postings for general maintenance and repair workers in Rhode Island from 5/7/2022 to 5/7/2023. JobsEQ, Real Time Intelligence (RTI) Job Postings, accessed May 2023. https://jobseq.eqsuite.com.

Figure 58. Top Work Activities[75]



CAREER TRANSITION POTENTIAL

This section highlights occupations that require skills and experience levels similar to general maintenance and repair workers and could, therefore, allow for transition into a maintenance and repair job with minimal additional preparation. Jobs that could facilitate transition into these positions are found within the construction and extraction and the installation, maintenance, and repair occupational groups.[76]

People working in jobs featured in the table below may find general maintenance and repair careers to be a good way to transition into the energy efficiency industry. These workers have knowledge of certain types of machinery and equipment, as well as general mechanics. Some, including, elevator installers and repairers, also have knowledge of electrical systems. Workers in all of the featured occupations are well positioned to expand their skills and knowledge to other types of machinery, equipment, and systems to meet the requirements of general maintenance and repair roles.

Motorcycle mechanics would see a slight increase in their median hourly wage following transition to a general maintenance and repair position. Workers in other transferable occupations would see a drop in their median hourly wages, with elevator and escalator installers and repairers seeing the largest fall of $37.50 an hour. The entry-level education requirements for all of these occupations meet or exceed the typical entry-level requirement for general maintenance and repair workers.

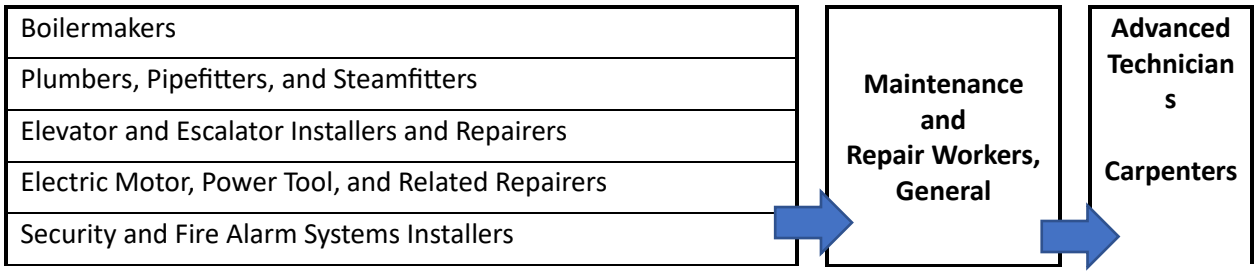
[75] ONET OnLine, Accessed January 2023. https://www.onetonline.org/

[76] Transferable occupations are taken from US Bureau of Labor Statistics, O*NET OnLine, Career Changers Matrix, accessed May 2023. https://www.onetcenter.org/dictionary/20.3/excel/career_changers_matrix.html. Only occupations that are within the top five indices for the most highly related or transferable occupations are included in this analysis.

Table 23. Transferable Occupations[77]

Occupation	Total Jobs in Rhode Island, 2022 Q4	Median Hourly Wage, 2022 Q4	Typical Entry- Level Education
Maintenance and Repair Workers, General	**4,859**	**$24.08**	**High school diploma or equivalent**
Boilermakers	48	$36.04	High school diploma or equivalent
Plumbers, Pipefitters, and Steamfitters	2,108	$31.30	High school diploma or equivalent
Elevator and Escalator Installers and Repairers	53	$61.58	High school diploma or equivalent
Electric Motor, Power Tool, and Related Repairers	47	$25.48	High school diploma or equivalent
Security and Fire Alarm Systems Installers	299	$24.44	High school diploma or equivalent
Motorcycle Mechanics	50	$23.17	Postsecondary non-degree award
Control and Valve Installers and Repairers, Except Mechanical Door	181	$38.51	High school diploma or equivalent
Industrial Machinery Mechanics	930	$29.87	High school diploma or equivalent
Millwrights	81	$31.70	High school diploma or equivalent
Electrical Power-line Installers and Repairers	191	$48.82	High school diploma or equivalent
Signal and Track Switch Repairers	15	$43.38	High school diploma or equivalent
Stationary Engineers and Boiler Operators	118	$31.48	High school diploma or equivalent
Transportation Inspectors	43	$25.72	High school diploma or equivalent

Figure 59. Career Transferability & Progression[78]



[77] Based on place-of-work employment estimates available from JobsEQ, Occupational Snapshot, Occupational Diversity, and Occupational Education and Training Requirements, accessed May 8, 2023. https://jobseq.eqsuite.com/.

[78] Career progression estimates are based on a cumulation of research for this occupation, from all previously cited sources.

Motorcycle Mechanics		**Electricians** **Foremen** **Head Mechanics** **Facilities Managers** **HVAC Technicians**
Control and Valve Installers and Repairers, Except Mechanical Door		
Industrial Machinery Mechanics		
Millwrights		
Electrical Power-line Installers and Repairers		
Signal and Track Switch Repairers		
Stationary Engineers and Boiler Operators		
Transportation Inspectors		

Appendix A: Primary Research Methodology

Rhode Island Energy Efficiency Definition

The state of Rhode Island defines energy efficiency as the following six sub-technologies: advanced building materials and other, efficient lighting, ENERGY STAR appliances, microgrid, storage, and smart grid. While microgrid, storage, and smart grid jobs are typically included in the "transmission, distribution, and storage" or "clean grid and storage" sectors for the DOE employment reports and other clean energy industry reports, they are included in the energy efficiency sector for this report per Rhode Island's clean energy technology definition. In addition, in the DOE reports, microgrid jobs are reported within a category of "microgrid and other," but the microgrid jobs have been split out here. Likewise, job numbers for "Advanced Materials & Insulation" and "Other" energy efficiency jobs are listed separately in the DOE reports, but they are combined into the Advanced Materials and Insulation & Other" category here. In this category, "Other" includes jobs relating to variable speed pumps, other design service, software, energy auditing, rating, monitoring, metering, leak detection, policy or non-profit work, and consulting that cannot be specific to a detailed sub-technology.

Rhode Island Energy Efficiency Employment Data

The employment data in this report is pulled directly from the 2022 Rhode Island Clean Energy Industry Report (CEIR) produced for the Office of Energy Resources (OER) which is from the 2022 United States Energy and Employment Report (USEER) released by the Department of Energy. The 2022 USEER utilizes data from the Bureau of Labor Statistics Quarterly Census of Employment and Wages (BLS QCEW 2020 Q2) and Current Employment Statistics (CES Table B-1), as well as survey data. The survey was designed and implemented by BW Research Partnership. For the past decade, national, state, and local energy-related data collection and analysis efforts have used this survey methodology.

The survey uses a stratified sampling plan based on industry code (North American Industry Classification System or NAICS), establishment size, and geography to determine the proportion of establishments that work with specific energy related technologies, as well as the proportion of workers in such establishments that work with the same. These data are then analyzed and applied to existing public data published by the BLS QCEW, effectively constraining the potential universe of energy establishments and employment.

This report only uses the energy efficiency employment data that is presented in both the 2022 RICEIR and the 2022 USEER. Rhode Island is one of several states that takes publicly available data from USEER and reapportions employment data to match specific definitions across clean energy, including energy efficiency.

Rhode Island Clean Energy Employer Survey

BW Research conducted employer survey interviews with energy efficiency organizations throughout Rhode Island. The survey sample included a compilation of known energy efficiency firms that had

completed surveys for the United States Energy and Employment Report (USEER)[79] in the last three years, email and phone samples compiled from contractor lists provided by RI Energy and RI OER, an online panel (pre-recruited individuals that have agreed to participate in survey research)of potential respondentsthrough a third party of relevant businesses (e.g. firms in construction, engineering, appliance repair), and a sample of firms known to employ the relevant industry codes (NAICS) from DataAxleUSA[80]. Known Rhode Island energy efficiency firms from the USEER survey sample were recontacted as part of the research effort. Samples were de-duplicated before fielding the employer survey and contact information was checked upon completion of data collection to ensure that duplicate responses were removed. The survey instrument was programmed internally by BW Research and each respondent was assigned a unique ID to prevent duplication.

The employer survey was fielded between February 7th and March 24th in 2023 and resulted in 31 total completes by firms, accounting for 95 occupational completes. Respondents were asked a question about whether they employed occupations from a list and then were asked follow up questions about each of the occupations that they employ at their firm. On average, each employer answered questions for 3.1 occupations. The online survey consisted of an initial invite email and seven reminders, which resulted in a 3.6% response rate (sample size = 837). The online panel survey resulted in a response rate of 1.0% (sample size = 488). The average survey duration was 12.2 minutes.

Rhode Island Potential Worker Survey

BW Research conducted a survey of potential energy efficiency workers in Rhode Island. To qualify for the survey, potential respondents had to be residents of Rhode Island between 18 to 64 years of age, and either working or currently looking for employment. An overview of the potential worker survey methodology is found in the table below. Potential worker respondents were recruited for online panels (pre-recruited individuals that have agreed to participate in survey research). The response rate for the online panel survey was 35.7% and the sample size was n=575.

Table 24. Overview of Potential Worker Survey Methodology

Method	Online Survey (Panel)
Universe	852,354[81] Residents 18 Years and Older in Rhode Island
Number of Respondents	205 Potential Workers Completed a Survey
Average Length	5.2 minutes
Field Dates	February 1st through February 4th, 2023
Margin of Error	The *maximum* margin of error for questions answered by all 205 respondents was +/-6.84% (95% level of confidence).

[79] For more information on the US Department of Energy US Energy & Employment Jobs Report (USEER), visit https://www.energy.gov/policy/us-energy-employment-jobs-report-useer.

[80] Relevant NAICS codes include: Plumbing, Heating, and Air Conditioning Contractors (238220) and Electrical Contractors and Other Wiring Installation Contractors (238210).

[81] US Census Bureau, American Community Survey (ACS) 2020 1-year experimental data estimates, accessed 06/02/23. https://www.census.gov/programs-surveys/acs/data/experimental-data/1-year.html.

Rhode Island Current Worker Survey

BW Research conducted a survey of current energy efficiency workers in Rhode Island. Current workers were recruited from an online panel (pre-recruited individuals that have agreed to participate in survey research) from a pool of relevant occupations, including electricians, HVAC technicians, and construction laborers, among others, who worked in Rhode Island. Once in the survey, respondents were further screened by employment status (had to be working) and involvement in energy efficiency work (installation, repair, maintenance, or sales and distribution of goods and/or services related to energy efficiency technologies). The current worker survey was fielded between February 1st and March 15th in 2023 and resulted in 160 completes. The response rate for current workers from panel (pre-recruited individuals that have agreed to participate in survey research) was 8.2% and the sample size was n=1,950 (number of potential respondents in relevant occupations that work in Rhode Island). The average survey duration was 4.4 minutes/

Stakeholder Interviews

Between March and May 2023, the research team conducted 14 interviews with workforce development stakeholders, experts, leaders, and educators across Rhode Island. In doing so, BW Research gathered qualitative data on perceived workforce needs and the challenges of building a strong and dynamic energy efficiency industry.

August 1, 2023

Small Business Program Process Evaluation

Rhode Island Energy

Developed For

Rhode Island Energy
280 Melrose Street
Providence, RI 02907

Developed By

Cadeo Group
107 SE Washington Street, Suite 450
Portland, OR 97214

Contributors

Dulane Moran, Jun Suzuki, and Jaclyn Kahn

Please refer questions to:

Dulane Moran dmoran@cadeogroup.com

Executive Summary

Background and Study Objectives

As part of its 2022 Annual Plan, Rhode Island Energy (RI Energy) identified the Small Business Program (Small Business Program, the program) as a program that would benefit from evaluation support. RI Energy requested that Cadeo Group (the research team) conduct a process evaluation to assess program activities and identify opportunities for program enhancement. RI Energy Program staff informed the overall objectives of this project, which included:

- Assessing how the program operates from customer outreach to installation to final payment through on-bill repayment (OBR).
- Assessing the strengths and weaknesses of the program's delivery.
- Gaining insight into the current and future challenges facing the Small Business Program and the opportunities for overcoming these challenges. These challenges include adapting the program to withstand the decline in low-cost savings from lighting change outs.
- Generating recommendations to improve the overall effectiveness of the Small Business Program.
- Generating recommendations to better engage underserved small businesses, including woman- and minority-owned businesses.

This project was informed by several research activities, including surveys with 106 participating businesses and 139 businesses that had not participated in the 2019-2021 period. The team conducted two focus groups with nonparticipants recruited from those that opted in during the survey and augmented by referrals from RISE. The team also interviewed program staff and program-affiliated contractors and conducted a jurisdictional scan to better understand if or how small business programs are shifting away from a reliance on lighting in other regions.

Conclusions and Recommendations

Conclusion #1. The RI Energy Small Business Program operates effectively and has many features that can support the program as it adapts.

The program is implemented consistent with many established best practices for small commercial program design. The program offers substantial incentives and attractive financing that reduce barriers associated with project costs and a wide range of measures are eligible. The program provides streamlined access and dedicated project managers. Survey responses indicate the program is successfully reaching very small businesses, those consuming less than

50,000 kWh a year. Nonparticipating survey responses and focus group discussions indicate a high level of awareness of RISE, with several noting they had participated in RISE commercial or residential efficiency programs in the past. Responses indicate the long-standing role of RISE in delivering efficiency to Rhode Island has helped increase awareness and trust amongst regional small businesses.

While the program offers a variety of measures, reported energy savings are still primarily associated with lighting upgrades, which may not be a sustainable option for the program as LED products continue to gain market share independent of program intervention. This issue is not unique to RI Energy. The team's jurisdictional scan and associated literature review found that comparable programs across the country are struggling to move small business offerings away from lighting and toward deeper, more expensive measures, like heating, ventilation, and air-conditioning (HVAC) equipment and water heating equipment. This industry-wide trend has resulted in fewer small business turnkey programs, a pivot toward and/or greater emphasis on financing, as well as more focused program delivery that is designed to reach specific communities (tribal, rural, or non-English speaking areas, for example).

Recommendation #1a. Promote the on-bill financing path to encourage wider adoption and overcome first cost barriers. The low interest rate and easy terms will be attractive as other forms of financing remain expensive. Financing measure packages could encourage installation of more expensive but longer-lived equipment.

Recommendation #1b. Use financing to expand access to measures that offer energy savings and other benefits (for example, by including on-site generation from renewable energy, resiliency through storage, enhanced security, or better comfort from window upgrades).

Conclusion #2. RISE staff and RISE-affiliated contractors are successfully delivering the program, but customer directed projects need more attention.

Most participants (70% or more depending on the program year) opt for the turnkey path. These customers expressed a high level of satisfaction with their program experience and rarely noted any specific challenges going through the program process. However, a minority of participants prefer to choose their own contractor and participate through a Customer Directed Option (CDO). Survey results indicate that participants choosing the CDO pathway experienced more challenges, which likely reflects the relative lack of program experience among market contractors compared to their peers working directly with RISE. Survey results indicate that these contractors struggled more with program paperwork and timing issues. The research team recognizes that it is inherently more challenging for RI Energy to track the experience of participants that opted not to use the RISE turnkey program delivery approach.

Recommendation #2. Increase tracking and follow up for CDO projects to ensure the project is on track. RISE is not directly responsible for the installation and associated submittals so this would likely require an automated notification if project timelines exceeded specific thresholds.

CDO participants and their contractors might need extra attention if projects lag or if program processes are not followed.

Conclusion #3. Increased labor costs are affecting the program's ability to retain skilled labor.

Contractors reported that the small margins associated with program projects discourage them from expanding their program-associated work. Tight margins can also reduce their willingness to pursue projects with complicated measures and/or where the business owner requires substantial support. As the program shifts away from straightforward lighting change outs to mechanical, refrigeration, or shell improvements this could become a barrier.

Recommendation #3. Review the labor rates and reimbursement schedule to ensure it reflects recent cost increases.

Conclusion #4. Main Street canvassing approaches can be effective for reducing the cost of serving very small businesses and may help the program engage underserved small businesses (including minority- and women-owned businesses).

Contractor interviews and the jurisdictional scan indicated that Main Street canvassing is an effective strategy for recruiting and ultimately delivering services to multiple small businesses in a specific area, saving time with travel and logistics. Focus group attendees communicated some ambivalence about door-to-door outreach, which they noted can be disruptive. Other utilities have launched augmented Main Street approaches that use electronic communication, social media, and local chambers of commerce to reach businesses in specific areas. This effort provides multiple strategies for engagement and can be paired with specific community-based organizations to facilitate recruitment of underserved communities. Main Street approaches could also help the program develop and leverage relationships with state and local organizations that already have connections to specific communities.

Recommendation #4. Deploy strategies that expand the effectiveness of Main Street outreach efforts. These include advanced notification to community-based or other civic organizations, promoting the schedule several months before the program arrives, and providing specific mailers to qualified businesses with links and call center support in different languages. If deployed, RIE should monitor progress and assess the effectiveness of this overall approach at engaging underserved communities and/or encouraging more comprehensive retrofits.

Conclusion #5. There are opportunities to customize marketing materials for small businesses and further support program contractors in outreach.

Focus group discussions revealed an openness to a range of outreach strategies, from mass market billboards to information customized to different types of businesses. Participants in these discussions reported looking at the program website for pictures and packages that seemed relevant for their business and asked for access to experts they could trust.

In addition, the transition from National Grid to Rhode Island Energy required the revision and updating of program branding and other collateral. Contractors specifically requested badging, uniforms or other overt signals of legitimacy to help their outreach. They also recommended translating program contracting and enrollment documents, noting that the contracts and scope documents are in English, even when there are outreach and marketing materials in other languages.

One suggestion that appealed to contractors and focus group participants included the development of a "technology menu" that would help customers quickly home in on the measures that are most appropriate for their business and identify incentive and financing packages. This approach could be digital or available as a handout and emphasize opportunities to save money and improve thermal comfort through HVAC and weatherization upgrades. This approach could also support the more targeted measure packages focus group participants requested by including special equipment (motors in a garage, laundry or heating elements in a spa, or cooking equipment for restaurants).

Recommendation #5. Expand marketing and collateral tools to support a range of communications and promotion of measure packages.

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This Study

Background

As part of its 2022 Annual Plan, Rhode Island Energy (RI Energy) identified the Small Business Program as a program that would benefit from evaluation support. RI Energy requested that Cadeo Group (the research team, the team) conduct a process evaluation to assess program activities and identify opportunities for program enhancement.

Study Objectives

The process evaluation for the Small Business Program focused on the following objectives:

1 | Assess how the program operates from customer outreach to installation to final payment through on-bill repayment (OBR).
2 | Assess the strengths and weaknesses of the program's delivery.
3 | Gain insight into the current and future challenges facing the Small Business Program and the opportunities for overcoming these challenges. Key challenges include adapting the program to withstand the decline in low-cost savings from lighting change outs.
4 | Generate recommendations to improve the overall effectiveness of the Small Business Program.
5 | Generate recommendations to better engage underserved small businesses, including woman- and minority-owned business enterprises (WMBE).

Methodology and Data Sources

This project included several distinct data collection and analysis tasks, including interviews with program staff and contractors, analysis of program participation data, participant and nonparticipant surveys, nonparticipant focus groups, and a literature review/jurisdictional scan.

Program Staff and Contractor Interviews

To obtain background information and a robust understanding of the program's current activities, Cadeo interviewed three former or current program staff, including contacts at RI Energy and RISE Engineering. Interviews occurred in October 2022 and focused on understanding:

- Key program stakeholder roles
- Program design and implementation
- Program successes
- Potential program improvements

The team also interviewed seven program-affiliated contractors that work directly with the Small Business Program to deliver services at qualified participant sites. These interviews included RISE-affiliated contractors who perform site audits and install program-subsidized measures and market-based contractors hired directly by participants to complete their program-qualified projects. To support these interviews, we developed a guide that included blocks of questions appropriate for both RISE-affiliated and market-based contractors, reflecting the additional role of RISE-affiliated contractors in outreach and energy audits.

RISE provided the team with contact information for nine program contractors, four RISE-affiliated contractors and five independent market-based contractors. Ultimately, we completed interviews with four RISE-affiliated contractors and three market-based contractors.

Program Participation Data Analysis

Cadeo received small business population data from RI Energy and estimated the count of small businesses in each zip code. Cadeo also received a list of small businesses that participated in the program 2019-2022. This list included addresses with zip codes. The team geocoded both lists using a zip code tabulated areas shapefile from Rhode Island GIS, an open-source GIS database.[1] To estimate the participation rate by zip code, we divided the count of participants by the full population (# of participants + # of nonparticipants) per zip code.

Participant Survey

Cadeo developed a participant survey instrument designed to assess the following three research objectives:

1 | Document sources of program awareness.
2 | Assess participant experience and satisfaction with the program.
3 | Identify any challenges with the program participation process.

Cadeo deployed the survey via Qualtrics® between December 1, 2022, and January 6, 2023, to the small businesses that participated in the program between 2019 and 2021 and whose email contact was available (1,032, 79% of participants). We received 106 completed surveys (a response rate of 10%).

Nonparticipant Survey

Cadeo developed a nonparticipant survey instrument designed to be self-administered online in 10 to 15 minutes. It contained three main sections, designed to assess:

1 | Nonparticipants' level of program awareness.

[1] Rhode Island GIS, *Zip Code Tabulated Areas*, May 2021. https://www.rigis.org/datasets/edc::zip-code-tabulation-areas/explore?location=41.401603%2C-71.549072%2C10.32

2 | The level of interest in accessing the services offered by the Small Business Program, including specific measures.

3 | The likelihood for a nonparticipant to participate in the Small Business Program and what barriers to participation exist.

RI Energy provided a program-qualified nonparticipant customer account list. In this list, we identified over 26,000 unique business sites, 5,440 of which (21%) included email contact information. Using this as a sample frame, we distributed the online survey via Qualtrics® to randomly selected nonparticipants in batches offering $50 incentive. 139 of the nonparticipating small businesses completed the survey (4% response rate[2]).

Nonparticipant Focus Groups

Cadeo reached out to nonparticipants of the Small Business Program to conduct focus groups. The team developed the population frame using respondents that had opted in via the nonparticipant survey. The focus group objectives included investigating the experience of women- and minority-owned businesses (WMBE), so we augmented the WMBE opt ins with a WMBE-focused contact list of 42 records provided by RISE.

We conducted two focus groups: one on March 7 and a second on March 9. Both groups contained a mix of WMBE and non-WMBE attendees. Given the heterogeneity of the small business population broadly, the experiences of WMBE focus group participants were not distinguishable from those of the larger group. (Table 1-1).

Table 1-1: Focus Group Disposition

Participant Type	March 7	March 9
WMBE affiliation	3	2
Non-WMBE affiliation	4	3
Total	**7**	**5**

The focus groups' goal was to better understand nonparticipating businesses barriers to participation. In particular, the discussion aimed to understand:

- Why businesses do not take part in utility-provided programs.
- Interest in financing or incentives to offset upgrade costs.
- Equipment, operational, and other concerns.
- Best ways to reach and engage with small businesses.

[2] After subtracting failed emails, bounce-back, additional duplicates, the invitation reached 3,496 business customers.

Literature Review/Jurisdictional Scan

To inform an overarching research question about how other small business programs have approached the transition away from lighting-focused programs, Cadeo identified 10 jurisdictions with programs targeting similar small business populations operating in the United States or Canada (shown in Table 1-2). We reviewed program descriptions for all 10, reviewed evaluations if available (for four of them) and conducted interviews with program representatives from three programs.

The literature review component involved searching publicly available information to obtain a program overview. We sought information on location, eligibility requirements, measures provided, and financing options. Whenever possible, we reviewed prior evaluations to understand the extent to which each program appeared to be shifting away from lighting-focused savings.

The team also reached out to a subset of program contacts for interviews. These interviews primarily focused on confirming programmatic understanding from the literature review, understanding if programs have successfully shifted away from heavy reliance on lighting measures, and learning effective strategies for engaging with underserved small businesses.

Table 1-2: Jurisdictional Scan Sources

Program Sponsor	Location	Level of Detail Obtained		
		Review Program Description	Review Evaluation	Program Staff Interview
Commonwealth Edison	Illinois	✓	✓	
Consolidated Edison	New York	✓	✓	
DTE Energy	Michigan	✓		✓
Energy Trust of Oregon	Oregon	✓		✓
Eversource	Connecticut	✓		✓
Focus on Energy	Wisconsin	✓		
Georgia Power	Georgia	✓	✓	
Northern Indiana Public Service Company (NIPSCO)	Indiana	✓	✓	

Pacific Gas & Electric	California	✓
Tennessee Valley Authority	Tennessee	✓

Program Status

Current Program

The RI Energy Small Business Program is a small commercial retrofit program available to business customers who consume less than one million kilowatt hours (kWh) per year. Nonprofit organizations are eligible to participate and can access slightly higher incentives. To avoid duplicating efforts with other, more targeted programs, K-12 schools, and national and regional grocery stores are ineligible.

The program subsidizes the installation of efficient equipment, covering up to 70% of project costs (applicable to both electric and gas savings). Nonprofits can offset up to 80% of projects costs. The program will consider any cost-effective measure, including custom and prescriptive solutions. LEDs and other lighting measures are the most frequently installed measures, followed by thermostats and hot water saving measures. Other measures include cooler/refrigeration controls; heating, ventilation, and air-conditioning (HVAC) equipment: and mechanical controls.

The program also offers financing through on-bill repayment (OBR), where the remaining total of the installation costs can be financed at 0% interest on the customer's utility bill. OBR financing is available for as many as 60 months (five years).

Participation Pathways

There are two participation pathways for the program: a "turnkey" offering and a customer-direction option (CDO). RISE handles all participation details for the turnkey offering, including a free on-site energy assessment and a customized report detailing recommended energy efficient improvements. If the customer chooses to move forward with a project, RISE also handles installation of selection measures with affiliated contractors. These contractors are RISE staff or subcontractors, allowing RISE to have full ownership of the project. If an issue were to arise post-installation, RISE is the main contact.

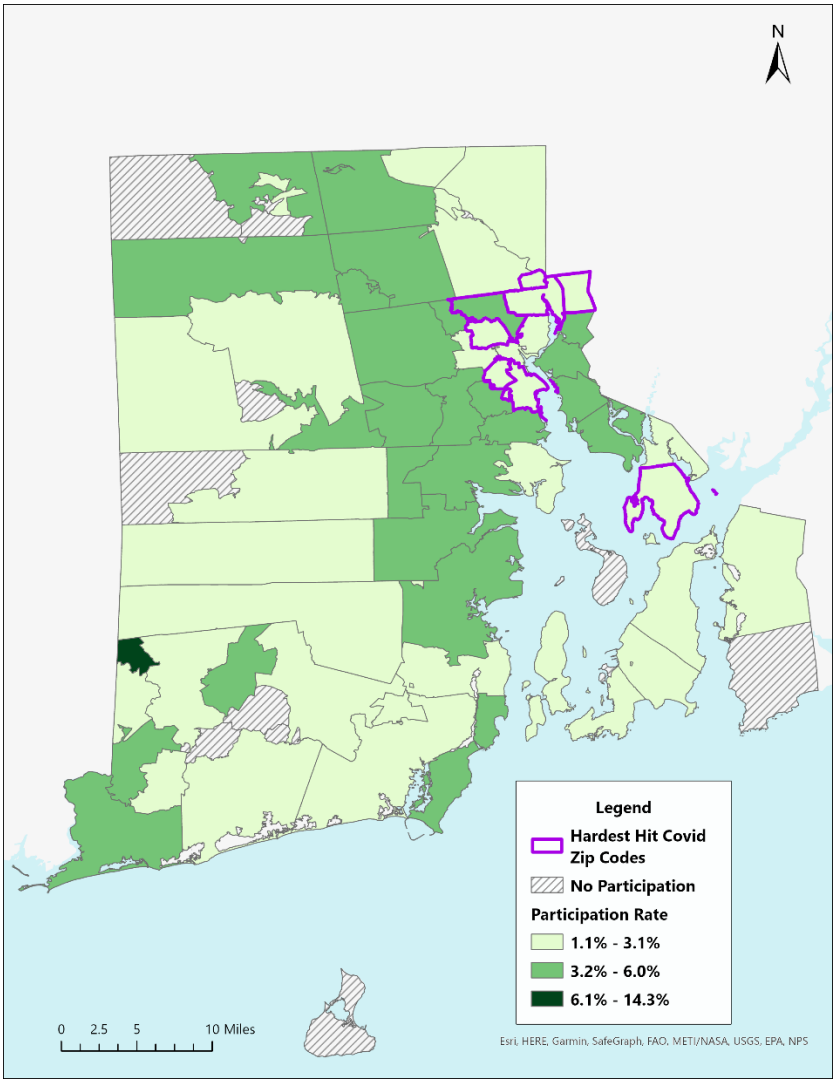
Both RISE and third-party market contractors are involved in the CDO option. The contractor typically notifies RISE of a potential project. RISE then sends an auditor to ensure that the project specifications are accurate and eligible for program participation. Once approved, the contractor executes the work. After completion, RISE sends the auditor again to ensure installed measures are accurate and implemented.

Participation by Zip Code

It its 2022 Efficiency Program Plan, RI Energy identified a set of zip codes known to be hard-hit by the COVID-19 pandemic. To better understand the reach of the program and the extent to which hard-hit COVID zip codes had been served, the team mapped population and participant data (Figure 2-1) overlaying the hard-hit COVID zip code boundaries.

Figure 2-1 displays the small business participation rates at the zip code level in Rhode Island. The areas with parallel line shading are zip codes with no participation in the program. The green areas show the rates of small business participation at the zip code level, ranging from 1.1% to 14.3%. The areas outlined in bright purple are the hardest hit COVID zip codes in Rhode Island. These participation rates reflect only the population that participated 2019-2021, the hard-hit COVID zip codes appear to be served at a similar rate to the rest of the state.

Figure 2-1: Rhode Island Small Business Participation Rates by Zip Code



The eight hard hit COVID zip codes were identified by the Rhode Island Department of Health and documented as a priority in the 2022 Efficiency Program Plan, which noted that these zip codes contain more customers who may be more comfortable discussing services in languages

other than English. The plan was prepared during the second year of the pandemic and likely reflected a desire to prioritize resources for hard-hit communities.[3]

Insights from Staff and Contractors

Interviews with staff and participating contractors focused primarily on understanding how the program was delivered to the market, the successes of the Small Business Program and opportunities to improve or expand the program going forward.

Strengths of the Small Business Program

Interviewed staff and contractors identified several major strengths of the program including:

- **Awareness and familiarity with RISE.** RISE has operated in Rhode Island for over 30 years as a consistent provider of energy efficiency services. According to participating contractors, this long-standing position has resulted in widespread customer awareness of RISE as an implementer and confidence in their services. Several contractors reported they had worked with the Small Business Program for a decade or more.
- **Project cost subsidies.** Staff and contractors view the financial subsidy as a crucial aspect of the program's success in recruiting customers. Respondents noted that the incentive levels were among *"the best in the country, and Rhode Island specifically has one utility—so everyone gets the same incentive."* This simplifies the delivery experience for both contractors and customers. Two of the seven contractors interviewed wanted to see the incentive amount increase.
- **Financing option**. Contractors report that the 0% financing component of the Small Business Program enables small businesses to participate in the program without making an immediate investment. Contractors spoke highly of the financing option, with one contractor noting that "0% financing makes everything a slam dunk."
- **Turnkey service**. Program staff and contractors described the value of offering turnkey implementation for customers, noting that it simplifies the entire process for the program *and* the customer. By facilitating each step of the process from eligibility screening through final installation and quality check, customers can easily track their progress. One contractor noted that "*the turnkey service is great. Customers appreciate they have one point of contact from the initial audit request to the end."*

> *"Having direct access to an incentive that is carried through the program… is very impactful. Then to package that with the financing options, it becomes very competitive."*

Areas for Improvement

Respondents also described several areas where the program could be improved, including:

[3] The Plan referenced this article as the source of hard-hit zip code information. https://covid.ri.gov/press-releases/governor-mckee-ridoh-announce-additional-vaccination-appointments-expanded-efforts

- **Updating program marketing.** The need for program collateral and marketing tools that help communicate legitimacy emerged as a primary concern for contractors, who described the importance of arriving at a business with marketing collateral and credible identification (like a badge or uniform). Marketing collateral also helps contractors communicate the type of equipment or solutions available through the program. The wide range of customers included in the heterogeneous "small business" population means that the most appropriate solutions can vary by business type, existing conditions, and business priorities. Contractors described the potential value of a "technology menu" that would help customers understand the measures available for businesses like theirs—a list organized by equipment type and business type.
- **Increasing Language Options.** Contractors indicated that translated collateral and contracting materials lend legitimacy and could increase uptake among communities that do not speak English. One contractor described the need to overcome lack of trust and saw these materials as one way to do that. Another contractor expressed a need for language assistance in contracting the work, noting, *"We don't do a lot of the actual work in other languages. Even just a [contract] template would be great."* Experience with program collateral varied—those affiliated with RISE were aware that RISE has Spanish translated outreach materials, but other contractors emphasized that engaging native speakers in program outreach would help build trust and clarify the program opportunity.
- **Updating Labor Cost Assumptions.** Several respondents noted that labor costs had steadily risen in recent years, but the program budget for these costs had not increased respectively. As a result, program contacts reported struggling to attract skilled contractors. The competitive market for contractors has encouraged some program contractors to move toward more lucrative jobs outside of the program. Another contractor *described "the labor and installer payment structure forcing us to work in a low-scale, skinny margin type of environment."* With limited pay for program jobs, respondents noted feeling occasionally limited in their ability to complete jobs according to optimal standards.
- **Continuing Focus on Community Engagement.** Contractors noted that community engagement efforts over the past few years have successfully brought in more small businesses. One of the most effective tactics for reaching very small businesses is a Main Street Initiative approach. Contractors described this as a "*blitz/door-to-door engagement in disadvantaged communities*" where contractors can complete an audit and turn it around within a week or so for *"pretty small jobs."* This approach allows contractors to schedule jobs in the same area for the same day, increasing efficiency of their work and reducing the cost associated with serving each customer. As one contractor explained, it can be hard to get labor for very small business projects because it's just not worth the time. Contractors report that Main Street recruitment and project scheduling allows the Small Business Program to engage underreached populations.

Ideas for Expanded Measures

We also sought to understand contractor ideas for additional measures the program could offer, particularly to reduce reliance on savings from lighting measures. Contractors reported that the program as it exists now offers nearly all potential measures, even if they are not commonly selected. Nevertheless, contractors identified several types of measures that could be included or promoted more aggressively. We categorized these measures into three main groups: HVAC, controls, and other measures, as shown in Table 2-1.

Table 2-1: Expanded Measures: Contractor Suggestions

HVAC	Rooftop Unit (RTU) replacement	Opportunity for customers to replace their equipment and electrify. Relatively expensive measure.
	Heat pumps	Encourage heat pump installations by augmenting incentives with funding from other, nonutility funding. Would need to overcome customer concerns about electricity costs.
Controls	HVAC controls	Provide more insight into use and remote HVAC management. Enable demand response or management to avoid peak demand periods.
	Lighting controls	Provide more refined management of lighting loads, including luminaire level. Improve safety, look, and energy management. May require higher incentives or more feature promotion to increase adoption.
Other Measures	Electric vehicle charging	Not currently categorized as an energy savings measure.
	Window replacement	Not typically cost effective on energy savings alone. Consider packaging with other deep retrofit measures to encourage customers.
	Water saving measures	The program currently installs pre-rinse spray valves and pipe wrap. Promote efficient water heating.

Jurisdictional Scan Findings

To understand the extent to which other jurisdictions have successfully shifted their programs away from a dependence on lighting savings, we conducted a simplified jurisdictional review. We began by searching for similar programs operating in the U.S. or Canada. We identified ten programs with descriptive information available sufficient to confirm they were likely similar.

This scanning process itself revealed a few interesting findings. We found numerous jurisdictions did not have standard-offer small business retrofit programs available, and that some of the programs referenced in conference proceedings and previous best practice studies were no longer running. Through this literature review we also reviewed several reports and papers that discussed best practices for reaching small businesses in general and encouraging them to embrace decarbonization overall. This review indicates that the RI Energy program is operating consistently with many established best practices,[4,5] including:

- Offering financing to overcome first cost barriers and encourage comprehensive projects.
- Offering a wide set of eligible measures
- Providing streamlined installation and lighting measures
- Providing dedicated project process management
- Beginning with a free audit or energy assessment
- Providing a simple turn-key program

The literature also revealed an increasing acknowledgement that programs will likely need to expand their efforts to reach the "vast and diverse" population of small businesses. This expansion will require an increased reliance on financing, measure bundling, and tools for packaging funding from multiple sources into a project. It is also likely to require more coordinated outreach that links utility and government funding with partnerships built with community organizations and chambers of commerce. Sources suggest that local case studies showcasing successful projects and collateral translated to reach non-native English speakers are tools that make such partnerships more effective.

Grimes et. al. indicate that programs targeting small businesses need to address the diversity of project and business types in their approach to auditing and measure packages. Specifically, the authors note that analysis tools informing project scopes are often "too complex or too simplified," an interesting dilemma for program planners. According to this paper "simplified tools that show potential cost-effectiveness of energy efficient technology packages are often not specific enough" for individual projects. The spreadsheets and other tools used to identify

[4] Nowak, Seth. Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. ACEEE Report Number U1607. November 2016.
[5] Grimes, K, R. Langer, D. Raggio, C. Blazek. Opportunities to Decarbonize Small Commercial Buildings Leveraging Energy Efficiency. In the Proceedings of ACEEE Summer Study in Buildings. Pacific Grove, California 2022.

recommendations are helpful for identifying opportunity, but often fall short of guiding specific upgrade decisions.

As part of the jurisdictional scan, we searched for recent evaluations for each of the ten identified programs, ultimately reviewing four evaluation reports. We also completed interviews with contacts from an additional three organizations. This process means that different levels of detail are available for the programs reviewed. We provide a summary of findings from this task below.

Program Variation

In reviewing the basic information of the ten scanned programs, we found a range of eligibility requirements, incentive levels, and qualified measures. As the shift away from large-scale lighting retrofit programs has accelerated, there is less evidence of a "standard" small business offering. Reflecting the diversity in operating constraints and concerns, each of the programs we reviewed had different strategies for defining qualified accounts (Table 2-2).

Table 2-2: Small Business Program Eligibility Requirements Across Jurisdictions

Program Sponsor	Eligibility Requirements
Commonwealth Edison	Nonresidential ComEd customers with an electrical peak demand under 200 kW for private businesses and under 400 kW for public facilities.
Consolidated Edison	Available to commercial customers with average peak demand <300kW.
DTE	Available to small business electric customers in the DTE service area with an approximate annual total in energy bills up to $60,000.
Energy Trust	Direct install is available to businesses with 20 of fewer employees, or space 20,000 square feet or less or community service providers (including places of worship). Lighting measures are installed at no cost.
Eversource (CT)	Specific eligibility thresholds not provided.
Focus on Energy	Wisconsin Focus on Energy has integrated incentives into prescriptive and customer standard offer programs, with solutions tailored to different types of business. Specific eligibility thresholds are not provided.
Georgia Power	Available to Georgia Power commercial customers with a 12-month peak demand of 120 kW or less.

NIPSCO	Determined by rate schedule, but participants cannot have had a billing demand of 200 kW or greater in any month during the previous 12 months.
PG&E	At least two years of continuous PG&E service and have a good PG&E payment history over the past 12 months. In addition, a project's estimated energy savings must be sufficient to repay the loan during the payment term, which can be as long as 60 months.
TVA	Local Power Companies identify candidate small businesses in buildings at least 10 years old, less than 20,000 square feet, with no major renovations in prior two years. National accounts excluded. (Participation limited, expect to engage up to 60 small businesses in 2023.)

We also found a mix of implementation strategies, including programs that offered directly installed measures at no or very low cost and others primarily offering access to prescriptive and custom incentives without turnkey solutions customized for small businesses. Some direct install strategies are limited to DIY (do-it-yourself) energy savings kits (containing LED bulbs, faucet aerators or power strips), provided along with free facility assessments and custom project plans. This occurs in ComEd territory and in Michigan, where DTE provides a free assessment paired with free installation of low-cost measures and a site-specific plan to complete recommended upgrades. In Connecticut, Eversource provides a Main Streets Program that coordinates with local towns and chambers of commerce to connect businesses with energy saving upgrades. Main Streets also starts with a free assessment and results in a customized list of recommended measures.

In California, PG&E operates with two paths. The Energy Watch program provides small businesses in specific counties access to direct installation of LED lighting measures and anti-sweat controls for freezers and coolers, while a larger small business effort moved entirely to a financing model.

Measure Variation

While specific measure offerings differ, lighting and lighting controls remain the most common measure across jurisdictions (Table 2-3).

Table 2-3: Measure Distribution

Program Sponsor	Measures Offered					
	Lighting	Refrigeration	Thermo-stats	Insulation	HVAC	Compressed Air
Commonwealth Edison	✓	✓		✓	✓	✓

Program Sponsor	Measures Offered					
	Lighting	Refrigeration	Thermo-stats	Insulation	HVAC	Compressed Air
Consolidated Edison	✓	✓			✓	
DTE Energy	✓	✓			Limited	
Energy Trust of Oregon	✓				✓	
Eversource	✓	Customized post assessment could include recommendations for all non-lighting measures				
Focus on Energy	✓	✓				
Georgia Power	✓					
NIPSCO	✓	✓	✓	✓	Gas	
PG&E*	✓	✓	Non lighting and refrigeration measures are eligible for financing			
TVA**	✓	✓		✓	✓	

**Energy Watch Financing in California provides direct install lighting measures and anti-sweat controls for freezers and coolers. The broader financing program covers a range of measures including food service equipment, water heaters and other upgrades.*

***TVA also supports upgrades to cooking and food service equipment*

Transition from Lighting

We were able to obtain estimates of savings attributable to lighting upgrades for six[6] of the ten programs reviewed. All of these programs indicated that at least 70% of their savings were associated with lighting, even for programs with long lists of eligible measures and a custom path for complex sites. Evaluations indicate a slow uptake of non-lighting measures. At NIPSCO, 0.7% of program kWh savings accrued from non-lighting measures in 2021. At ComEd, 88% of ComEd's installed measures in 2021 were from lighting measures (accounting for 92% of verified net savings).

[6] We obtained results from published evaluations and from program staff interviews. The six sponsors referred to here include ComEd, ConEd, Energy Trust of Oregon, DTE Energy, Georgia Power and Eversource CT.

Energy Trust of Oregon recently adjusted its small business effort to focus on areas where there is still opportunity to obtain energy savings from lighting—rural communities and other communities underserved in previous program years. In 2022, they completed 600 qualified lighting projects with 30 non-lighting measures. This updated effort is engaging local stakeholders and economic districts to support outreach, including Main Street sweeps. In planning for expanding beyond lighting at low cost for small commercial businesses Energy Trust staff report considering:

- Co-funding with federal grants or other external funds to extend the impact of incentives.
- Research focused on small businesses to understand the following: What equipment do they use? When do they decide to replace equipment? How do they decide what equipment to buy?
- Research on measure packages: what equipment can be packaged together attractively for specific types of small businesses?
- Obtaining exceptions to cost effectiveness requirements to encourage heat pumps and other non-lighting upgrades in small businesses.

Contacts at DTE observed that while programs around the country are struggling with cost effectiveness in their small business programs, many sponsors work hard to continue to offer these programs to maintain engagement with these customers. *"There is no silver bullet,"* according to one contact, *"we are working to understand where these savings might come from."* DTE is exploring expanded targets (for example, including greenhouse gas outcomes) and preparing for the direct install component of the program to shrink. DTE is looking for strategies that will provide effective engagement, deliver expanded measures (including controls, refrigeration, or HVAC) and be attractive to the contractor workforce needed to deliver services.

Main Street Model

Eversource's program uses a structured Main Street Initiative that combines local jurisdictional relationships and marketing planning. There is a Main Street Schedule on the website, which lists when they will target a specific area. Prior to this, Eversource sends direct mailers that include a QR code and information on the program offering and how to sign up. Eversource also works with local chambers of commerce or economic development organizations to reach non-English speaking communities. They cobrand outreach materials with these organizations to increase legitimacy. Finally, six weeks after leaving an area, Eversource sends another direct mailer to let businesses know that they can still sign up.

Participant Experience

Key Takeaways

1 | Almost half of the participant respondents heard about the program through direct program outreach (RISE and RI Energy).
2 | Contractors had a small influence on customer decisions to move forward.
3 | Satisfaction with the program's processes and offerings, as well as overall program satisfaction, are high. Participants were less satisfied with the energy savings realized, a perennial challenge for efficiency programs given the number of variables affecting energy bills.
4 | Participants that worked with non-program-affiliated contractors rated several process-related items and the overall program satisfaction significantly lower than those that used program-affiliated contractors. Participants that chose their own contractor were more likely to report they had experienced a challenge than those that used a program-affiliated contractor.
5 | Reflecting their overall satisfaction with the program and measures installed participants indicated the program should promote the program to other businesses like theirs.

Survey Results

The sections below provide detailed results for the participant survey.

Sources of Program Information

The survey began with questions about awareness and sources of information. Participants most commonly heard about the program through direct communication from RISE, which was also the most influential factor in their decision to move forward (Table 3-1). Those who reported hearing about the program through direct communication, either from RISE or RI Energy (n=53), reported that this occurred via email (27 or 51% of those receiving direct communication) or phone (13 or 25%). While the jurisdictional scan and contractor feedback indicated that Main Street outreach is a successful strategy for reaching small businesses, only 5 (or 9% of those reporting direct communication) reported learning of the program via door-to-door outreach. Social media and traditional media (news, magazine, and advertising) did not emerge as important information or influence sources for many participants.

Table 3-1: Sources of Program Awareness and Influence (N=106)

Channel	Source of Awareness (multiple responses allowed)	Most Influential (single response)
Direct communication from RISE	37%	34%
Participation in another program	26%	23%
Word of mouth	25%	19%
Direct communication from utility	15%	12%
A contractor	8%	8%
Social media	3%	2%
News, magazine, ad	0%	0%
Other	1%	1%
Don't know	--	2%

A subsequent question explored the best way to inform participants about new program opportunities. Participants indicated that direct communication from RISE program staff (72% of responses) and RI Energy (47% of responses) were the best ways. These responses were followed somewhat distantly by traditional media (news, magazine) and word of mouth (both at 8%) and social media at 7%.

Motivation

We sought to understand the primary reasons participants decided to participate in the Small Business Program. The survey asked respondents to rate a series of reasons on a 1-to-5 scale where "1" meant "very untrue" for their business and "5" meant "very true." Upgrading old or inefficient equipment and reducing energy costs were the most frequently cited motivations for program participation (Figure 3-1). Forty-eight percent of respondents indicated interest in accessing OBR financing was "somewhat" or "very" true for their business. About a third of the participant respondents (35%) reported they had used the program's OBR plan.

The survey asked participants if there were any other reasons underlying their participation, 49 respondents offered additional reasons, several of which overlapped with the primary categories offered by the survey. The most common response centered on saving energy and money (27 of

49) and obtaining upgrades to their space or equipment (11 of 49). Representative responses included:

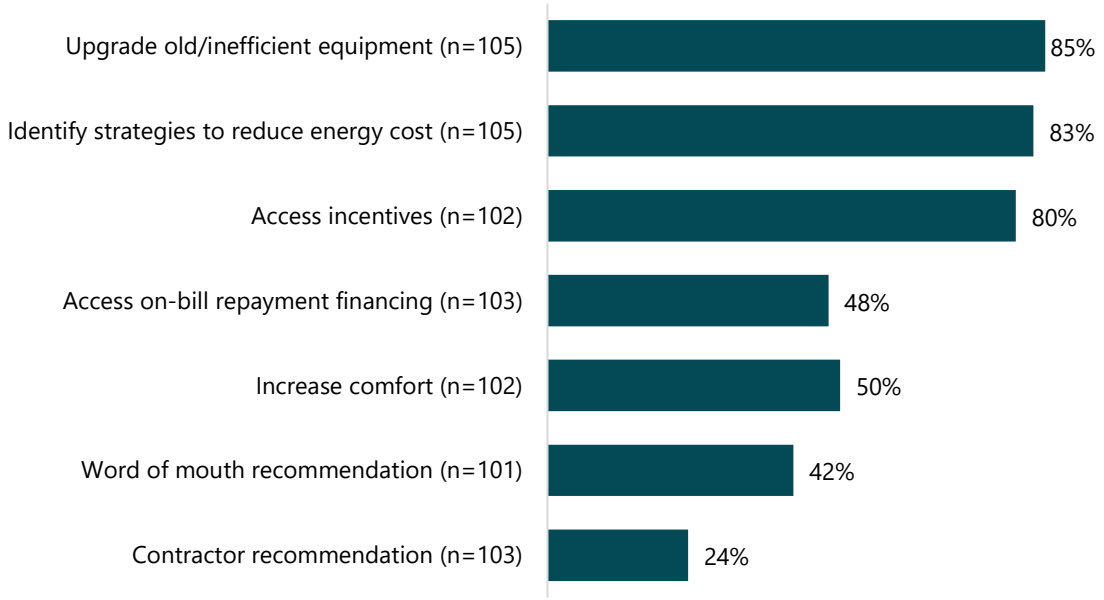
"We wanted to reduce our electric bill and provide more pleasant light for computers."

"The program was easy to implement, affordable, and provided instant and on-going savings."

"A great way to upgrade old inefficient lighting and save money on my monthly electrical bill."

"Our tenants wanted upgrade lighting and reduced electric costs."

Figure 3-1: Primary Motivation to Participate (portion reporting "4" or "5")



Contractor Interactions

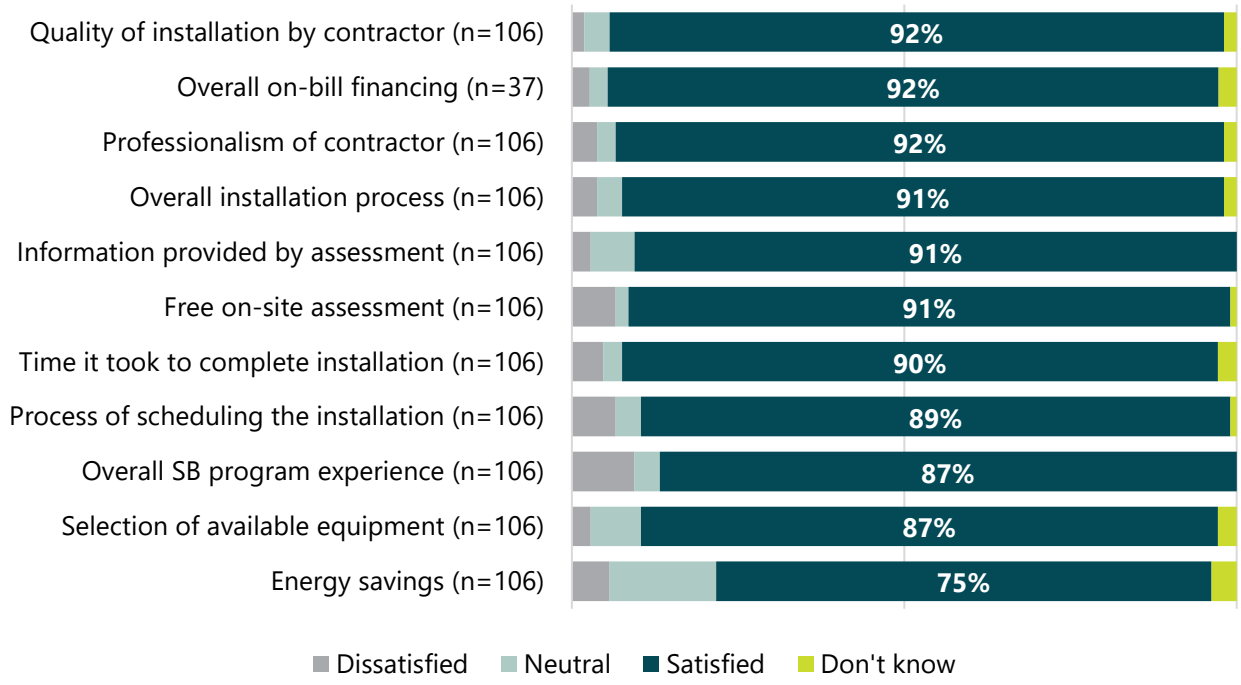
The survey contained a module of questions that explored participant experiences with their contractors. While most of the participant respondents selected a program-affiliated contractor (86%), a small portion (10%) reported they had selected their own (non-program-affiliated) contractor.

Participants that installed LED lighting measures only (52% of survey respondents), were asked if their contractors recommended other equipment. Fourteen (25% of LED only respondents) reported their contractors had recommended other equipment, including lighting controls (5), weatherization (4), HVAC (3), thermostats (2), and refrigeration equipment (2). Those offering a reason for opting not to install the non-LED equipment primarily mentioned issues with cost and timing of installation.

Program Satisfaction

The survey explored overall participant satisfaction, as well as satisfaction with a range of program services. Participants reported a high level of satisfaction with their program experience, with 87% rating the program a "4" or "5" on a five-point scale, where "1" means very dissatisfied and "5" means very satisfied.

Figure 3-2: Participant Satisfaction with Program Elements and Overall



Satisfaction with specific program components and contractors' performance all earned satisfaction scores of approximately 90% or higher, indicating that their overall experience with the program went well. The lowest rated element was energy savings resulting from the program, a perennial challenge for efficiency programs because of the number of variables that can affect energy bills.

Analysis revealed that overall satisfaction and process-related satisfaction ratings among the 10% of respondents (11), those that worked with non-program-affiliated contractors, were consistently lower than those that worked with program-affiliated contractors. Participants using the CDO option rated their satisfaction with their experience significantly lower on free on-site assessment, professionalism of the contractor, time it took for the contractor to complete the installation, scheduling, and overall experience with the program.

Challenges and Program Improvement

About 10% of the participant respondents said they experienced a challenge at some point during their participation. Participants that chose their own contractor (the CDO participants) were more likely to report they had experienced a challenge (3 of 11, or 27%) than those that used a program-affiliated contractor (8 of 88, or 9%). This could reflect a lower familiarity among the market-based contractors with program processes and requirements. Among those reporting a challenge, the most common were delays in project completion (n=3), equipment failure (n=2), and communication issues with program staff and contractor (n=2).

When asked what would help the program improve the experience of businesses like theirs, 42 participants offered thoughts or suggestions. Participants most commonly (12 of 42, 29% of those offering suggestions) indicated the program should offer more measures, including heating and cooling equipment. Representative comments included:

- *"Offer more cost saving equipment besides lights and thermostats. Heating and cooling, water heaters, bathroom sensors, and hand dryers."*
- *"Provide more information on HVAC equipment."*
- *"Given how important windows are to energy conservation, I think it would be beneficial to have a windows financing program."*
- *"Provide more incentive dollars for mini-splits, air conditioning, heat pumps."*

Participants also encouraged the program to expand communication and promote the program to businesses like theirs (10 of 42). In general, these comments included both positive "get the word out" type comments as well as appeals for better communication. Representative comments include:

- *"Just getting the word out that these programs are available? And legit! It almost seems like a scam at first, so I feel some people may shy away."*
- *"Give information about the products that were used so if we need replacements we know where to get them."*
- *"Ensure the customer understands all the benefits of the program upfront and provide support to customers that do not understand the program and its benefits."*

Participant Information and Firmographics

The distribution of measures installed at participant sites reflects the program's focus on lighting, with most participants receiving LED and custom lighting.

Table 3-2: Measures Installed

Measures Installed	Respondent Count	Percent (N=106)
LED	92	87%
Custom Lighting	30	28%

Sensors and control	12	11%
Thermostat	9	8%
Custom parts	4	4%
Other equipment	3	3%

The survey included a sample of respondents from each of the three program years 2019-2021. More recent participants were more likely to respond, which is expected given the decline in engagement expected with distance from installation and the disruptive effects of COVID-19.

Table 3-3: Respondent Distribution by Program Year

Year Participated	Respondent Count	Percent (N=106)	Program Participation Count	Program Participation by Year
2019	24	23%	727	38%
2020	34	32%	593	31%
2021	48	45%	588	31%
Total	**106**	**100%**	**1,908**	**100%**

Survey firmographics indicate the survey reached respondents from a variety of business types and that approximately 19% of participant businesses were located in the hard-hit COVID zip codes.[7]

Table 3-4: Respondent Firmographics

Domain		Respondent Count	Percent (N=106)
County	Providence	65	61%
	Washington	15	14%
	Kent	13	12%
	Newport	7	7%
	Bristol	6	6%
Business Type	Office including health services	27	25%
	Industrial	15	14%
	Educational and religious	14	13%
	Retail, warehouse, other small spaces	11	10%

[7] The eight specific zip codes identified as "hard-hit" included 02860, 02861, 02863, 02904, 02905, 02907, 02908, and 02909.

	Accommodation and food	7	7%
	Other	32	30%
Number of employees at this location	Less than 10	58	55%
	10 or more	41	39%
	Don't know	7	7%
Minority, women, veteran-owned business	Yes, at least one	24	23%
	No	71	67%
	Don't know or refusal	11	10%
Annual kWh	Small-medium (<50,000)	105	99%
	Large (<=50,000)	1	1%

Nonparticipant Perspectives

This section is informed by two data collection activities: a survey of nonparticipating Rhode Island small businesses and two follow-up virtual focus groups.

Key Takeaways

1 | Survey results and focus group discussions revealed a high level of awareness of RISE and associated energy efficiency programs. In more in-depth conversations with focus group attendees, several were previous participants.[8]
2 | Awareness is somewhat lower among WMBEs and those who lease their space.
3 | There is a strong interest in program offerings, with focus group attendees coaching each other on who to call and what to consider installing.
4 | "Small Business" encompasses a substantial variety of business types, with accompanying variation in building and equipment characteristics, which makes it challenging to recommend measures appropriate for all. However, many are interested in improving the thermal performance of their space.
5 | Focus group attendees reported that email outreach is effective, but also described receiving regular calls and emails from solar vendors, credit card processers, and others. These business contacts look for personalized information or communication directly from Rhode Island Energy to ensure the offer is legitimate.

Findings

The nonparticipant survey focused on understanding overall awareness of and interest in participating in a program like RI Energy's Small Business Program and identifying the best strategies for reaching these customers. Focus group discussions followed up on some of the survey results, asking more directly about the attractiveness of program components, the top concerns of business owners, and how they decide to pursue building energy upgrades.

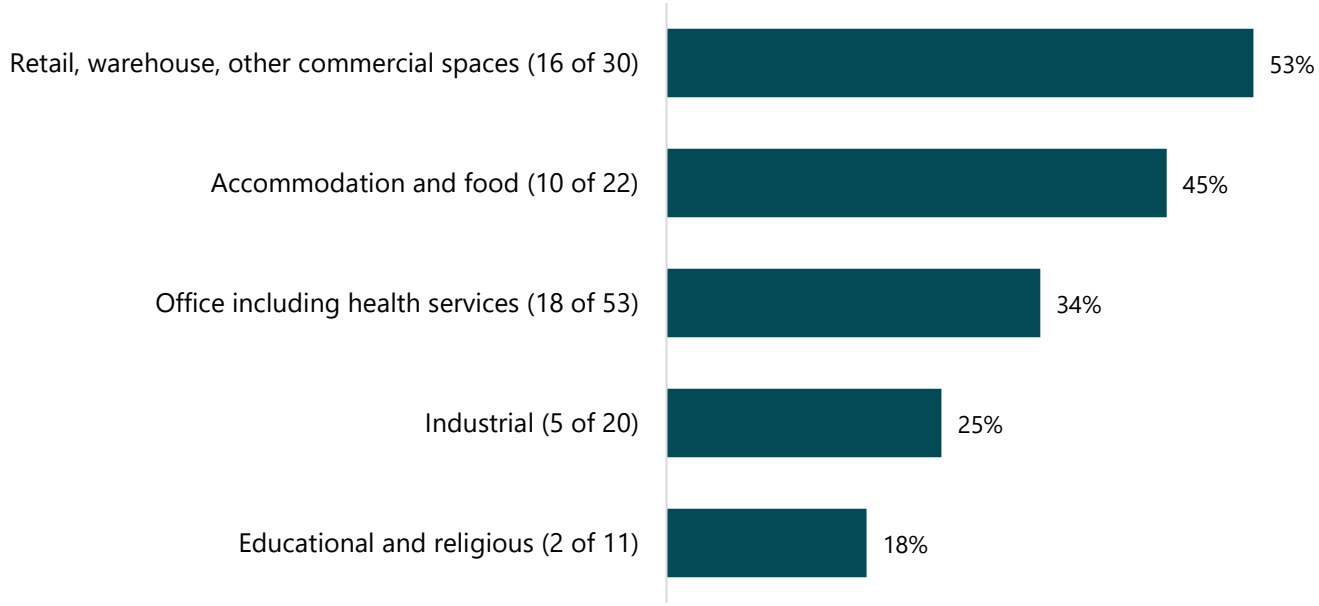
Interest and Intention

Thirty-seven percent of the surveyed nonparticipants (51 of 136) indicated they intended to replace equipment in the next two years (see Figure 4-1). Woman or minority-owned businesses were somewhat more likely to want equipment upgrades (42%); however, this difference is not statistically significant. Respondents from retail, warehouse, and other commercial spaces, and

[8] This effort likely captured a few prior participants because the study was limited to participants in the 2019-2021 program years. Businesses that participated before 2019 could have received a survey invitation. For the focus groups specifically, the team sought to increase the representation of WMBE contacts and conducted additional outreach to RISE-provided WMBE businesses. This could have resulted in inadvertent inclusion of participating businesses.

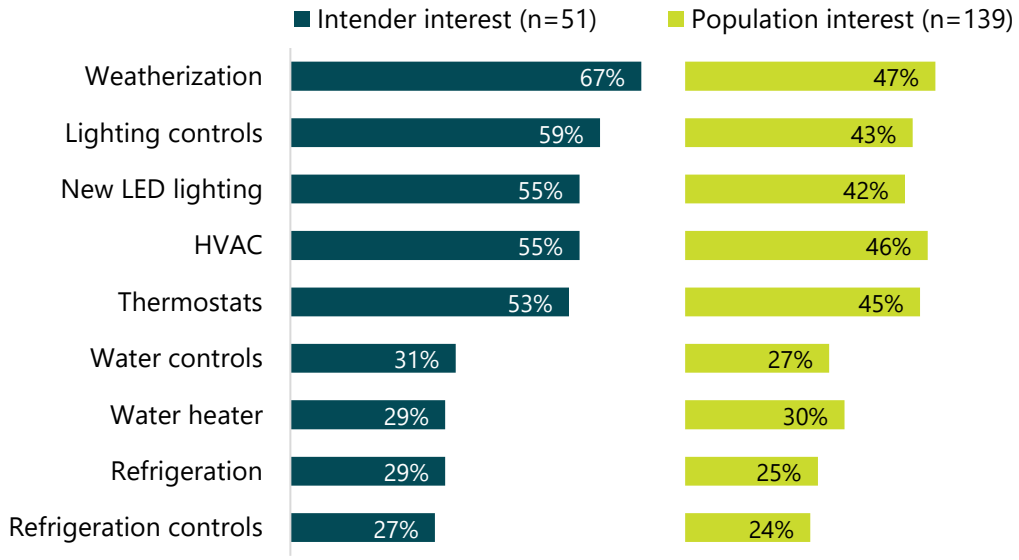
accommodation and food were significantly more likely to indicate an interest in upgrading equipment in the next two years.

Figure 4-1: Reported Upgrade Intention by Business Type (n=51)



After providing a brief explanation of RI Energy's program and the services it provides, the survey asked respondents about their interest in the measures offered through the program. The intenders offered higher levels of interest in all measures (Figure 4-2). Weatherization emerged as the most popular measure across those with intentions to make upgrades and all respondents. Interest in HVAC and thermostat measures was higher among all respondents than lighting measures. When asked about any other equipment they wanted to upgrade or add to their space, "intenders" mentioned solar panels (3), windows and doors (2), refrigeration (2), and a "heat pump-based cooling system" (1).

Figure 4-2: Intender vs. Full Nonparticipant Population: Measure Interest



The focus group discussions identified a high level of interest in heating and cooling, including specific equipment as well as insulation, shell improvements (windows and doors), and smart thermostats. Focus group attendees described their concern about higher energy costs and acknowledged that heating and cooling costs reflected weather, which is largely outside of their control.

Program Awareness and Benefits

The survey provided a brief description of the program and then asked respondents how familiar they were with the program (an "aided" awareness question). We found aided awareness to be quite high, with 66% of respondents indicating they were "somewhat," "moderately," or "extremely" aware. Respondents from MWMBEs reported slightly lower levels of awareness (58% aware), as did those who leased their property (60%)

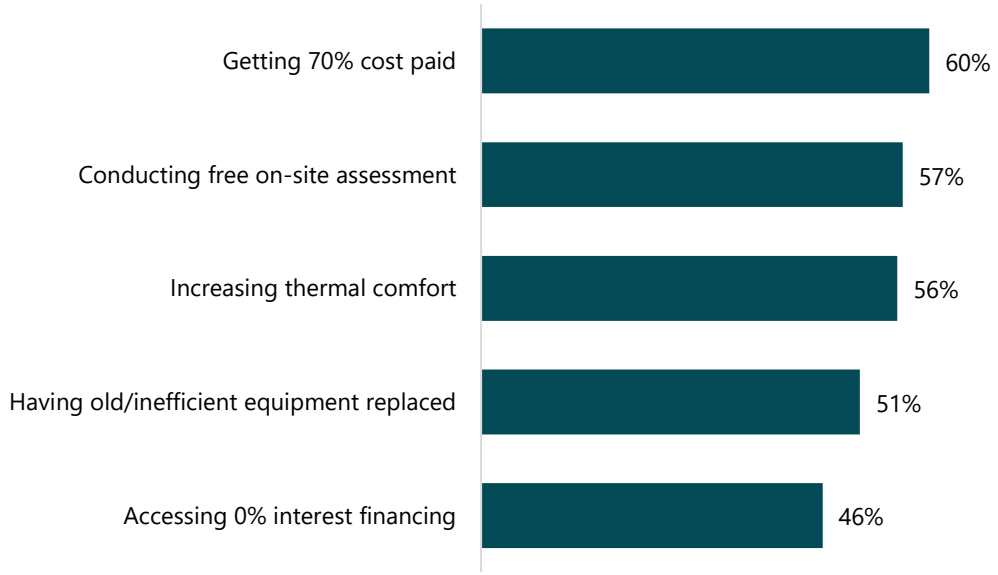
> *I had worked with RISE in my home and had a really good experience and ended up saving a ton of money on electric and gas. So we brought them into the [commercial] building so they replaced all the lighting in our space, all the common areas and outside the building."*
>
> ***- Focus Group Attendee***

In focus group discussions, participants reported being familiar with RISE, with many of them having already participated in a RISE program at home, at a different business location, or in a program year that predated this research.

The survey also provided a list of specific program benefits and asked survey respondents to rate their interest in each using a 1-to-5 scale where "1" is not at all interested and "5" is very interested.

Respondents reported moderate interest in all the program benefits, with access to project subsidies and a free on-site assessment rating highest (Figure 4-3).

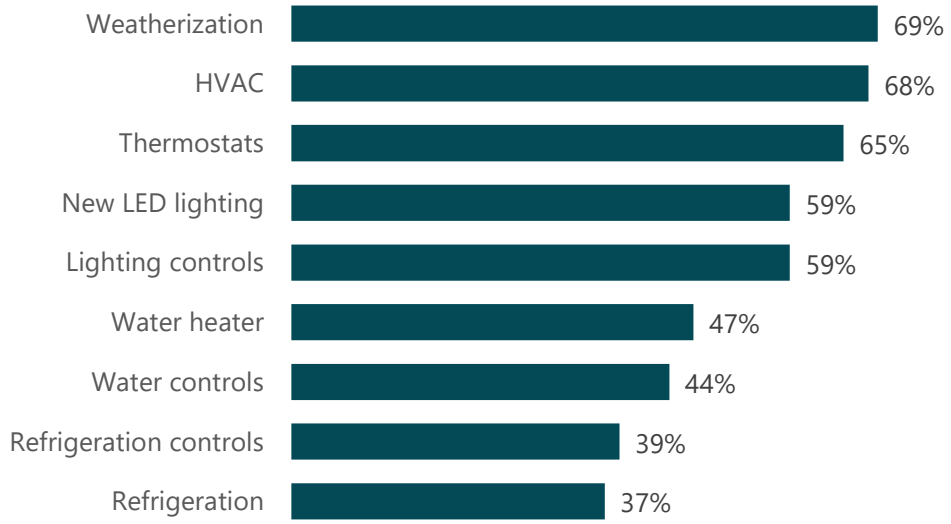
Figure 4-3. Nonparticipant Interest in Various Program Benefits (N=139)



After receiving information about the program, we asked respondents to re-rate their interest in the same set of program-eligible measures. The rated interest in each measure was unchanged after receiving information about program benefits. Forty-two percent of respondents indicated they would be likely to participate in the Small Business Program in the next 12 months, with those in leased space significantly less likely to indicate this intention *(X^2 $p=0.044$)*.

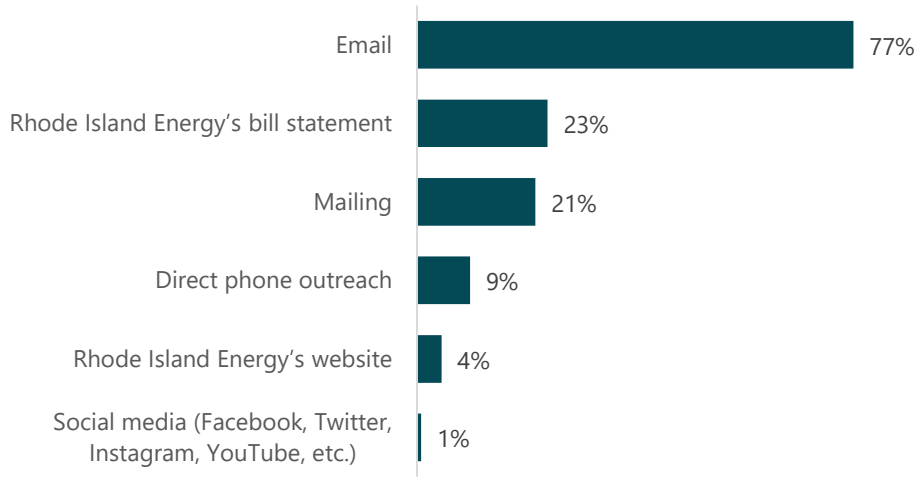
We then analyzed the measure interest of only those that indicated they were likely to participate in the next 12 months. These "likely participants" expressed relatively high interest in all the measures listed, with weatherization and HVAC earning the highest interest (at 69% and 68% respectively) (Figure 4-4).

Figure 4-4: Measure Interest Among "Likely" Participants (N=59)



Nonparticipant survey respondents indicated that email was the best method of contacting them with information on programs (77%) followed by information in RI Energy bill statement (Figure 4-5).

Figure 4-5: Best Contact Method for Providing Program Information (N=139)



Focus group participants expanded on the topic of outreach, noting that while they were all interested in obtaining program benefits, reaching businesses like theirs would likely require a multipronged effort. Most attendees agreed that email was an effective outreach method but also noted that they receive regular calls and emails from solar vendors, credit card processers, and others. According to one business owner, *"If the information is included in the bill, if it's somewhat personalized to our situation, it gives me confidence that it actually is Rhode Island Energy, and it's a legitimate program."*

Focus group discussions also resulted in ideas for how RI Energy could make it easier for businesses to find information. Focus group participants brainstormed together, thinking about how they hear about programs and opportunities. This discussion resulted in several suggestions:

- Billboards
- Direct mail
- Email
- Door-to-door
- A physical or virtual "clearinghouse" where they could search for solutions and get recommendations from experts.

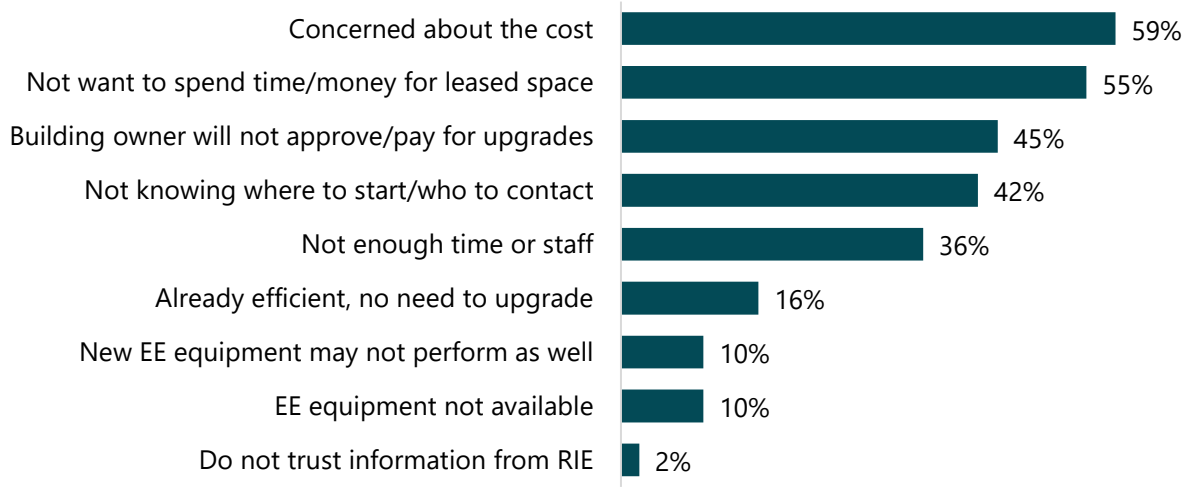
> *The "storefront" doesn't have to be a physical location-you could go online and research it. But it goes through the program or the utility rather than Google. If you Google it, everybody has a different idea, depending on who is sponsoring it. It's not [necessarily] accurate.*

Ultimately, group participants acknowledged that there is no "one size fits all" when it comes to small businesses. What works for one type of business will not necessarily work for another. One group participant noted that when she visited the website it seemed like the information was geared toward bigger businesses than hers, that she did not see the type of equipment she needed. This led to a discussion of customized information.

Participation Barriers

The survey sought to understand the barriers to participating. Focus group participants also discussed barriers. Survey respondents indicated that their primary concern centered on potential costs, even after being provided information on the program subsidy. Owners and those that leased their space reported equal concerns about cost. (Figure 4-6).

Figure 4-6. Barriers to Taking Action (n=92, multiple responses allowed)



We asked contacts about other reasons they might not participate in a program like RI Energy's Small Business Program. These open-ended comments confirmed an overall concern about costs. and constraints associated with leased space. Representative comments included:

- *"Funding is always an issue, and keeping our debt to profit ratio at a certain level is required."*
- *"The landlord would need to agree on upgrades."*
- *"We rented our building until recently when we purchased it in March 2022. I didn't want to spend money on improvemetns like that on a rental. Now we are ready."*
- *"I don't know anyone else who participated in this program."*

In focus group discussions, business owners confirmed monitoring income and expenses – seeking to balance both will also ensuring that employees and customers are comfortable. While the program offsets cost, several attendees were wary of the disruption associated with the work and the need to manage the project internally. These non-financial costs can also create barriers to projects.

Firmographics

The 139 survey respondents represented a variety of business characteristics (Table 4-1). Most respondents represented for-profit organizations (88%). Approximately 16% of nonparticipant business locations were in hard-hit COVID zip codes.[9]

Table 4-1. Respondent Firmographics

Aspect		Count	Percent (N=139)
Ownership	Lease space	65	47%
County	Providence	78	56%
	Washington	18	13%
	Kent	20	14%
	Newport	19	14%
	Bristol	4	3%
Business Type	Office including health services	53	38%
	Industrial	20	14%
	Educational and religious	11	8%
	Retail, warehouse, other small spaces	30	22%
	Accommodation and food	22	16%
	Other	3	2%
	Less than 10	89	66%

[9] The eight specific zip codes identified as "hard-hit" included 02860, 02861, 02863, 02904, 02905, 02907, 02908, and 02909.

Employees at this location	10 or more	46	34%
Minority-owned business	Yes, at least one	45	32%
	No	94	68%
Annual kWh	Small-medium (<50,000)	106	76%
	Large (<=50,000)	33	24%

Conclusions and Recommendations

Conclusion #1. The RI Energy Small Business Program operates effectively and has many features that can support the program as it adapts.

RIE implements this program consistent with many established best practices for small commercial program design. The program offers substantial incentives and attractive financing that reduce barriers associated with project costs and a wide range of measures are eligible. The program provides streamlined access and dedicated project managers. Survey responses indicate the program is successfully reaching very small businesses, those consuming less than 50,000 kWh a year. Nonparticipating survey responses and focus group discussions indicate a high level of awareness of RISE, with several noting they had participated in RISE commercial or residential efficiency programs in the past. Responses indicate the long-standing role of RISE in delivering efficiency to Rhode Island has helped increase awareness and trust amongst regional small businesses.

While the program offers a variety of measures, reported energy savings are still primarily associated with lighting upgrades, which may not be a sustainable option for the program as LED products continue to gain market share independent of program intervention. This issue is not unique to RI Energy. The team's jurisdictional scan and associated literature review found that many comparable programs across the country are struggling to move small business offerings away from lighting and toward deeper, more expensive measures, like heating, ventilation, and air-conditioning (HVAC) equipment and water heating equipment. This industry-wide trend has resulted in fewer small business turnkey programs, a pivot toward and/or greater emphasis on financing, as well as more focused program delivery designed to reach specific communities (tribal, rural, or non-English speaking areas, for example).

Recommendation #1. Promote the on-bill financing path to encourage wider adoption and overcome first cost barriers. The low interest rate and easy terms will likely be attractive as other forms of financing remain expensive. Financing measure packages could encourage installation of more expensive but longer-lived equipment.

Recommendation #1. Use financing to expand access to measures that offer energy savings and other benefits (for example, by including on-site generation from renewable energy, resiliency through storage, enhanced security, or better comfort from window upgrades).

Conclusion #2. RISE staff and RISE-affiliated contractors are successfully delivering the program, but customer-directed projects need more attention.

Most participants (70% or more depending on the program year) opt for the turnkey path. These customers expressed a high level of satisfaction with their program experience and rarely noted any specific challenges going through the program process. However, a minority of participants prefer to choose their own contractor and participate through a Customer Directed Option (CDO). Survey results indicate that participants choosing the CDO pathway experienced

more challenges, which likely reflects the relative lack of program experience among market contractors compared to their peers working directly with RISE. Survey results indicate that these contractors struggled more with program paperwork and timing issues. The research team recognizes that it is inherently more challenging for RI Energy to track the experience of participants that opted not to use the RISE turnkey program delivery approach.

Recommendation #2. Increase tracking and follow up for CDO projects to ensure the project is on track. RISE is not directly responsible for the installation and associated submittals so this would likely require an automated notification if project timelines exceeded specific thresholds. CDO participants and their contractors might need extra attention if projects lag or if program processes are not followed.

Conclusion #3. Increased labor costs are affecting the program's ability to retain skilled labor.

Contractors reported that the small margins associated with program projects discourage them from expanding their program-associated work. Tight margins can also reduce their willingness to pursue projects with complicated measures and/or where the business owner requires substantial support. As the program shifts away from relatively straightforward lighting change outs to mechanical, refrigeration, or shell improvements this could become a barrier.

Recommendation #3. Review the labor rates and reimbursement schedule to ensure it reflects recent cost increases.

Conclusion #4. Main street canvassing approaches can be effective for reducing the cost of serving very small businesses.

Contractor interviews and the jurisdictional scan indicated that Main Street canvassing is an effective strategy for recruiting and ultimately delivering services to multiple small businesses in a specific area, saving time with travel and logistics. Focus group attendees communicated some ambivalence about door-to-door outreach, which they noted can be disruptive. Other utilities have launched augmented Main Street approaches that use electronic communication, social media, and local chambers of commerce to reach businesses in specific areas. This effort provides multiple strategies for engagement and can be paired with specific community-based organizations to facilitate recruitment of underserved communities.

Recommendation #4. Deploy strategies that expand the effectiveness of Main Street outreach efforts. These include advanced notification to community-based or other civic organizations, promoting the schedule several months before the program arrives, and providing specific mailers to qualified businesses with links and call center support in different languages.

Conclusion #5. There are opportunities to customize marketing materials for small businesses and further support program contractors in outreach.

Focus group discussions revealed an openness to a range of outreach strategies, from mass market billboards to information customized to different types of businesses. Participants in

these discussions reported looking at the program website for pictures and packages that seemed relevant for their business and asked for access to experts they could trust.

In addition, the transition from National Grid to Rhode Island Energy required the revision and updating of program branding and other collateral. Contractors specifically requested badging, uniforms, or other overt signals of legitimacy to help their outreach. They also recommended translating program contracting and enrollment documents, noting that the contracts and scope documents are in English, even when there are outreach and marketing materials in other languages.

One suggestion that appealed to contractors and focus group participants included the development of a "technology menu" that would help customers quickly home in on the measures that are most appropriate for their business and identify incentive and financing packages. This approach could be digital or available as a handout and emphasize opportunities to save money and improve thermal comfort through HVAC and weatherization upgrades. This approach could also support the more targeted measure packages focus group participants requested by including special equipment (motors in a garage, laundry, or heating elements in a spa, or cooking equipment for restaurants).

Recommendation #5. Expand marketing and collateral tools to support a range of communications and promotion of measure packages.

Appendix A Data Collection Instruments

Participant Survey

Nonparticipant Survey

Nonparticipant Focus Group Guide

Appendix B Firmographics Comparison

The table below combines firmographic information obtained from surveyed participants and nonparticipants.

Table B-1. Respondents' Firmographics and Measures Installed

		Participants (n=106)		Nonparticipants (n=139)	
		Count	**Percent**	**Count**	**Percent**
Year Participated	2019	24	23%		
	2020	34	32%		
	2021	48	45%		
County	Providence	65	61%	78	56%
	Washington	15	14%	18	13%
	Kent	13	12%	20	14%
	Newport	7	7%	19	14%
	Bristol	6	6%	4	3%
Business Type	Office including health services	27	25%	53	38%
	Industrial	15	14%	20	14%
	Educational and religious	14	13%	11	8%
	Retail, warehouse, other small spaces	11	10%	30	22%
	Accommodation and food	7	7%	22	16%
	Other	32	30%	3	2%
Property Ownership	Own			72	52%
	Lease			65	47%
	Other			2	1%
Annual KWH	Small-medium (<50,000)	105	99%	106	76%
	Large (<=50,000)	1	1%	33	24%
Number of employees at this location	Less than 10	58	55%	89	66%
	10 or more	41	39%	46	34%
	Don't know	7	7%		

Minority, women, veteran-owned business	Yes, at least one	24	23%	45	32%
	No	71	67%	94	68%
	Don't know or refusal	11	10%		

Memo

STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

To: Energy Efficiency and Resource Management Council
From: EERMC Consultant Team
CC: Office of Energy Resources
Date: March 16th, 2023
Subject: Draft 2024 EE Annual Plan, 2024-2026 EE Three-Year Plan, and SRP Plan Priorities

CONSULTANT TEAM

INTRODUCTION

Established in 2006 under amendments to the Rhode Island Energy Resources Act (R.I.G.L. § 42-140.1), a primary function of the Energy Efficiency and Resource Management Council (EERMC or "the Council") is to provide structured stakeholder participation and oversight of energy efficiency procurement. To help support this objective, the EERMC has developed its priorities that are in alignment with its legislated "powers and duties"[1]. The goal of these priorities is to support and guide the planning activities of Rhode Island Energy (RIE or "the Company") and all stakeholders engaged in the development of the 2024 Energy Efficiency (EE) Annual Plan, 2024-2026 EE Three-Year Plan, and 2024-2026 System Reliability Procurement (SRP) Plan. Specifically, the Council's priorities will provide direct input to the Company's EE and SRP Technical Working Groups (TWG) and the many associated stakeholders. The priorities also provide clear direction to the EERMC's Consultant Team to guide their activities in meetings and communications with stakeholders on behalf of the EERMC, and guide their review and input during plan development processes.

The first section of this memo describes EERMC priorities which apply to the both the 2024 Annual Plan and 2024-2026 Three-Year Plan (2024-2026 EE Plans, unless either plan is specifically referenced), where the first four priorities build directly on the Council's priorities for the 2023 Annual Plan. These priorities directed the Company to:

- comply with Least Cost Procurement (LCP) Standards
- incorporate stakeholder input
- ensure an effective and efficient Plan development and review process
- give due consideration to the Act on Climate[2]
- support equity and access in its development of the 2023 EE Plan

The EERMC began development of new priorities for 2024-2026 during its November 2022 Learning, Education, and Development (LEAD) Session and continued to discuss these priorities at its December 15th and January 19th Council meetings. New priorities for 2024-2026 developed so far by the EERMC include:

- setting ambitious 2024-2026 EE Plan savings goals
- increasing participation by underserved customers
- conducting targeted workforce development for small and minority/women-owned businesses

[1] http://webserver.rilin.state.ri.us/Statutes/TITLE42/42-140.1/42-140.1-5.HTM
[2] http://webserver.rilin.state.ri.us/Statutes/TITLE42/42-6.2/INDEX.htm

These priorities represent two important shifts compared to prior EERMC EE Plan priorities developed at the outset of a new three-year planning cycle. First, though supporting equity and access was an existing EERMC priority, this priority area has been expanded and integrated within all other priority areas, several of which also retain a primary focus on equity. Next, the Council's legislated obligations regarding the LCP Standards and Act on Climate have been listed as the first and second priorities to reflect their importance[3].

In addition to defining the overarching priorities listed above, the Council has included a range of specific, detailed strategies to support each priority ('priority strategies'). These priority strategies have been developed in order to ensure that the Council is clear in what it hopes to see during the development of the upcoming Plans. The priority strategies are not intended as a set of strict requirements which must be met for the Council to endorse a Plan; that decision will always remain at the discretion of the Council, and be informed by information and circumstances that will undoubtedly change between the time the priorities are set and the time that the Plans are ultimately subject to a final vote by the Council. The priorities and their associated strategies should be seen as guidance for how the Council believes the Plans can be made stronger in the interest of Rhode Islanders and in consideration of the legislated duties and obligations of the Council. The Council understands and expects that the Company will communicate clearly about whether and why they are (or are not) able to fully address each priority and its associated strategies, and anticipates such information will be taken into consideration during their deliberations regarding each Plan.

EERMC PRIORITIES FOR THE 2024-2026 EE PLANS

Relating to the LCP Standards, the EERMC expects:

- The 2024-2026 EE Plans will comply with the LCP Standards, including any updates to the LCP Standards as may be approved by the PUC,[4] which lay out a clear structure and process for achieving the goals of least cost procurement and define the roles and responsibilities for the different program administration and oversight entities, including clear direction for strategy and planning of annual and three-year plans.
- Given the clear, outcome-oriented direction provided in the LCP Standards, the 2024-2026 EE Plans should clearly indicate how each Standard is applied.

To support compliance with the Act on Climate, the EERMC expects:

- 2024-2026 EE Plan savings goals will be set consistently with the Act on Climate to ensure EE programs contribute an appropriate share of carbon emissions reductions.
    - Establish a clear barometer for EE program contributions to Act on Climate goals that is more rigorous than recent claims related to producing any amount of GHG emissions reductions, by leading coordination with the Executive Climate Change

[3] The EERMC fully supports the Company's compliance with all legislated obligations relevant to energy efficiency and resource management, highlighting these two among their priorities as areas of focus, not to the exclusion of other obligations.

[4] http://rieermc.ri.gov/wp-content/uploads/2020/08/5015-lcpstandards-final_8-25-20.pdf

Coordinating Council (EC4) to determine what constitutes EE program consistency with the Act on Climate and 2025 Climate Strategy.
    - Adjust 2024-2026 Annual Plan goals to align with legislative updates to statewide climate goals in the event that such updates are passed following development of the 2024-2026 Three-Year Plan. This includes, but may not be limited to, the 2025 Climate Strategy[5] being developed by EC4 to achieve net-zero emissions by 2050.
- The Company will reduce investment in fossil fuel heating equipment and increase investment in weatherization.
    - The Company will design incentives and programs to encourage electric options over gas, to ensure the Act on Climate net-zero target is met on or before 2050.
    - The Company will design and implement efforts at scales that attract contractors to EE programs and serve entire neighborhoods simultaneously to mitigate additional natural gas infrastructure development.
    - Design and implementation of these efforts should take into consideration insights and outcomes from the Future of Gas Docket[6] at the PUC.
- The Company will set specific goals for replacing electric resistance heating and hot water equipment with heat pump technologies.
    - Goals set in EE plans should meet or exceed goals associated with RI Energy's Electric Resistance Heating to Heat Pump Plan being developed as a required by the PUC.
    - The Plan should prioritize replacing electric resistance heating in low- and moderate-income households to reduce their energy burdens. Annual targets for replacements should be included in each plan and be reported on a quarterly basis.
    - The Company should market heat pumps to customers considering electric baseboard heating for additions and small renovations.

To ensure stakeholder input is adequately incorporated, the EERMC expects:

- The Priorities indicated by the members of the EE TWG and Equity Working Group will be appropriately reflected throughout the 2024-2026 EE Plans, and that the Company's documentation and response to the proposed Priorities will be presented in a transparent and comprehensive format.
- The Company's proposed customer feedback activities will be sufficiently robust and capture actionable customer-driven input, and it will be appropriately reflected in the 2024-2026 EE Plans, and that the Company's documentation of the activities and their responses to customer input will be presented in a transparent and comprehensive format as a Plan Appendix.
    - As one example of a customer feedback activity the Company should host at least two public comment listening sessions outside of EERMC and EE TWG meetings. These listening sessions should be scheduled such that participation flexibility is provided (e.g., one 12PM listening session and one 6:30PM listening session). In addition, the listening sessions should enable remote access and translation

[5] https://climatechange.ri.gov/act-climate/working-draft-workplan: The 2025 Climate Strategy, required by the 2021 Act on Climate, and will include a plan to incrementally reduce greenhouse gas emissions to net-zero by 2050. The 2025 Climate Strategy is described in the EC4 2022 Update to the 2016 Greenhouse Gas Emissions Reduction Plan

[6] https://ripuc.ri.gov/Docket-22-01-NG

services. The Company should document feedback provided during these listening sessions for inclusion in the 2024-2026 EE Plans.

To support an effective and efficient 2024-2026 EE Plan development and review process, the EERMC expects:

- The *Key Deliverables and Schedule*[7] developed in collaboration by the EERMC Consultant Team, Rhode Island Energy, and OER, and discussed by the EERMC, will be followed by all relevant parties to assure necessary time is afforded to the EERMC and stakeholders reviewing and reaching a clear understanding of the content of the 2024-2026 EE Plans, sufficient to make informed decisions on whether to endorse the Plan.
- The 2024 Annual EE Plan should include key metrics that will be documented and reported to the EERMC and stakeholders at minimum as part of the standard Quarterly Program Performance Reports. Metrics will be identified through a collaborative process between the EERMC, RI Energy, and other stakeholders. Metrics identified through this process will be defined in the Plans and included in Quarterly Reports.

To signal the intent to grow EE programs, the EERMC expects:

- The Company will set ambitious Three-Year and Annual Plan goals for 2024-2026 that meet EERMC-recommended targets or explain any gaps between the goals and targets, and signal to the industry the intent to grow energy efficiency programs and participation.

To increase participation by historically underserved customers, the EERMC expects:

- The Company will work with relevant parties to discuss, vet, and if deemed appropriate, propose a performance incentive mechanism that includes a discrete equity component in the performance incentive mechanism, such as a service quality adjustment tied to equity goals.
- The Company will implement recommendations of the Equity Working Group
- The Company will identify clear and objective determinations of success, and regularly report progress in achieving EWG recommendations and other strategies to increase participation by historically underserved customers.
    - For new metrics:
        - Identify and determine measurement and reporting approach in plan development process
        - Begin tracking and reporting metrics in 2024
        - Set non-binding goals using the metrics and track and report progress against them in 2025
        - Set binding goals and track and report progress against them in 2026
    - For existing metrics:
        - Identify and determine measurement and reporting approach in plan development process
        - Use recent relevant program performance data to inform goals
        - Set binding goals beginning in 2024 and track and report progress against them on a quarterly basis.
- The Company will set ambitious savings goals for Income Eligible Single Family and Multifamily and EnergyWise Multifamily programs

[7] http://rieermc.ri.gov/wp-content/uploads/2023/01/2023-eermc-calendar_2022.01.12-002.pdf

    - This may require a comprehensive reassessment of marketing and outreach approaches, vendor requirements and compensation structure, and program designs and incentive structure, which should be undertaken as much as possible during 2023 to enable implementation of improved approaches starting in 2024
- The Company will increase financial investments in serving historically underserved populations, including enhanced financial incentives to those customers across efficiency offerings
- The Company will identify and implement program improvements that will facilitate ease of participation, including through streamlining of participation steps, documentation requirements, and income verification processes.
- The Company will enhance marketing and outreach to underserved populations
    - Contract a third-party vendor to develop targeted and culturally sensitive messages and methods to communicate program offerings
    - Develop a clearinghouse for all local, state, and federal clean energy program offerings. This will allow customers to access all incentives in a central location, which will be critically important to integrate Inflation Reduction Act funds and existing statewide EE/clean energy program funds. This effort should be a statewide initiative in which RI Energy actively coordinates with other involved parties on behalf of EE stakeholders.
- The Company will develop and implement a targeting framework that focuses on all communities with high proportions of underserved and environmental justice populations and historical participation lower than average statewide participation levels.
    - Assess the feasibility of, and if viable, implement granular geo-targeting for enhanced incentives, such as census tract or neighborhood rather than municipality or zip code to deliver services more directly to high energy burden customers, potentially including assessment of climate vulnerability.
    - Establish baselines for achieved benefits by underserved and environmental justice populations and track progress in achieving increases.
- The Company will enhance and increase municipal and other community-based partnerships, particularly to include partnerships with underserved communities.
    - Increase investment in partnerships with underserved communities. Investment should cover technical support and funding for community/municipal staff to facilitate partnerships. Investment should also cover identification efforts to find organizations that engage with underserved communities.
    - Partnership goals should be developed and tied to increased participation by renters, moderate-income customers, and language-isolated customers. Goals and metrics should be set in collaboration with partners and corroborated by data.
    - Partners should be provided flexibility in their approaches used to engage with their respective community members. This includes allowing partners to provide regular feedback on partnership efforts and customize marketing materials such that they resonate with community members.
    - Enable partnerships to include community-based organizations, cultural organizations, and statewide/regional organizations representing underserved communities.
- The Company will conduct a Nonparticipant Study for small businesses and microbusinesses in 2024.

- The Company will contract a qualified third-party vendor to develop a Language Access Plan (LAP) that sets forth how the Company will provide services to individuals who are non-English speaking or have limited English proficiency at each step of the customer journey
    - Implement LAP, including ensuring all program materials, enrollment forms, contractor support, and field staff communications are available in several of the most common primary languages for English-isolated communities
    - Work with vendor and stakeholders to determine which languages to include
- The Company will target workforce development efforts to serving contractors in underserved communities (detailed recommendations on workforce development covered in separate priority). RI Energy should actively coordinate with state entities to leverage available state/federal funds and workforce development offerings.

To deliver targeted workforce development, the EERMC expects:

- The Company will implement recommendations of the Equity Working Group
- The Company will deliver targeted workforce development for small/minority- and women-owned business enterprise (MWBE) contractors.
    - Develop detailed workforce development plans that target small/MWBE contractors. The Plans should detail the subject matter, locations, languages, and quantity of planned training/upskilling events and workshops, as well as ambitious and increasing target attendance levels.
    - Provide technical support for small/MWBE contractors seeking to participate as energy efficiency program vendors. This should include clear descriptions of program requirements, program operations, and support in completing applications and any other paperwork needed to register or participate in the programs. Technical support should remain available after contractors register and seek to ensure sustained success and program engagement for small/MWBE contractors.
    - Deliver small/MWBE contractor trainings that target underserved communities in Rhode Island. The trainings and other supporting program materials should be available in any non-English languages prevalent in target communities and be supported by program staff fluent in those languages. Technical support should remain available after contractors register and seek to ensure sustained success and program engagement for small/MWBE contractors.
- The Company will deliver workforce development focused on new and important technologies for meeting statewide climate goals, maximizing ratepayer benefits, and controlling ratepayer costs.
    - Expand investment in training for heat pumps, building automation systems, energy auditing, and equipment commissioning for all sectors.
    - Expand training for building operators and commissioning specialists to improve realization rates in commercial, industrial, and large multifamily buildings, thereby increasing claimable energy savings. This will ensure newly installed equipment is appropriately operated and maintained to maximize savings potential.
- The Company will complete a Workforce Needs Assessment in time to incorporate results into the 2024-2026 Three-Year Plan.
    - The results of the Assessment should be used to inform the detailed workforce development plan by indicating which specific measure types, building types, and other areas require additional workers or upskilling for existing workers.

    - The Assessment should investigate the distribution of trained workers across different Rhode Island communities to highlight any geographic shortages that need to be rectified.
    - The Assessment should investigate the distribution of trained workers that speak non-English languages to highlight any potential linguistic barriers to delivering program services.
    - Following the Assessment, continue to track and report on the status of the energy efficiency workforce. This includes tracking and reporting of demographic information, certifications, geographic distribution, non-English language proficiency, and total workers available by type (auditors, HVAC installers, insulation contractors, etc.).
- The Company will increase investment in workforce development to expand training for existing workers, mitigate barriers to entry for new workers, and advertise training/job opportunities for workers.
    - The workforce development plan should include funding for internships and apprenticeships, as well as outreach strategies to attract diverse people into the workforce. This funding should ramp up incrementally during the 2024-2026 period to ensure training and outreach efforts expand to all Rhode Island communities and demographic groups.
    - The workforce development budget should be built from the bottom-up, which will guarantee that all planned expenditures are tied to specific trainings. The budget should cover continuing education for existing workers, certification programs such as the Building Operator Certification, investment in trade school and community college programs, subsidies to cover the salaries of interns and apprentices placed in full-time positions at contractor companies, targeted outreach for workforce diversification diversity, equity, and inclusion (DEI) policy development and training, and reporting of workforce demographics.
    - Quarterly reporting should include workforce development expenditures by category, delivered trainings by language and type, certifications earned, average audit lead times, and qualitative assessments of workforce needs.
    - Develop a clearinghouse for all statewide energy efficiency/clean energy jobs to effectively communicate work opportunities to the public. This effort should be a statewide initiative in which RI Energy actively coordinates with other involved parties on behalf of EE stakeholders.
    - Identify and leverage all state and federal funds available for workforce development initiatives to mitigate financial cost to ratepayers.

EERMC PRIORITIES FOR THE 2024-2026 SRP PLAN

To ensure responsiveness to Council input, the EERMC expects:

- The Company will demonstrate continued responsiveness to Council and other stakeholder input, including during the development of the 2024-2026 SRP Three Year Plan.

To support stakeholder engagement, the EERMC expects:

- The Company will ensure sufficient opportunities for stakeholder engagement and substantive contributions during SRP planning and implementation, including but not limited to SRP Technical Working Group meetings.

To achieve continued methodological development, the EERMC expects:

- The Company will actively pursue further development of benefit cost analysis and assessment of internal EE and DER solutions to grid needs.

To complete Non-Pipes Program design and other 2021-2023 Three-Year Plan commitments, the EERMC expects:

- The Company will ensure Non-Pipes Alternative (NPA) program design is complete within the planned timeline, and ensure that the results of this program design work, and any other learnings from the 2021-2023 3YP, are appropriately incorporated and built upon in 2024-2026 3YP.

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Energy Efficiency Plan Update

September 28, 2023

Thee-Year Plan Updates

- Commit to working toward finding opportunities to align with goals and targets in 2025 and 2026
- EM&V: Code Compliance
  - Will monitor for evaluation in this 3-year cycle
- Added back in multi-family Common Area Lighting
- Revamped Consumer Products Program

2024 Annual Plan Updates

- Revamped Consumer Products Program
  - Moved clothes dryers, dehumidifiers and window AC from downstream to midstream
- Adding back in common area lighting for MF (EnergyWise and Income Eligible)
- Updated projections for LED street lighting (C&I)
- All CAPs will conduct comprehensive audits (Wx and Appliance)
- CHP project from 2023 now in 2024 (Income Eligible Multifamily Project)
- CHP: Method for Greenhouse Gas Calculation
- Commitment to refining equity metrics
  - Will begin metric analysis in 2023
- Small Business Direct Install
  - Will report participants by size (Annual kWh)
  - Main Streets commitment
- Added GHHI budget for EWG

Electric Portfolio Numbers

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Year	Budget, (Δ from 9/7 #s)	Savings (LT MWh), (Δ from 9/7 #s)	Cost of Savings ($/LT kWh)	BCR
2023	*$94,802,700**	*668,715*	*$0.142*	*1.70*
2024	$96,306,200 (-0.4%)	729,294 (-0.6%)	$0.132	1.70
2025	$99,524,700 (-0.6%)	761,976 (-1.3%)	$0.131	1.75
2026	$103,091,000 (-0.9%)	788,783 (-1.8%)	$0.131	1.76

*excluding ConnectedSolutions

All programs show BCR > 1 in all years 2024-2026

Gas Portfolio Numbers

Rhode Island Energy™
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Year	Budget, (Δ from 9/7 #s)	Savings (LT MMBtu), (Δ from 9/7 #s)	Cost of Savings ($/LT Therm)	BCR
2023	$36,931,500	3,537,835	$1.04	2.06
2024	$34,230,100 (-1.8%)	3,302,603 (+0.4%)	$1.04	1.95
2025	$34,921,200 (-1.8%)	3,448,012 (+0.4%)	$1.01	1.95
2026	$35,022,300 (-1.7%)	3,584,964 (+0.4%)	$0.98	1.99

All programs show BCR > 1 in all years 2024-2026

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STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

EERMC FULL COUNCIL DRAFT MEETING MINUTES

Thursday, September 14, 2023

Full Council Meeting | 3:00 - 5:00 PM

Department of Administration Conference Room 2A, Providence, RI 02908 with remote participation via zoom

Members in Attendance: Harry Oakley, Brett Feldman, Kate Grant, Sue AnderBois (departed at 4:10 p.m.), Peter Gill Case, Bob Izzo, Kurt Teichert, Thomas Maggliochetti

Others in Attendance: Sam Ross, Rachel Sholly, Chris Hunter, Michael O'Brien Crayne, Toby Ast, Mark Siegal, Carrie Gill, Emily Koo, Brenden Dagher, Jessica Reno, Spencer Lawrence, Mark Kravatz, Brian Kealona, Rebecca Foster, Steven Chybowski, Danielle Jameson, Sarah Doherty, Karen Bradbury, William Owen, Craig Johnson (virtual), Adrian Caesar (virtual), Nelson DiBiase (virtual), Ann Clarke (virtual), Marion Gold (virtual), Jordan Galluzzo (virtual), Kathryne Cleary (virtual), Kyle Nagel (virtual), Jeremy Newberger (virtual)

1. **Call to Order –**
   Chairperson Oakley called the meeting to order at 3:05 p.m.

2. **Chair Report –**
   Chairperson Oakley delivered the Chair Report, providing an overview of the meeting agenda and noting that during the next meeting on September 28th, the Council will vote on approval of Rhode Island Energy's (RIE) Annual and Three-Year Efficiency Plans. He also reminded Council Members that the first URI PIER lecture sponsored by the Council would be held on September 19th from 6:00 to 7:30 p.m. and that Council members were encouraged to register on the URI Cooperative Extension website and attend or view the live stream, with additional lectures on October 8th and October 18th. Lastly, he provided space for Council Member Grant to announce that she will be resigning her Council position Friday, September 15th as she is leaving her position at RIE and that RIE is working to fill the seat.

3. **Executive Director Report –**
   Mr. Chybowski presented the Executive Director report on behalf of Acting Commissioner Kearns. First, Sarah Doherty introduced herself to the Council and attendees as the new thermal sector lead for the Rhode Island Office of Energy Resources (OER). Next, Mr. Chybowski provided additional programmatic updates noting that Greg Ohadoma from OER

and Chris Gaynor from the Department of Environmental Management will host a Climate Justice Hour on Oct 21st focusing on environmental and climate literacy and that the fall round of the Efficient Buildings Fund, a program offered in partnership with the Rhode Island Infrastructure Bank, is open for applications from municipalities and public entities.

4. **Meeting Minutes –**
Chairperson Oakley motioned to approve the August 17, 2023, Meeting Minutes. Vice Chair Gill Case seconded. Council Members Oakley, Gill Case, Izzo, Teichert, and Maggliochetti voted in favor, none opposed, and Council Member AnderBois abstained.

5. **Council Business (35 minutes, 3:10 – 3:45 p.m.)**

   a. *Branding and Communications Development Updates and Discussion (20 min, 3:10 – 3:30 p.m.)*
   Mr. Hunter of Advocacy Solutions presented on the progress to date toward the Council's branding initiative and next steps, commenting that he believes the effort is 75 percent complete. He presented the rebranding suggestions to the Council in the hope of narrowing down to three potential final options. Once a logo is selected the update would then happen quickly to refresh the website. Chairman Oakley provided some background on the reasons for updating and refreshing the Council's branding which is in part to define the Council's identity as distinctive from OER, and he solicited feedback on the effort at this point in the process. Mr. Hunter presented the recommendation to rebrand the Council as the "Energy Efficiency Council". Council Member Grant noted this was a rebrand akin to a "doing-business-as" appellation, as the Council's official and legal name is set by statute.

   Mr. Hunter then presented the revised mission for the Council and the potential logo redesigns for consideration. Council discussion focused on what the visual elements consisted of, and how to represent the Council's efforts to both create benefits for people as well as the ability to upgrade and enhance buildings and structures within the state. Ms. Sholly noted that the abstract design could be further refined if Members had any alternative suggestions and Mr. Hunter requested that Members share their preferences ahead of the September 28th Council meeting.

   b. *Office of Energy Resources Presentation on Clean Heat RI (15 minutes, 3:30 – 3:45 p.m.)*
   Ms. Jameson of OER presented on the Clean Heat RI (CHRI) heat pump program administered by the State, noting the timeline of program development and the official launch of the program hosted by Governor McKee. Response to the program has been significant with 270 consultations already scheduled at the time of the Council meeting, 18 heat pumps quotes submitted, and 98 applications received. OER will host a launch webinar on September 21st at 6:30 p.m. to answer key questions on the program and heat pumps more generally. Council Member AnderBois asked if the webinar would be recorded, and Ms. Jameson confirmed that it would.

   Next, Ms. Jameson explained the incentives available in the program including the Residential, Income Eligible, and Commercial incentives and application requirements, and noted that low and moderate income (LMI) customers will be able to provide income verification via the website. Council Member Grant asked if

schools would qualify. Mr. Owen noted that OER's Lead by Example program works extensively with schools and had just begun to deploy a new round of funding to help those entities make efficiency and energy upgrades.

Next Ms. Jameson provided the program requirements, noting all Rhode Island residents in all utility territories were eligible, and went through the incentive program requirements for each category. Council Member AnderBois asked what a "ton" meant, and Vice Chair Gill Case noted that it was a measure of cooling power. Council Member Teichert asked if the $25M of funding was steered toward specific program categories. Ms. Jameson noted OER was targeting alignment with the Justice 40 Federal Initiative so that at least 40 percent of the benefits go to households and entities located in Environmental Justice communities. The Council noted interest in hearing from OER in 12 months for an update on program outcomes, specifically in the low and moderate income and environmental justice communities, and Ms. Jameson noted there are marketing and outreach efforts underway to help uptake within those communities.

Ms. Jameson then gave an overview of the heat pump installer resources, what the application portal consisted of, and how errors in the application were noticed to applicants as well as the CHRI team, what the application summary shows to applicants, and how applicants gain their rebates once the work is completed. Applications can be completed by building owners or contractors. Initial feedback from contractors shows enthusiasm for the streamlined nature of the process, and there is a quote comparison tool available for customers as well. Council Member Feldman noted RIE's coordination with OER in the lead up to the program launch and noted work to cross-check needed weatherization upgrades. Mr. Teichert confirmed with Ms. Jameson that installers must do a full Manual J, and asked whether there was a trigger for when weatherization was being recommended.? Council Member Grant inquired about the rationale behind the incentive allocations across the applicant categories, and Ms. Jameson noted that this was to align with the state's utility rebates and create level, per-ton rebates across the state covering roughly 15 percent of the cost. Chairperson Oakley asked whether OER would be willing to present the program details to other organizations and OER is open to those opportunities.

6. Program Oversight (70 Minutes, 3:45 – 4:50 p.m.)

a. *Rhode Island Energy Presentation and Discussion of the Updated Draft of the 2024 and 2024-2026 Energy Efficiency Plans (20 minutes, 3:45 – 4:05)*
Council Member Feldman and Mr. O'Brien Crayne from Rhode Island Energy presented on the 2024 and 2024-2026 Energy Efficiency Program Plans. They briefly commented on RIE's preparations ahead of Hurricane Lee and began with a note on the hundreds of comments received and the hard work and effort of the RIE team in drafting this first Three-Year Plan under Rhode Island Energy. Council Member Feldman also provided an update that Forbes has ranked Rhode Island the second most sustainable state and lowest in energy use. He stated that there are some pending updates on residential incentives, changes in lighting, and reviewed the plan priorities including delivery, advancement of technologies, enabling customer access, equitable access and increasing workforce capacity.

The plan detail overview began on gas incentives, and looked at measure-level cost effectiveness, which removed gas appliances which were not cost effective, including residential HVAC. Council Member Feldman discussed whether multifamily furnaces would need to be continued as an entry point to open discussions with building owners about greater efficiency measures, noting the range of builders and the potential for a future discussion around the Future of Gas docket. Council Member AnderBois commented that Sam Ross of the EERMC's consultant team is serving on the Future of Gas Technical Working Group to conduct the analysis of modeled scenarios.

Next, Council Member Feldman shared the status of the Equity Working Group, adding that the group's efforts had started late, and that the 2024 effort would consist of at least six meetings. Chairperson Oakley asked why six had been chosen to which Council Member Feldman responded should allow for nearly one meeting per month ahead of the September Plan development deadline.

RIE continues to coordinate with OER on Clean Heat RI, RGGI, Inflation Reduction Act (IRA) planning, and with Rewiring America on a RI incentive calculator. RIE is also working with NEEP and ACEEE to understand the appropriate attribution of benefits as federal funding comes to the states, and will look to work with Industrial Access Centers to perform industrial audits through collegiate programs as a workforce development opportunity, if the grant applications are funded . RIE is pursuing a C&I Weatherization Demo as an opportunity to expand commercial weatherization to new types of buildings and customer types, new efforts to engage community organizations to provide funding directly to access landlord and community networks, and multifamily financing with Block Power to build up utility promotion and enhance multifamily access to pre-weatherization and efficiency upgrades beyond what Heat Loans can currently offer. RIE continues to refine data review, IRA funding resources to address pre-weatherization barriers, outside funding sources, and cost-effective paths to overcome constraints. The State's adoption of the 2024 IECC will require additional code trainers, setting up reimbursement programs for trainers, hosting full day workshops and online learning tools, and increased coordination with the HERS training center.

Mr. O'Brien Crayne presented the Plan's portfolio numbers. The EE plan fund balance from the portfolio is down from the 2023 year, but as a result there is an attendant increase in the system benefit charge, and the revised Least-Cost Procurement (LCP) standards require additional reporting which will be reflected within the 2024 plan. Chairperson Oakley commented that IRA and additional federal funding sources should be additive to RIE's programming, and Council Member Feldman confirmed that it is intended to be supplement, not supplant. Chairperson Oakley also expressed concern over the timing of the equity facets of the plan coming after the Council's vote and the need to see a robust equity plan at the next meeting. Council Member Feldman noted that they would try to provide updates from the equity working group ahead of that meeting. Council Member Teichert questioned whether the Three-Year Plan and projected plan savings were reflective of the IRA and outside funding in energy savings, and Council Member Feldman replied that was not expected to have a significant impact in 2024, but should be reflected in both the 2025 and 2026 plans.

b. *Consultant Team Presentation and Discussion of the Updated Draft of the 2024 and 2024-2026 Energy Efficiency Program Plans (20 minutes, 4:00 – 4:20)*
Mr. Ross from the Council's Consultant Team presented their high-level takeaways on the updated draft of the 2024 and 2024-2026 Energy Efficiency Program Plans. He noted the Council's appreciation that the second draft was significantly expanded and that RIE had provided additional responses to some questions right before the meeting. Mr. Ross raised that expectations were not met with the proposed decrease in spending levels when the need for action considering the Act on Climate suggested additional spending needed, addressing the momentum from the IRA, and that there remained room for growth and acceleration within EE planning. Mr. Ross noted a potential need to further discuss the idea of an equity Performance Incentive Mechanism. He also commented that RIE's pilot program to engage landlord's is welcome, but does not align with the scope or urgency of the State's climate goals.

Finally, Mr. Ross laid out the priority for the second September Council meeting where the Council will need to vote on the plan, and the context for the Council's obligations. A summary of the Council's vote options was outlined, and Chairperson Oakley asked how Members should raise questions and feedback, which Mr. Ross said should either be directed to RIE directly or to the Consultant Team.

c. *Council Discussion on Program Oversight (30 minutes, 4:20 – 4:50)*
Council discussion began focused on the efficiency targets and the EE Plan budget. Mr. Feldman noted that the EERMC's EE targets had not been formally approved which Mr. Ross confirmed, noting the PUC could take up the filing at their discretion. Council Member Feldman raised how associated costs were or were not reflected in the targets and Mr. Ross explained that potential studies assume a 100 percent cost incentive, but that actual costs are due to plan design and execution, not necessarily the incentive levels and the targets show additional room to increase plan spending.

Vice Chair Gill Case commented on the pressure between respecting the effort of RIE in assuming the planning effort and producing a viable plan set against the rate pressure caused by the energy market in New England. Council Member Teichert noted concern for overly ascribing cost concerns by the PUC as a justification for moderating program spending when a Three-Year Plan should signal and justify more aggressive action to meet the state's energy goals. Mr. Ross noted the value of clearer data points from a bottom-up planning tool would be useful to understand how spending and plan targets can be dialed in to maintain robust outcomes. Vice Chair Gill Case expressed enthusiasm for the plan's benefit-cost ratios.

7. Public Comment

Emily Koo – Acadia Center
Ms. Koo echoed comments previously made regarding equity and setting expectations for equity metrics and targets. She highlighted the need for equity metrics to be focused on outcomes, not just outputs.

Before adjournment, Chairperson Oakley commended Ms. Sholly from the consultant team for her work on the Council's branding and communications effort.

8. **Adjournment –**
   Chairperson Oakley motioned to adjourn the meeting at 4:59 p.m. Vice Chair Gill Case seconded. All in favor, none opposed.

Rhode Island Energy™
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Energy Efficiency Plan Update

September 14, 2023

2024-2026 EE Plan Priorities

Rhode Island Energy™
a PPL company

Five Key Priorities

Deliver optimized, tailored programs that serve all customers and **increase program reach**

Understand customer needs, planning cycles, and goals to optimize incorporation of the **next generation of efficiency measures**

Enhance financing options, simplify offerings, and raise customer awareness of complementary funding sources that can be leveraged to **enable customers to invest in efficiency**

Serve customers equitably by designing programs with a conscious effort to serve small business and low- and moderate-income; gender, racially and ethnically diverse; and non-native English-speaking customers

Increase workforce capacity to serve customers and implement energy efficiency

Key Themes from Stakeholder Feedback

- Gas Incentives
- Equity
- Federal Funding
- DPAs
- Pre-weatherization Barriers
- 2024 IECC Code Training

Future of Gas (Incentives, not Docket)

- Resi:
  - BCR < 1 HVAC
  - Central Air Conditioning
- Shift to weatherization
- Alternatives?
- Multifamily: furnaces
- New Construction
- FoG Docket

Equity

- Strengthen metrics
  - Q1 2024
- 6 EWG Meetings in 2024
- Awareness gap
- Outreach Assessment
- HEZ
- Justice40: Resi, C&I
- Workforce development

Federal Funding

- Clean Heat RI, RGGI
- IRA Coordination Plan
- Rewiring America
- NEEP, ACEEE, etc.
- IAC Program

Demos, Pilots, Assessments

- C&I Weatherization Demo
- Residential Equity Outreach
- Multifamily Financing

Pre-Weatherization Barriers

- Refined data, and will continue to
- IRA?
- LIHEAP (already using)
- Outside funding sources
- Cost Effectiveness Constraints

Additional Code Training for 2024 IECC

Workforce Development Activity	Description	Target Audience
Train the Trainer	A “train the trainer” program will multiply the number of qualified instructors and allow for an increased training capacity	Code trainers
Reimburse Program Approved Trainers	After completing the trainer course, qualified instructors will be compensated to deliver code update trainings	Code trainers
Full Day Workshops	Full-day workshops allow for a deeper level of instruction for trainees looking for more detailed or specific code information such as design and plan review, HVAC implementation, etc.	Code officials, design professionals, builders, developers and contractors
LMS System Trainings	LMS style trainings can be pre-recorded and linked to various state and industry websites. This will allow trainees with time or transportation constraints to attend trainings on their own time	Code officials, design professionals
HERS Rater Training & Certification	Rhode Island will need to increase this workforce network dramatically to meet the needs of the industry once the new code takes full effect	HERS Raters

Electric Portfolio Numbers

Rhode Island Energy™
a PPL company

Year	Budget	Savings (LT MWh)	Cost of Savings ($/LT kWh)	BCR
2023	*$94,802,700**	*668,715*	*$0.142*	*1.70*
2024	$96,645,700	733,832	$0.132	1.70
2025	$100,100,800	771,753	$0.130	1.74
2026	$104,045,300	803,378	$0.130	1.75

*excluding ConnectedSolutions

All programs show BCR > 1 in all years 2024-2026

Gas Portfolio Numbers

Year	Budget	Savings (LT MMBtu)	Cost of Savings ($/LT Therm)	BCR
2023	*$36,931,500*	*3,537,835*	*$1.04*	*2.06*
2024	$34,873,800	3,289,038	$1.06	1.92
2025	$35,551,700	3,434,447	$1.04	1.91
2026	$35,640,000	3,571,470	$1.00	1.95

Also of Note

Total (Electric + Gas) Portfolio Fund Balance:

- 2023 Plan (end of 2022): $39.2 M
- 2024 Plan (end of 2023): $7.6M

All programs show BCR > 1 in all years 2024-2026

Gas Strategy – By the Numbers

Rhode Island Energy™
a PPL company

Compared to the 2023 Plan, the 2024 Plan shows:

- **Gas Portfolio:** 6% budget decrease.
  - Some programs show gas budget growth/maintenance – these programs include weatherization measures and/or end-uses that don't have competitive electric alternatives.
- **Gas Residential HVAC:** 58% budget decrease.
- **Gas Residential New Construction:** 7% budget decrease, with a reduction in quantities and incentives that continues through 2025 and 2026.

Least Cost Procurement Standards Updates

- The following areas of the Three-Year and 2024 Annual Energy Efficiency Plans were impacted by the updates to the LCP Standards:
  - Added views of cost-effectiveness and cost of supply for in-state benefits only
  - Added analysis of all energy savings expected in state from various sources over three year period and percentage of that expected from RIE
  - Added presentation of participation in Prudency section in response to addition to Standards regarding "equitable access"
  - Expanded measure details included for Residential and C&I Sectors
- Other updates to the Standards will impact Year End Reporting, System Reliability Procurement filing, and DSM Investment Proposals

STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

CONSULTANT TEAM

2024-2026 Three-Year Plan & Market Potential Study Overview

Presented By: EERMC C-Team

Date: November 28, 2022

Outline

Three-Year Plan Development

Market Potential Studies

2021-2026 Rhode Island Market Potential Study

Energy Efficiency Targets

Council Discussion

THREE-YEAR PLAN DEVELOPMENT

Three-Year Plan – Overview

Three-Year Plans are **high-level plans meant to describe strategies** the three covered years.

They are **due triennially with the date depending on the filing strategy**, which the Company must determine by July 1st

- Separate Three-Year Plan and Annual Plan filing: September 1st
- Combined Three-Year Plan and Annual Plan filing: October 15th

Three-Year **Plans can be informed by**:

- Market Potential Study results
- Council-recommended Targets
- Recent program performance and evaluation
- State policy objectives
- Economic conditions
- LCP Standards and regulatory guidance

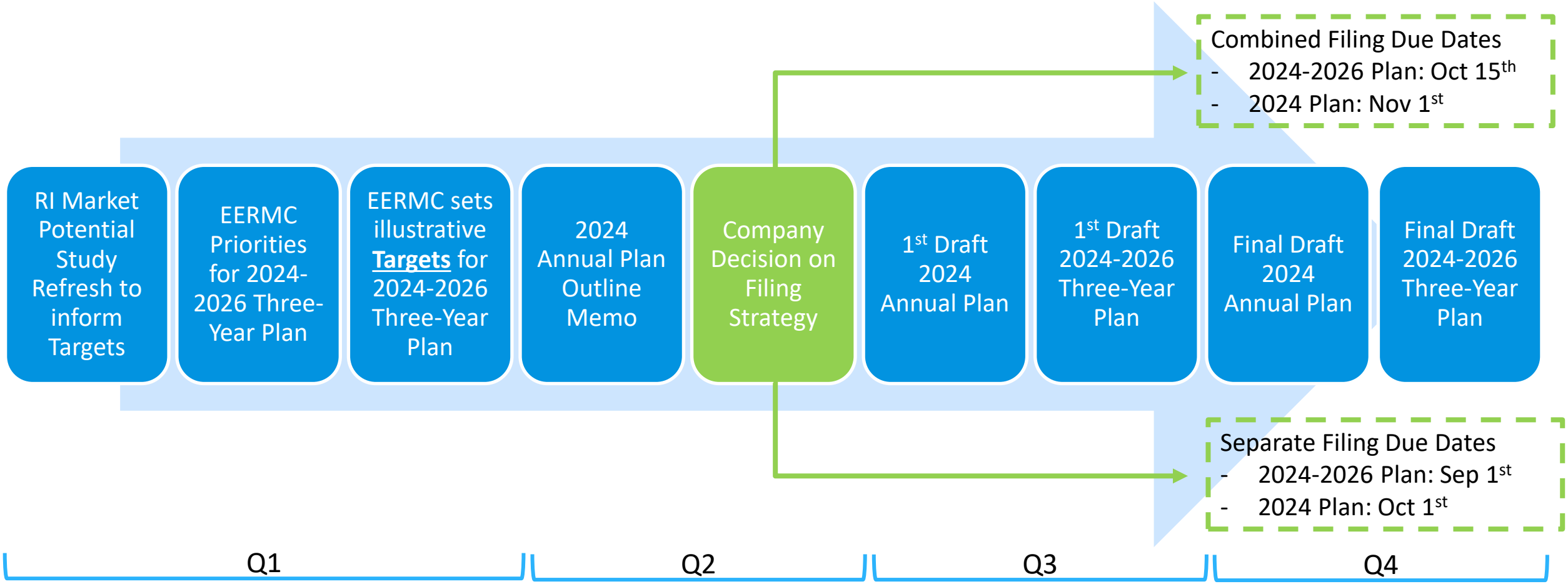
Three-Year Plan Targets

Council submits EE Targets to PUC for review and approval by March 1, 2023 to support 2024-2026 Three-Year Plan development

Only Annual Plan savings goals are binding; neither Targets nor savings goals included in Three-Year Plans are binding

The Targets and Three-Year Plan goals are aspirational, illustrative, and set to serve as a guidepost for Annual Plan goals

Three-Year Plan Development Process



Three-Year Plan Development Process

Market Potential Study Results

EERMC Targets and Plan Priorities

2024-2026 Three-Year Plan

2024 Annual Plan

2025 Annual Plan

2026 Annual Plan

Three-Year Plan and LCP Standards

Least-Cost Procurement Standards Requirements for Three-Year Plan Content

- Compliance with Least-Cost Procurement Standards
- Strategies & Approaches to Planning
- Cost-Effectiveness
- Prudence & Reliability
- Funding Plan and Savings Targets
- Performance Incentive Plan
- Multi-year Strategies

MARKET POTENTIAL STUDIES

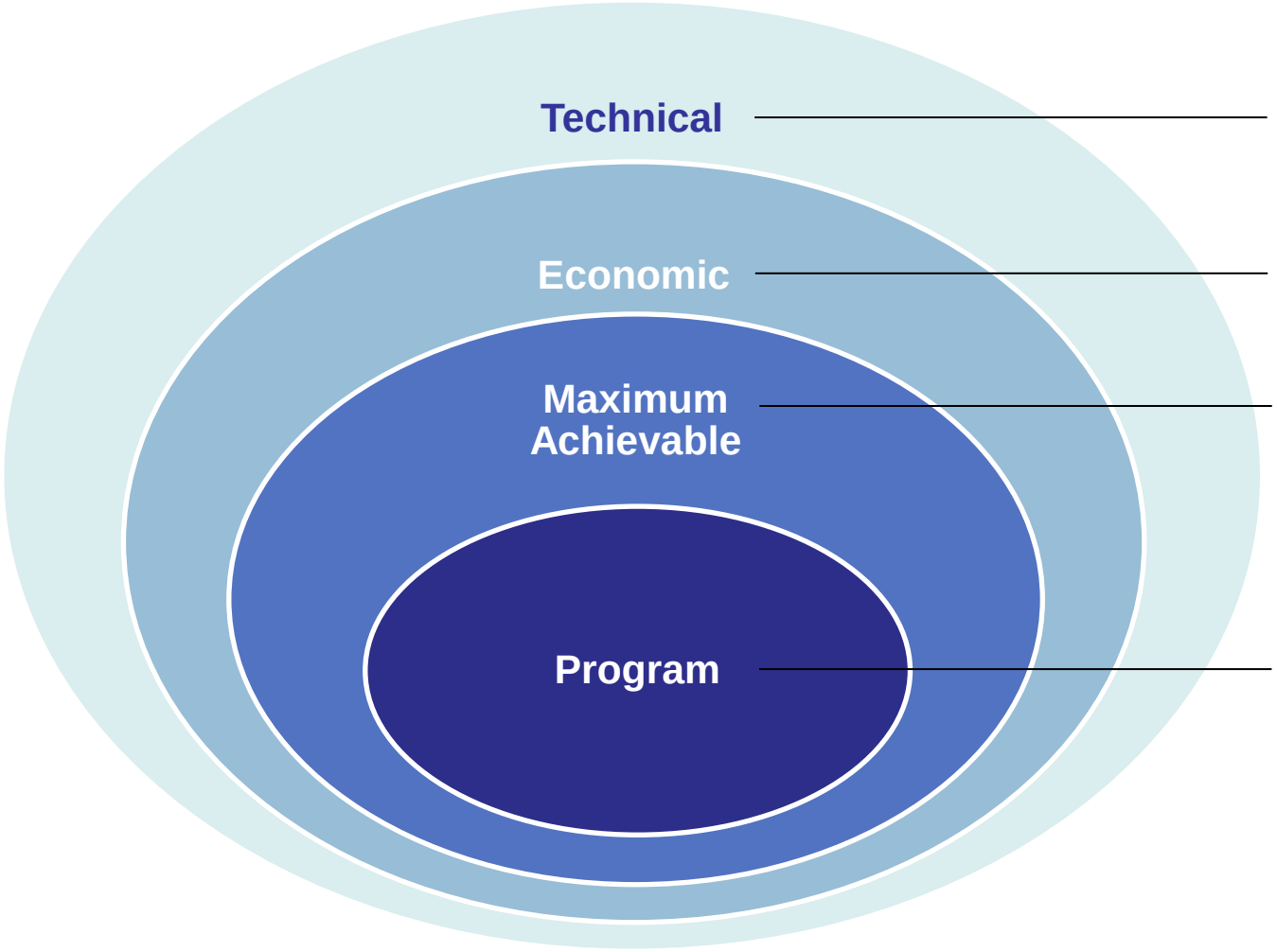
Market Potential Studies – Overview

Potential studies are quantitative estimates of available energy savings through efficiency and other clean energy measures

Potential studies are used for many applications:

- Setting program savings targets
- Estimating funding required to deliver programs
- Informing program design
- Quantifying the amount/cost of EE for long-term grid planning
- Reassessing EE as markets, technologies, and codes change

Market Potential Study Scenarios



The theoretical maximum amount of energy that could be displaced by efficiency

Subset that is cost-effective under the RI Test

Subset that is achievable considering market barriers and program costs under the most aggressive programs possible

Subset of achievable, given constraints in implementing a particular portfolio of programs. ***Often multiple 'scenarios' considered here.***

Limitations of Potential Studies

Though useful for estimating available energy savings, potential studies have limitations

- Uncertainty in predicting future costs, technologies, and codes & standards
- Difficulty in accounting for comprehensive projects
- Disagreements on modeling inputs or assumptions
- Modeling and/or data constraints
  - E.g. how to quantitatively capture participation barriers or estimate minimum necessary incentives for different customer groups

2021-2026 RHODE ISLAND MARKET POTENTIAL STUDY

2021-2026 RI Potential Study – Overview

A comprehensive analysis of the technical, economic & achievable savings potential in RI for the period of 2021-2026, covering:

- Electric
- Natural gas
- Delivered fuels (oil & propane)
- Demand response
- Combined heat & power
- Behind-the-meter renewables

2021-2026 RI Potential Study Scenarios

Three program scenarios were included in the Study:

Maximum Achievable

Max

Completely eliminated customer costs and further reduced customer adoption barriers to estimate max achievable potential

Program Achievable

Mid

*Increased incentives and **enabling activities** above and beyond levels within the 2020 EE Plan*

Low

Applied incentives and enabling activities in line with the 2020 EE Plan to simulate business as usual

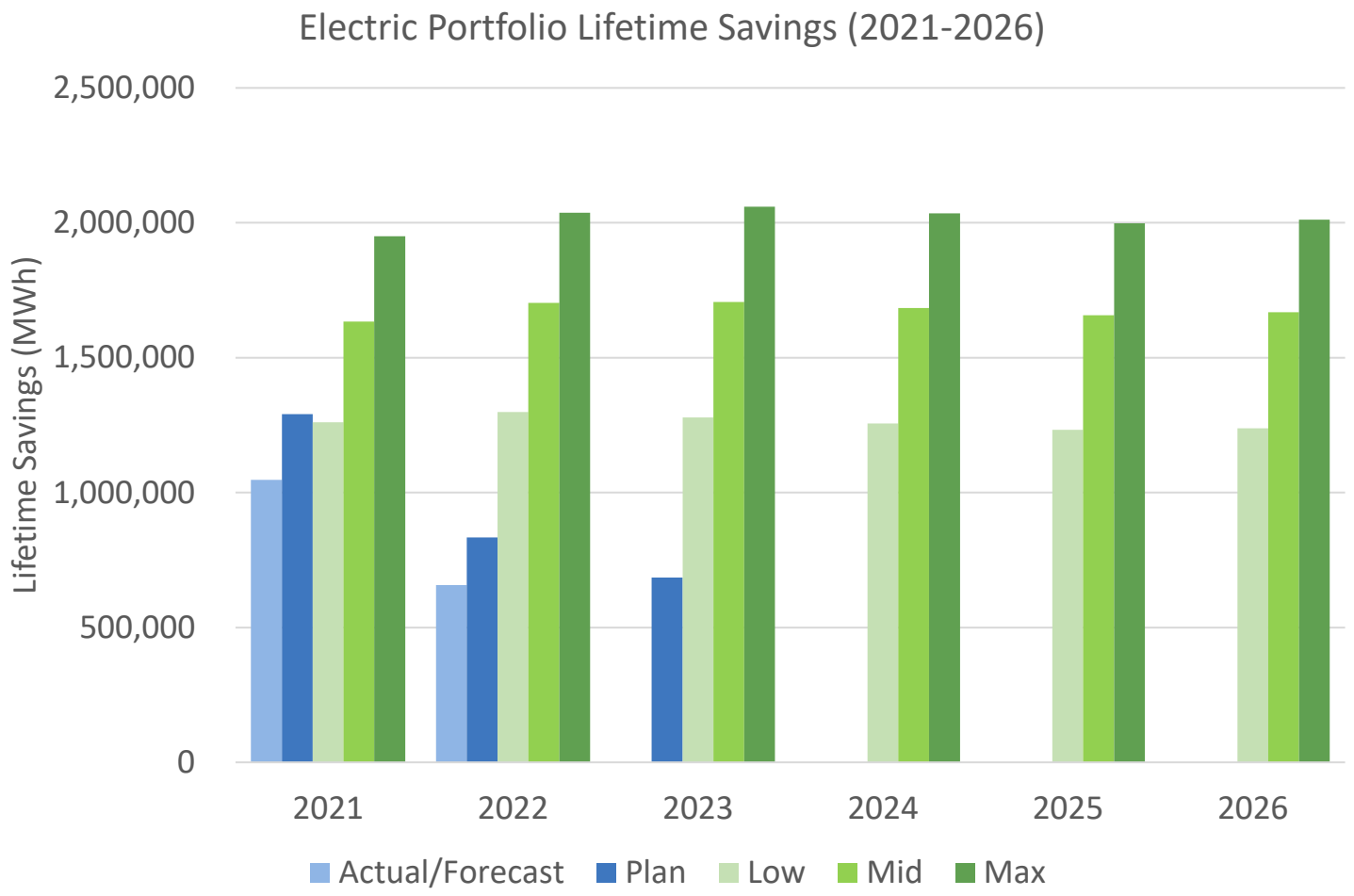
2021-2026 RI Potential Study Results

2021-2023 Three-Year Plan Targets were based on Max Scenario

Overall potential consistent across modeled years

Planned and actual savings trending down, below all scenarios in 2022 and 2023

- Drivers include EM&V impacts and budget levels



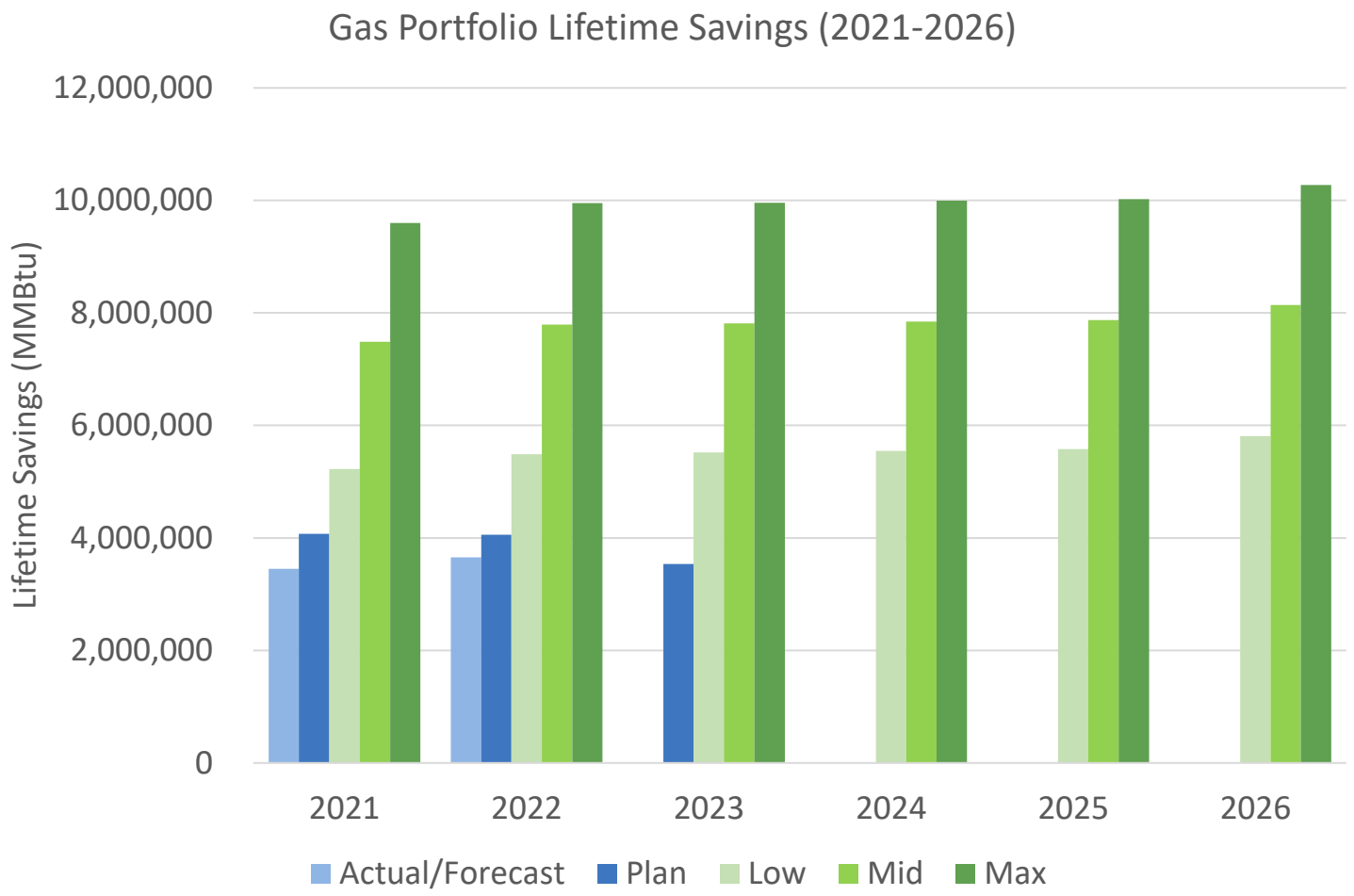
2021-2026 RI Potential Study Results

2021-2023 Three-Year Plan Targets were based on Max Scenario.

Overall potential consistent across modeled years

Gas plans declining less in recent years

- Includes efficient gas appliances, does not include electrification

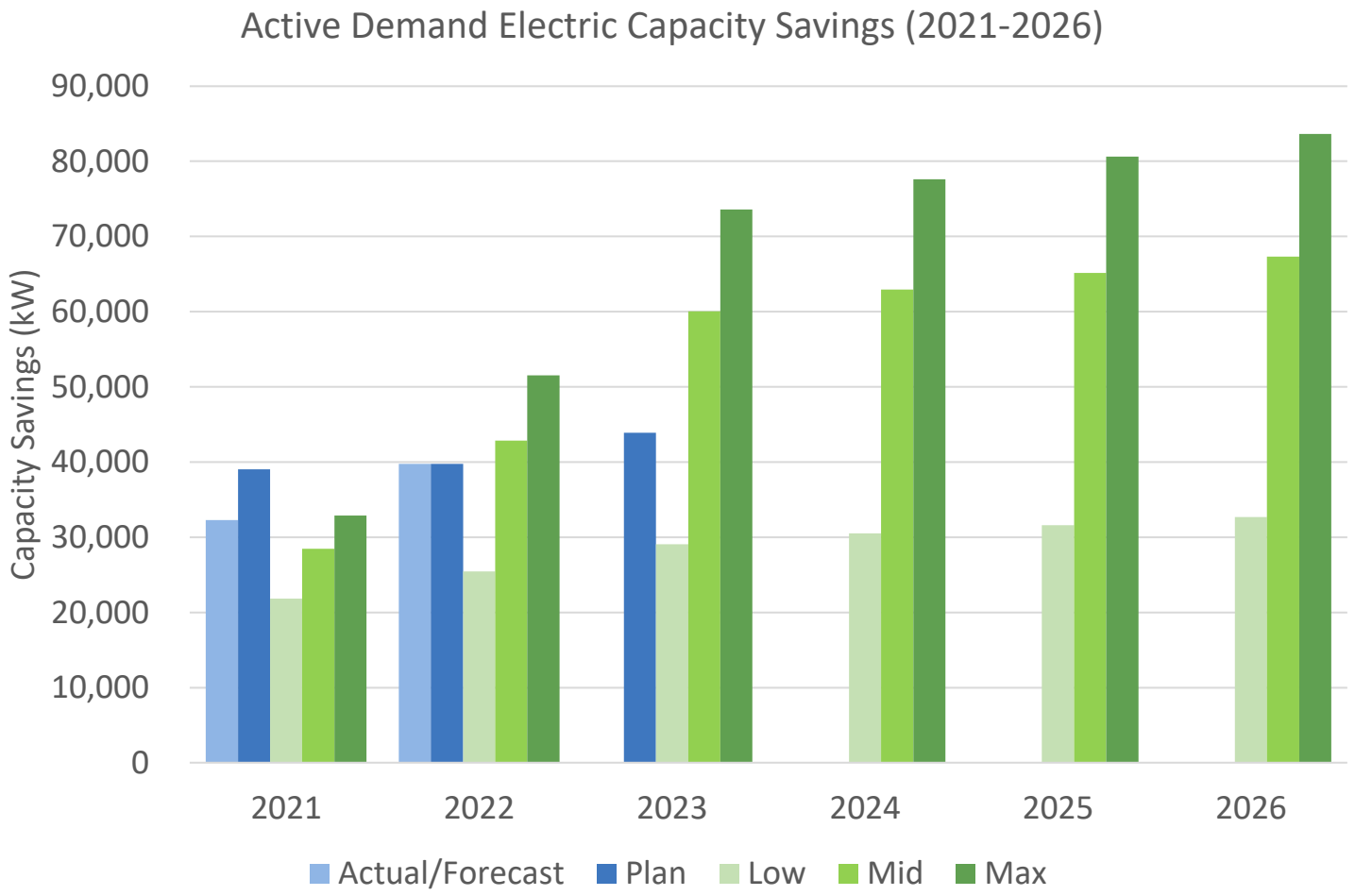


2021-2026 RI Potential Study Results

Notable upward trend in DR potential reaching steady levels in 2024-2026

Reporting methodology in MPS didn't align with how RI measures DR

- Data refresh may be able to resolve this



ENERGY EFFICIENCY TARGETS

2024-2026 MPS Data Refresh

Updating data from the 2021-2026 study for 2024-2026, focused on max and/or program achievable, and covering:

- Electric
- Natural gas
- ~~Delivered fuels (oil & propane)~~
- Demand response
- ~~Combined heat & power~~
- ~~Behind-the-meter renewables~~

2024-2026 Savings Targets

Council will develop Targets Recommendations Memo to be filed March 1, 2023

The previous RI Market Potential Study was conducted in early 2020 but includes potential savings estimates for 2024-2026.

- 2024-2026 results are still a valuable reference point for overall potential

The MPS refresh will allow for updated assumptions around

- **Evaluation, Measurement, and Verification (EM&V) study results**
- New measures and technologies
- Recent program performance
- Policy considerations
- Changes in market conditions, such as costs

Scenario Differences in Setting Targets

Program Achievable (Low/Mid MPS Scenarios)

- Constrained by historical program savings
- Implicitly constrained by historical budget levels
- The “art-science” balance more towards “art” in this scenario

Maximum Achievable (Max MPS Scenario)

- Significantly higher savings than Program Achievable
- Most closely aligned with Least-Cost Procurement
- Still subject to realistic modeling constraints
- May take time to ramp programs toward this level

Council Discussion

Which scenario sounds most appropriate to use?

2021-2023 Target Setting Logic

Max achievable is the most conceptually consistent with the target-setting process

- Captures all possible cost-effective savings
- Defers questions of prudency and reliability to 3-year plan process
- Program constraints (e.g. workforce) can be built further into annual plans
- Meets requirements of law to pursue all cost-effective savings less than the cost of supply

The Council voted on targets consistent with Max scenario in 2020 to inform the 2021-2023 Three-Year Plan

Council Discussion

Does this process make sense? Are new target-setting approaches needed?

Council Member Discussion Prompts

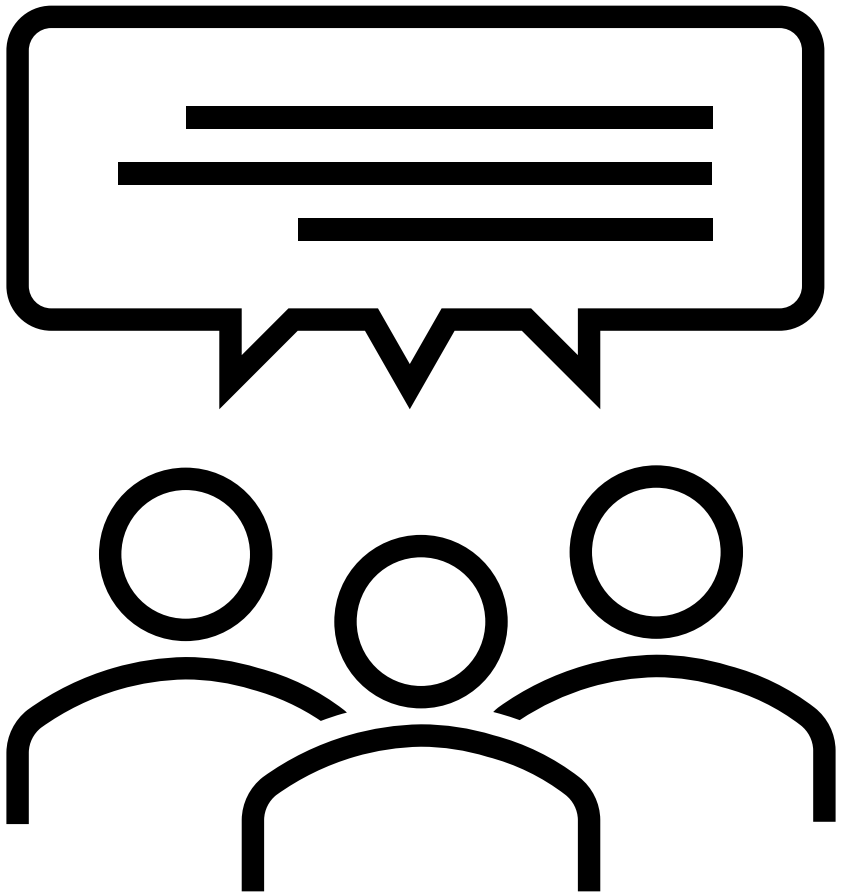
What aspects of the 2024-2026 Three-Year Plan and 2024 Annual Plan development process are unclear?

What additional detail can be provided on how the 2020 Market Potential Study informed 2021-2023 Targets?

What are next steps for developing Council priorities on the 2024-2026 Three-Year Plan?

Questions on potential study methodology, applications, or other limitations?

Council Member Discussion



APPENDIX

Recent EERMC Plan Priorities

Align with the 2021-2023 Three-Year Plan and reference ‘High’ savings scenarios included in the Three-Year Plan

Comply with Least-Cost Procurement Standards

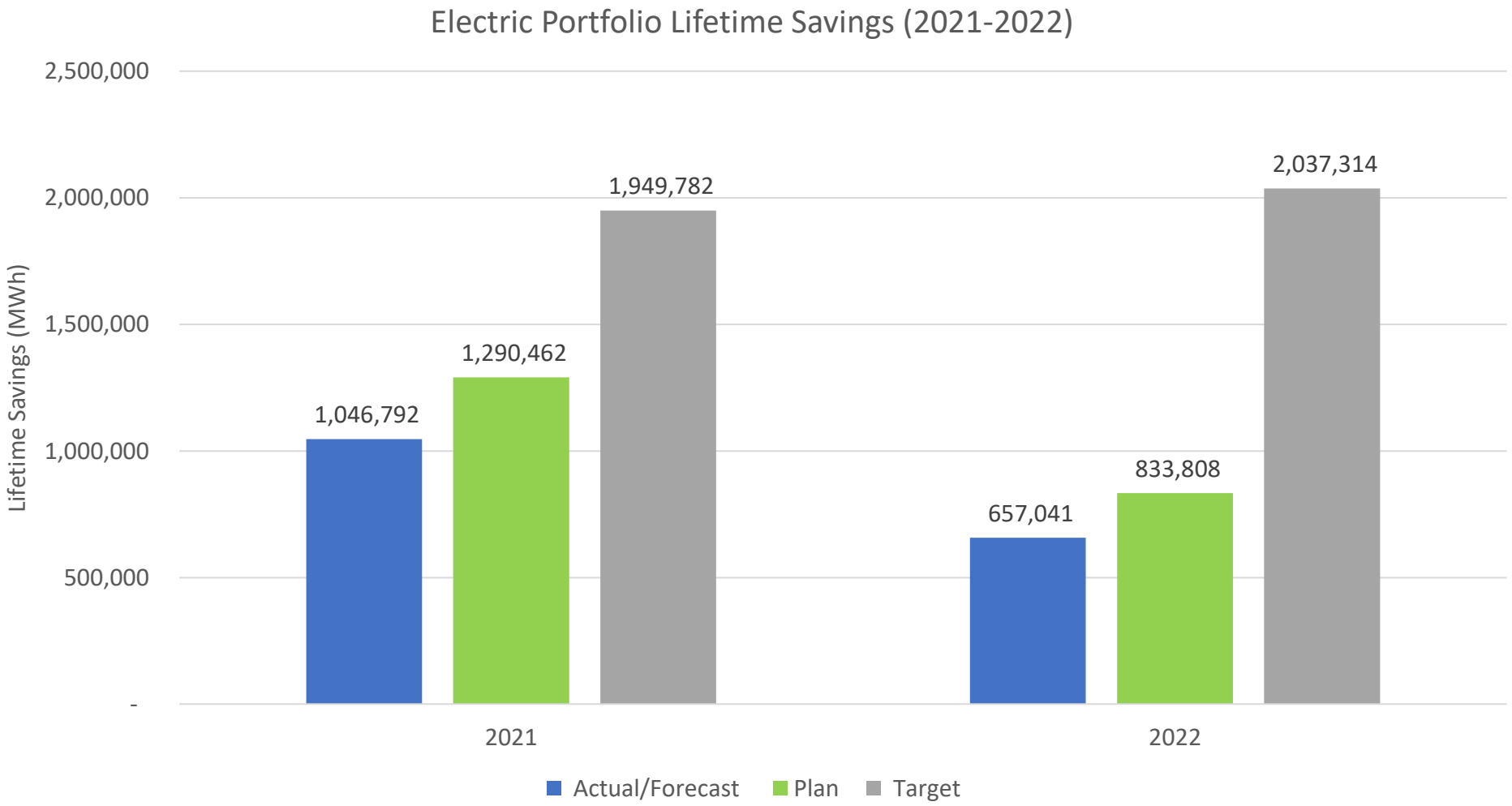
Incorporate stakeholder input and priorities

Support equity and access

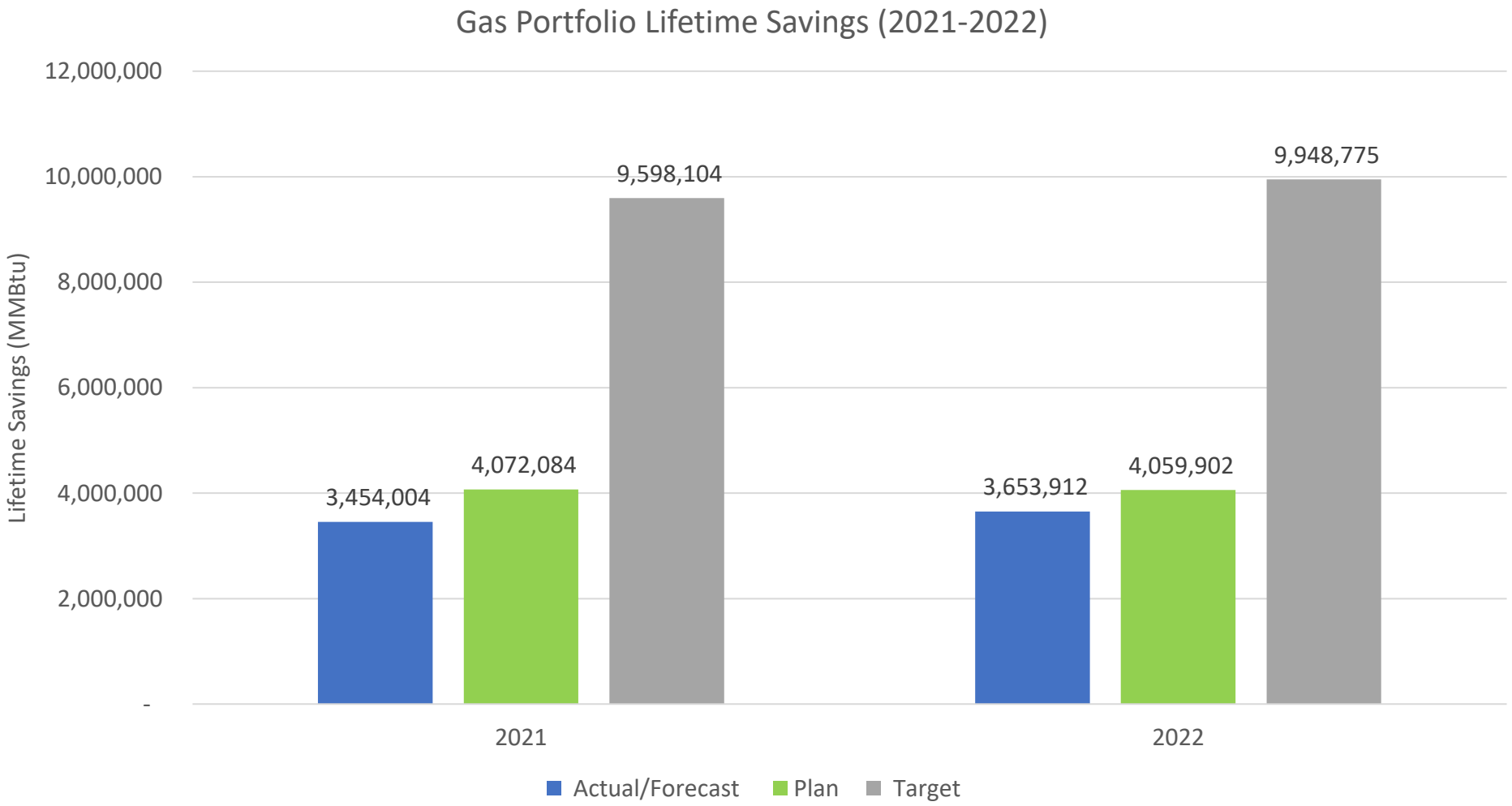
Ensure effective and efficient development and review process

Give due consideration to Act on Climate mandates

Electric Savings Comparisons



Gas Savings Comparisons



Additional Resources

RI 2020 Market Potential Study Report

- Results Chapters
- Methodology
- Data Results (Excel File)
- Graphical Summary
- Slide Deck

2021-2023 EERMC Recommended Targets

2021-2023 Three-Year Plan and 2021 Annual Plan (Combined Filing)

Least Cost Procurement Legislation

Least Cost Procurement Standards – 2020 Revisions

STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

EERMC LEARNING, EDUCATION, AND ADVANCEMENT DISCUSSION DRAFT MEETING MINUTES

Monday, November 28, 2022

Council Meeting | 1:00 - 4:00 PM

President's Dining Room, Donovan Dining Center, Rhode Island College, 600 Mt. Pleasant Ave., Providence, RI 02908 with additional audio/video participation available through Zoom.

Members in Attendance: Harry Oakley, Peter Gill Case, Sue AnderBois, Dave Caldwell, Joe Garlick, Kurt Teichert, Bob Izzo, Brett Feldman

Others in Attendance: Rachel Sholly, Adrian Caesar, Sam Ross, Craig Johnson, Margie Lynch, Steven Chybowski, William Owen, Claire Kokoska, Toby Ast, Josh Kessler

1. **Arrival, Refreshments, and Welcome**
   Ms. Sholly opened the meeting at 1:02 p.m. with an introduction of the agenda, noting a specific focus on equity across the agenda topics and within deliberations on the Three-Year Energy Efficiency Plan in 2023.

2. **Introductions and Icebreaker**
   Ms. Sholly led the room in introductions among Council Members, Consultant Team staff, OER staff, and public attendees.

3. **2024-2026 Three-Year Plan – Overview & Market Potential Study**
   Mr. Ross of the Council's Consultant Team presented on the Three-Year Plan and the Market Potential Study (MPS) as an introduction to the development of the Three-Year Plan, timing of the plan, and details of the MPS refresh. The Council discussed the use of the MPS for expectations and agenda setting in developing the Three-Year Plan, with a focus on achievability and how the Council will choose targets during deliberations on the Plan.

   The Consultant Team presented a comparison of the planned targets versus the achieved results, with a discussion on demand response (DR) topics within the refresh, how DR can affect equity, and the potential for a Rhode Island Energy (RIE) presentation on DR. Council Member Feldman presented an overview of updates to the MPS around assumptions in the model and RIE's role in assisting in the study refresh. Chair Oakley commented on the benefit-cost ratios as useful targets, and the Council discussed BCRs both for technology types and program models, and how to reconcile BCRs against social costs and ratepayer

concerns, as well as how involvement in the refresh process would include stakeholder participation. The Council intends to include equity metrics in the Three-Year Plan.

4. **MA Energy Efficiency Equity Targets, Metrics, & Reporting**
   Ms. Lynch gave a presentation on the Massachusetts approach and implementation of equity in energy efficiency, including a review of the MassSave program, the timeline for equity development, studies of non-participant populations and implications for both residential and business participation, and comparisons for MA and RI. She also covered the creation and composition of the Equity Working Group, how Environmental Justice communities were defined, and the setting of an equity target with the performance incentives. The presentation highlighted the 71 equity recommendations in Massachusetts and the assessment of budget costs spent on equity efforts. Ms. Lynch presented on target categories including renter populations, English-isolated populations, how targets were assessed, and the assignment of tasks to gather more effective data and gain confidence in the ability to achieve program targets. She mentioned that workforce development targets received program administrator pushback due to risk concerns and resulted in more task assignments on expanding workforce development growth.

5. **RI & MA Energy Efficiency Equity Targets, Metrics, & Reporting**
   Council Member Teichert raised the question of the oversight body's role/allowance of equity targets in EE plans. Ms. Lynch noted MA DPU did not allow equity incentives in prior version of MA plan, but public feedback and refinement of program plus a change in the overall conversation around equity resulted in the idea being adopted, and Mr. Ross noted that there are mechanics such as the Service Quality Adjustment which could potentially include equity as a metric as the structure exists within the scheme.

   Vice Chair Gill Case asked whether 3rd-party implementation of these equity factors was part of the conversation, to utilize the effort of existing community groups. Ms. Lynch responded it was not common due sensitivity around the issue, but there is some, and the effort to enhance heat pump adoption is growing the community-based role. Workforce development was shifted from the Program Administrators to the MA Clean Energy Center.

   Council Member Caldwell noted that this is an area where RI can surpass MA and set a model for other areas to support workforce development for small contractor/BIPOC entities in order to further the goal of reaching EE targets through greater adoption in communities that those businesses would represent. The conversation touched on the possibility to partner with established organizations to generate greater BIPOC workforce participation and the barriers these contractors face. There is significant federal funding that will be available soon which could help this effort.

6. **2024-2026 Three-Year Plan – EERMC Priorities and Strategy**
   The Council discussed their priorities for the next Three-Year Plan and highlighted workforce development for inclusion, noting opportunities to utilize funding and targets that can provide signals to the business community. There was discussion of also including targets for climate, electrification, equity, and more broadly, how energy efficiency fits into the goals for the 2021 Act on Climate.

   Vice Chair Gill Case raised the topic of narrative priority, and the ability to leverage public concern for plan details through stronger messaging to raise awareness, and the need to utilize the rebranding moment to enhance the wider goals. Ms. Lynch noted that the MA

group included activists on the Council, who had ties back to communities who could raise support and/or opposition to program proposals.

The Council summarized initial priorities for the Three-Year Plan around equity, workforce development, climate goals, billing and costs, and engagement with 3rd parties to enhance or accelerate the work. There was discussion around pilot programs for target communities and raising awareness through press events, and the need to support MBE small contractors to emphasize the equity targets.

Mr. Ross briefed the Council on the PUC session regarding the EERMC budget and the corrections made to it, and noted that the meeting provided a framework for updating the Council's budget proposal after the initial submission. Mr. Chybowski noted for the group that we are still seeking recommendations to fill the three vacant seats on the Council.

7. **Public Comment**
   None.

8. **Adjournment**
   Councilmember Oakley adjourned the session at 4:01PM.