

2024 Demonstrations, Pilots, and Assessments

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Section One: Introduction

Rhode Island Energy (RI Energy or the Company) invests in demonstrations, pilots and assessments that support the development of new offerings and, more generally, expand energy efficiency choices for customers. Based on the Public Utility Commission's (PUC) budget guidance during the 2023 planning process, the Company is scaling back its direct application of demonstrations, pilots and assessments. For the 2024 program year, the Company is investigating several demonstrations, pilots and assessments and expects to offer one-to-two Residential and Commercial & Industrial (C&I) projects as detailed below.

To cost effectively assess the marketplace for new technologies and program models, the Company intends to use two PPL (RI Energy's parent company) memberships: Electric Power Research Institute (EPRI) and ESource.

[Electric Power Research Institute](#)

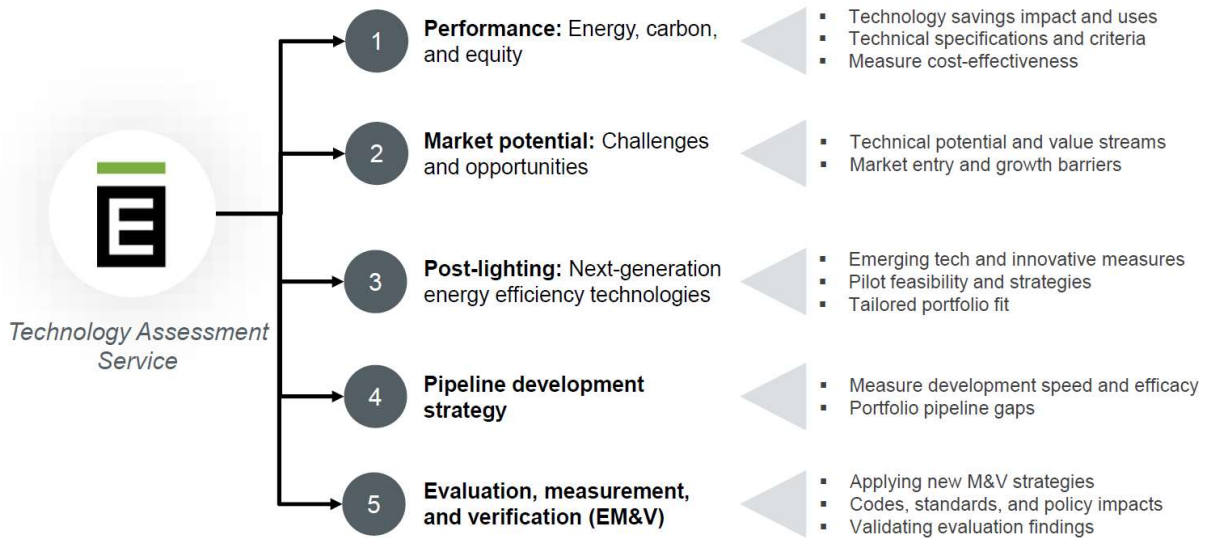
EPRI is an independent non-profit energy research, development, and deployment organization with a membership of utilities and other energy companies worldwide. PPL has a long-standing relationship with EPRI, and PPL's CEO is the incoming EPRI Board Chair for 2024. Power Delivery and Utilization, one of EPRI's research areas, has an Electrification and Customer Solutions focus area with some of the following programs:

- Grid-edge customer technologies
- Customer insights
- Electrification
- Advanced buildings and communities

In 2024, RI Energy will join PPL's EPRI membership and conduct an analysis of its research to see if there are relevant opportunities to add to its energy efficiency program portfolio. Once RI Energy has access, the Company will perform an initial assessment of past reports to determine if there are demonstrations, pilots and assessments it should pursue. Then, the Company will initiate a quarterly process to review new studies and also engage with EPRI as much as possible to influence future topic areas that may be of interest to Rhode Island consumers.

[ESource](#)

PPL also has a corporate membership with ESource, a utility member organization providing deep market research on energy efficiency and distributed energy programs, policy, and technology. One of ESource's research areas is its Technology Assessment Service, which advises utilities on the performance characteristics, technical aspects, and feasibility of new demand-side management, distributed energy resources, and electrification technologies and measures. The Technology Assessment Service can help inform the Company's strategic technology and innovation efforts for end-use technologies and measure development and assess end-use performance characteristics, energy impacts, and costs to help determine potential demonstration, pilot, and assessment projects. ESource's Technology Assessment Services are detailed below.



For ESource, the Company will employ a similar analysis process to what was outlined for EPRI above. Using PPL’s corporate memberships in EPRI and ESource will allow RI Energy to cost share with other PPL affiliates in order to access world-class technology research in a very cost-efficient manner.

Section Two: Definitions

The Company, using guidance from the PUC, has outlined three separate pathways that may be used to investigate ideas:

1. Demonstration,
2. Pilot, or
3. Assessment.

Ideas are vetted for fit and feasibility, commercial availability, and documented preliminary recommendations of characteristics such as target customer, market barriers, magnitude of potential savings, and delivery pathway. An idea will only be recommended as a demonstration, pilot, or assessment if there are clearly articulated research goals that cannot be answered without a concerted research effort.

The Company has three research pathways that can be applied during demonstration, pilot, or assessment:

- Independent Evaluation (highest rigor),

- Vendor Evaluation, or
- Review (lowest rigor).

The appropriate research pathway will be chosen jointly by the appropriate Company sector and evaluation leads depending on the needs and potential of the demonstration, pilot, or assessment. The same team will also consider the uncertainty of the savings, scope of the offering, market barriers, and whether the technology is considered as a demonstration, pilot, or assessment. The research and evaluation pathways are summarized in Table 1 and defined further below.

Table 1. Definitions: Pilots, Demonstrations and Assessments

	Pilot	Demonstration	Assessment
Defining characteristics	<ul style="list-style-type: none"> • May result in independent program • Long-term, comprehensive engagement required to test and develop offering • Market capabilities may need to be developed 	<ul style="list-style-type: none"> • Technology requires information gathering and field installations 	<ul style="list-style-type: none"> • Technology addresses program need that cannot be met with other, more certain solutions • Technology does not have a robust basis for energy savings
Cost effective savings information	Unknown or limited	Estimated savings	Unknown or limited
Evaluation Options*	Vendor or Independent	Vendor or Independent	Vendor, Independent, or Internal Review
Savings contribution to shareholder incentive	No	Yes	No
Cost recovery from SBC	Yes	Yes	Yes

* Each evaluation option will include input from EERMC and OER. Evaluation option selection based on factors such as uncertainty of savings, scope of offering, and whether technology is considered a demonstration, pilot, or assessment

2.1 Pilots

In 2019, the Company redefined what it considers a pilot in accordance with Docket No. 4600-A PUC Guidance Document. Per the Guidance Document, “A pilot is a small scale, targeted program that is limited in scope, time, and spending and is designed to test the feasibility of a future program or rate design. It is incumbent upon the

proponent of a pilot to define these limits in a proposal for PUC review. Ideally, a pilot can provide net benefits and achieve goals, but the primary design and value of a pilot is to test rather than to achieve.”¹

Pilots are designed to explore technologies and approaches to energy management not included in the Company’s core energy efficiency programs and that could potentially become a new, standalone program.

Pilots enable the Company to test technologies, new energy management strategies, customer adoption, workforce adoption, and cost effectiveness of emerging and new technologies. While pilots are designed to test standalone programs, pilot results may conclude that a standalone program is not recommended or that certain aspects of the pilot should be offered within existing programs. It is likely that pilots will require a long-term commitment and broader set of stakeholder input, given the scope of adding a new core program to the Company portfolio. Savings associated with pilots will not contribute to shareholder incentives. Pilots may be evaluated with either an independent or a vendor evaluation.

A pilot is likely to be recommended when a solution:

- Meets the fit and feasibility criteria of the Intake stage.
- Is clearly defined in the Concept stage, including savings and potential estimates.
- Is unique and robust enough to operate as a standalone program.
- Requires comprehensive, long-term engagement to determine the benefits and structure of a potential standalone program.
- May require creation of new market capabilities for program success.

2.2 Demonstrations and Assessments

Demonstrations

For actions in this Plan that do not fall under the Docket 4600-A definition of pilots, the Company proposes the following definitions for demonstrations and assessments:

¹ Docket No. 4600-A PUC Guidance Document, Oct. 27, 2017. Section V. Pilots.

Where a pilot will test the feasibility of a new program outside of the existing core programs, a demonstration will test the feasibility of a new product or offering for inclusion in existing programs. It is generally expected that demonstrations will be less time and resource intensive than pilots, since generally there is greater certainty around a narrow, incremental idea added to a program rather than a totally new set of offerings. Savings associated with demonstration projects may contribute to shareholder incentives. Demonstrations may be evaluated with either an independent or a vendor evaluation.

A demonstration is likely to be recommended when a solution:

- Meets the fit and feasibility criteria of the Intake stage.
- Is clearly defined in the Concept stage, including savings and potential estimates.
- May require information-gathering and field installations.
- Offers a robust basis for energy savings.

Assessments

Assessments will be deployed for solutions that address a particular gap or program need but have significant uncertainty around the effectiveness or potential of the solution to realize savings. Because of the uncertainty, assessments will not include field demonstrations or customer installations. Instead, assessments will focus on information gathering to equip Company staff to make a more informed decision of whether and how to proceed with the idea. It is possible that an assessment could recommend further demonstration of the idea or determine the solution should exit the review process. Savings associated with assessments may not contribute to shareholder incentives. Assessments may be evaluated with an independent evaluation, vendor evaluation, or internal review.

An assessment is likely to be recommended when a solution:

- Has questions of fit and feasibility in the Intake stage.
- Addresses a program need that cannot be met with other, more certain options.
- Lacks a robust basis for energy savings.

The Company employs three methods for conducting demonstration, pilot and assessment evaluations, described below.

2.3 Evaluations

Independent Evaluations

Independent evaluations apply the greatest level of rigor to the demonstration, pilot, or assessment and require broad coordination between teams. The Company participates in the planning and review process, but the evaluation itself is subject to the procurement process, oversight, and methods outlined in Attachment 3. The third-party evaluator develops the evaluation plan prior to customer installations to ensure the number and condition of customer installations are appropriately rigorous. The evaluator does not necessarily perform customer installations; however, they are involved to the extent required to ensure appropriate metering and customer feedback needed for the final analysis.

An independent evaluation is likely to be recommended if a solution:

- Is expected to contribute significant savings towards program savings goals.
- Must consider a population-level analysis, as opposed to site-specific analysis, to answer research questions.
- Poses policy or baseline questions that should be addressed through the evaluation framework.

Vendor Evaluations

Vendor evaluations are managed by internal staff, with a single vendor completing all tasks. Vendor evaluations may be applied to a demonstration, pilot, or assessment. This evaluation pathway engages vendors to provide initial research on market readiness, market barriers, customer interest, and work in other territories, before they assess, install, and analyze the results of the technology. The vendor must not have a financial interest in the outcome of the pilot, demonstration, or assessment and must have the necessary engineering, research, or measurement and verification (M&V) experience to evaluate the idea in an unbiased manner. The vendor ultimately recommends whether and how to integrate the technology into the programs and presents key information to inform deployment of the offering, such as target customers, market barriers, savings methodology, and best practices for installations and commissioning. The key differences between a vendor evaluator and independent evaluator relate to oversight and coordination with the Rhode Island Evaluation, Measurement & Verification (EM&V) framework described in Attachment 3.

A vendor evaluation is likely to be recommended if a solution:

- Is not expected to contribute significant program savings, either because it is a niche application or the per-project savings are relatively small.
- Is expected to be delivered through a custom pathway with site specific information inputs available during program delivery

[Internal Reviews](#)

Internal reviews may use internal resources to explore a product through an assessment. The Company typically relies on external resources for pilots and demonstrations in order to leverage outside expertise and maintain the integrity of the savings calculations. Internal reviews focus on key questions of uncertainty or policy related to technologies under investigation. An internal review can draw on available external resources and data, but will perform the research, analysis, and recommendations internally.

An internal review is likely to be recommended if:

- The solution is examined as an assessment.
- Research questions can be answered without customer installations.
- Research can be delivered with internal resources and external resources available without undertaking a procurement process (such as ESource).

Section Three: Summary of Demonstrations, Pilots and Assessments

3.1 2023 Demonstrations, Pilots, and Assessments

Here is a status list of current/recent demonstrations, pilots, and assessments from the Company’s Q2 2023 Energy Efficiency Quarterly Report:

Demonstration, Pilot and Assessment Name		Q1 2023 Updates
<u>Final Gas Appliances - Assessment - Residential</u>	Date	08/07/2023
	Stage	Final
	Recent Activity	Study report finalized
	Next Steps	Apply study results to program design
<u>Gas DR - Pilot - C&I</u>	Date	08/02/2023
	Stage	Demonstrate
	Recent Activity	Active for Winter 2022-23
	Next Steps	Moved to System Reliability Procurement
<u>Gas Leak Survey - Demonstration - C&I</u>	Date	05/09/2023
	Stage	Demonstrate
	Recent Activity	Working with vendors to determine savings calculation assumptions and post-verification procedures.

Demonstration, Pilot and Assessment Name		Q1 2023 Updates
	Next steps	Test post verification procedures at sites.
<u>Rightsizing Remote Terminal Units - Assessment - C&I</u>	Date	05/05/2023
	Stage	Plan
	Recent Activity	Completed assessment, which identified strategies for RTU right-sizing
	Next Steps	Integrate strategies into program design and implementation
<u>Automated Remote Terminal Unit Optimization - Demonstration - C&I</u>	Date	08/02/23
	Stage	Demonstrate
	Recent Activity	Recruited customers; installed product and monitoring equipment
	Next Steps	Measure summer performance
<u>Commercial Weatherization - Assessment - C&I</u>	Date	05/05/2023
	Stage	Demonstrate
	Recent Activity	Completed weatherization training with vendors, gathering feedback and research ongoing for offering development
	Next Steps	Develop Express Tool
<u>Air Curtains - Demonstration - C&I</u>	Date	01/26/2023
	Stage	Qualify
	Recent Activity	Opted to develop measure offering, in line with MA PAs
	Next Steps	Collaborate with MA to develop program offering and develop go-to-market plan
<u>Smart Valves for Chilled Water Systems - Demonstration - C&I</u>	Date	07/28/2023
	Stage	Plan
	Recent Activity	Final reported submitted
	Next Steps	Review report and develop plan on next steps

3.2 2024-2026 Commercial & Industrial Demonstrations, Pilots and Assessments

3.2.1 C&I Weatherization Demonstration

Demonstration Stage

The C&I Weatherization Demonstration is a concept.

Innovation Overview

The C&I Weatherization demonstration will explore opportunities to expand on historical weatherization efforts. Although weatherization has not historically constituted a major portion of the C&I Portfolio, the Company will seek to explore cost-effective opportunities to expand in this area. Any weatherization expansion will be evaluated for cost effectiveness within the existing C&I program framework (i.e., based on electric and gas savings only). However, improved building envelope and insulation are often seen as prerequisites to electrification, and weatherization will also be viewed in the broader context of its potential to contribute to electrification efforts.

Residential weatherization solutions are relatively standardized, with similar solutions applicable at a broad range of facilities while large commercial buildings incorporate a more complex and varied range of construction techniques and heating, ventilation, and air conditioning (HVAC) systems. This complexity makes it more difficult to apply standardized techniques for site identification and savings calculation. Therefore, this C&I Weatherization demonstration is designed to test the feasibility of this offering for inclusion in existing C&I programs.

Target Customer and Program Fit

Potential commercial buildings for presenting standardized opportunities may include:

- “Butler buildings,” which are prefabricated steel structures with limited insulation (usually fiberglass).
- Wood frame buildings, similar to residential buildings and can apply residential energy-saving techniques.
- Customers with portfolios of standardized buildings, such as chain restaurants.

Prior Efforts

During the 2021 and 2022 program years, RI Energy collaborated with the Office of Energy Resources (OER) and the Company’s Small Business Direct Install Program vendor to undertake a weatherization expansion effort, which leveraged Regional Greenhouse Gas Initiative (RGGI) funds to support additional weatherization measures at small businesses. The focus of this effort was on wood frame buildings. The Company captured significant cost data from this effort. In 2023, The Company completed weatherization training with vendors, and gathered feedback and research that will be incorporated for demonstration deployment. Demonstration Delivery

The Company plans to use a third-party vendor to assist in developing and implementing the C&I Weatherization demonstration. This effort will begin with a characterization of likely target facilities and potential solutions may include but are not limited to:

- Training for facility auditors and engineers.
- Identification of swathes of buildings with standardized opportunities (e.g., construction techniques and poor insulation).
- Integration of weatherization into other pathways (e.g., Equipment and Systems Performance Optimization Initiative).
- Program-approved savings calculator.
- Integration with statewide electrification efforts (provided that measures are cost effective under the Company's current energy efficiency program regulations and practices).
- Bundled incentives for weatherization at sites undergoing HVAC retrofits or replacements.

Evaluation

The C&I Weatherization Demonstration will be evaluated through the Company's Internal Review process (see Section 2).

3.3 2024-2026 Residential Demonstrations, Pilots and Assessments

3.3.1 Residential Equity Outreach Assessment

Demonstration Stage

The Residential Equity Outreach Assessment is a concept.

Innovation Overview

The Residential Equity Outreach Assessment will engage and incentivize non-profit organizations to provide direct energy efficiency education and outreach to landlords in one or more of the Company's five equity communities. These communities include the cities of Central Falls, East Providence, Pawtucket, Providence, and Woonsocket.

This assessment was developed to address and better understand the challenges with reaching landlords and renters in the Company's equity communities. Non-profit organizations are well-positioned within these communities to conduct creative, responsive, and community-grown energy efficiency outreach and education efforts. At the same time, the Equity Working Group (EWG) has apprised the Company of increasing demands on non-profits to provide community outreach while receiving no additional funding. To address this, The Company will provide participating non-profits with a total of \$40,000 of incentives to complete outreach and education efforts.

The incentives will be distributed to a small number of non-profits through an application process that selects participants based on their impact potential. Applications will be open to non-profits that are either based in or operate in one of our equity communities, with a stated preference for organizations with multilingual staff and existing landlord relationships. Application requirements may include, but are not limited to:

- A commitment to the assessment through the plan year
- An outreach, marketing, and communication plan
- A budget of how funds will be spent
- Support from or communication with local municipality(ies)

To enable selected organizations to best perform their outreach and education efforts, The Company may provide trainings in energy efficiency offerings, support the creation of co-branded multilingual marketing materials designs, share best outreach practices, and provide local event support as necessary.

Target Customer and Program Fit

This assessment is designed to reach both single-family and multifamily residential customers in the Company's equity communities who may experience barriers in accessing and adopting energy efficiency offerings. These communities include the cities of Central Falls, East Providence, Pawtucket, Providence, and Woonsocket. The Company is committed to ensuring customers across Rhode Island have equitable access to energy efficiency, regardless of their income, geographic location, primary language, business size, home ownership status, or other relevant barriers.

Prior Efforts

This assessment builds upon equity outreach efforts pursued in the 2023 program year. In collaboration with the EWG, the Company gathers feedback on its efforts to continuously improve and scale impact. In 2023, the Company provided enhanced outreach, promotion, and education of all EE offerings in underserved communities. Outreach efforts included partnering with and cross training home visiting programs and community organizations/resource groups to expand the reach and impact of energy efficiency programs. The Company also promoted energy efficiency programs at community gathering places and events. Outreach efforts focused on English and Spanish languages and included additional languages where possible.

Assessment Delivery

The Company is working with the EWG to vet assessment funding structures and options to promote maximum impact. It is also collaborating with the group to develop an equitable and robust application process for non-profit organizations to participate. Beyond these items, the EWG is providing feedback on assessment metrics that are being developed to track progress, performance, and outcomes of the assessment.

Evaluation

The Residential Equity Outreach Assessment will be evaluated through the Company's Internal Review process (see Section 2).

3.3.2 Multifamily Financing Assessment

Demonstration Stage

This Multifamily Financing Assessment is a concept.

Innovation Overview

BlocPower is a climate technology company based in Brooklyn, NY. They offer a financing structure for multifamily building energy efficiency and electrification projects. BlocPower structures its financing as a fifteen-year lease, with \$0 money down options. The lease can be used to fund a wide variety of energy efficiency and electrification measures, from HVAC upgrades, air & ground source heat pumps, heat pump hot water heaters, appliances, smart meters, solar photovoltaic systems, battery storage, EV chargers, smart thermostats, and building air sealing and insulation work. Financing can be used to cover related remediation measures ranging from the removal of knob and tube wiring, lead, mold, or asbestos to repairs for a leaky roof.

BlocPower's financing can be paired with local, state, and federal incentives, including rebates and credits from the Inflation Reduction Act, to provide maximum savings to customers. BlocPower's lease includes twice-yearly system maintenance. At the end of the fifteen-year lease, customers can either buy the system for one dollar, or sign up for a new lease with BlocPower.

BlocPower has developed a program for building owners to easily access critical upgrades at no upfront cost. These building upgrades, which can save money, reduce energy usage, improve local health, and mitigate unsafe conditions are bundled together under a 15-year lease agreement, with the option for a full warranty for the duration. This financing structure, which builds upon the strong track record of similar agreements in the solar energy industry, has been shown to increase adoption by reducing complexity, helping manage risk, and critically, by providing ready access to the capital needed to put these important improvements in place. The structure is unique to BlocPower, having been developed over several years in partnership with Goldman Sachs, Inclusive Prosperity Capital (an outgrowth of the Connecticut Green Bank) and various public and private sector finance organizations.

BlocPower has facilitated the financing and installation of over 1,200 green retrofits, largely in low- and moderate-income communities. BlocPower's financing is part of formal city/utility programmatic offerings in New York, Massachusetts, New Hampshire, Colorado, and California. BlocPower focuses financing on single family residential, small and large multi-family properties, small commercial buildings, and community institutions. When financing, BlocPower underwrites the customer's credit risk, then organizes, manages, and pays for the construction of the project.

The financial structure BlocPower utilizes overcomes many of the challenges that currently hinder building efficiency upgrade financing. These challenges include the mixed creditworthiness of building owners and tenants,

the multifaceted and complex nature of the financing process for building owners, and the potentially high financing rates for these upgrades. All these place limitations on who can access upgrades.

Target Customer and Program Fit

This assessment is designed to test an alternative financing model to fund projects at residential multifamily buildings with a particular focus on smaller buildings with two to twenty units. The Non-Participant Market Barrier Study found that even with rebates, upfront costs are a barrier to program participation for both customers and landlords/property managers. The BlocPower program overcomes this barrier by offering a solution that does not require an upfront monetary investment from building owners.

Prior Efforts

Financing for multifamily buildings is currently offered through the HEAT loan program. Even with the favorable interest rate available, the longest HEAT loan term available is seven years and the loan is capped at \$25,000 per unit. This has not proven sufficient to incentivize project implementation in the multifamily market in Rhode Island. BlocPower offers a longer term (15 years) and does not require a lien on the underlying building and property. The lease is secured by the installed equipment.

Assessment Delivery

The Company will work with its program delivery vendor, RISE Engineering, to incorporate the BlocPower option into project proposals as well as work with BlocPower to educate contractors on the lease offering. BlocPower will provide marketing materials, including case studies from their work in other jurisdictions, to help augment existing outreach to the market in Rhode Island.

The Company will subsidize the expenses associated with BlocPower's underwriting. As with any financial instrument, the capital provider, in this case BlocPower, will assess the creditworthiness of building owners and gauge their ability to honor the obligations of the fifteen-year lease agreement. Defraying these expenses will cost approximately \$39,000.

Evaluation

The Multifamily Financing Assessment will be evaluated through the Company's Internal Review process (see Section 2).