2024 Demonstrations, Pilots, and Assessments

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1 Introduction

The Company invests in pilots, demonstrations, and assessments that support the development of new offerings and (more generally) expand energy efficiency choices for customers. The Company has developed a framework to assess and test new innovations for the energy efficiency and active demand response portfolios. The Company has applied this framework in developing the solutions described in the 2024 Annual Plan, including new measures and solutions proposed in prior Annual Plans as well as new demonstrations and assessments for 2024.

Process: The Company has developed a standard process by which it tests new ideas and determines if each idea merits a pilot, demonstration, or assessment. There are eight steps in the process. Each idea is first assessed in the **Intake** stage, which determines whether the idea can be offered through the energy efficiency or demand reduction programs and whether the idea is commercially available. Next in the **Concept** stage, the idea's application, target customers, context within existing programs and offerings, market barriers, and preliminary savings potential are identified and developed. Ideas in these two early stages of review make up the Innovation Pipeline, which continually evolves as new promising concepts are vetted and launched.

The Concept stage necessitates preliminary research and analysis of the product, which will inform the **Plan** stage. Key decisions made during the Plan stage, including whether a pilot, demonstration, or assessment is required to develop the idea and, if so, whether an independent or vendor evaluation approach should be taken. The ideas included in Section 4 are all in the plan stage of development and recommended for a pilot, demonstration, or assessment. The decisions surrounding type and rigor of testing ideas are made with input from the Company Evaluation Measurement & Verification (EM&V) team, EERMC Consultants, and OER.

The planned pilot, demonstration, or assessment will be executed in the **Develop or Demonstrate** stage. Updates will be provided to the stakeholder teams on a quarterly basis.

Once the develop or demonstration stage is complete, the offering will be finalized and launched through the **Qualify**, **Launch**, and **Maximize** stages. During these stages, the product will be handed off to the Company's Customer Energy Management (CEM) team, vendor, and implementation teams who manage the product as part of the Company's energy efficiency portfolio.

During any of the above stages, the idea can be placed in the **Exit** process. There are three possible outcomes of an Exit: The product may be **Retired** if it does not fit into the Company's programs or if there is no viable business case. The product may be **Parked** if the policy or infrastructure required for successful delivery to customers is not available but may be in the near term. Finally, the product may be **Referred** directly to the programs if the idea is expected to produce reliable savings, fits readily into an existing program or measure, and the receiving program has the capability to finalize savings and incentives.

Evaluation: It is expected that each idea will require a different set of research questions that must be answered prior to qualification and inclusion in programs. Depending on the idea's characteristics, the expected program delivery pathway, and the nature of the uncertainty, the Company plans for different approaches to evaluate the idea during a pilot, demonstration, or assessment. For example, a low touch residential product that is expected to deliver through an upstream program requires drastically different analysis than a high touch industrial measure with few potential customers.

The Customer Energy Management team will recommend a research plan for each pilot, demonstration, or assessment approved through the planning process. The team will solicit input from the Company's EM&V team, OER, and EERMC consultants on whether the research requirements can be best met through an independent evaluation, a vendor evaluation, or an internal review. These approaches are further discussed in the following section.

2 Definitions

The Company, using guidance from the PUC, has outlined three separate pathways that may be used to investigate ideas in the Innovation Pipeline: Pilot, Demonstration, or Assessment. It is assumed that any idea selected for a Pilot, Demonstration, or Assessment has been vetted through the Intake and Concept stages outlined above. Ideas are vetted for fit and feasibility, commercial availability, and documented preliminary recommendations of characteristics like target customer, market barriers, magnitude of potential savings, and delivery pathway. A pipeline idea will only be recommended as a pilot, demonstration, 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 a pilot, demonstration, or assessment: Independent Evaluation (highest rigor), Vendor Evaluation, or Internal Review (lowest rigor). The research pathway will be chosen depending on the needs and potential of a Pilot, Demonstration, or Assessment and consider the uncertainty of the savings, scope of the offering, market barriers, and whether the technology is considered under a pilot, demonstration, or assessment. The research pathways and evaluation pathways are summarized in Table 1 and defined further below.

Table 1. Definitions: Pilots, Demonstrations and Assessments

	Pilot	Demonstration	Assessment
Defining Characteristics	• May result in independent program • Long-term, comprehensive engagement required to test and develop offering • Market capabilities may need to be developed	• Technology requires information gathering and field installations	• Technology addresses program need that can't 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 pilot, demonstration, or assessment

Pilots

In 2019, the Company redefined what it considers a pilot in accordance with the 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 core energy efficiency programs (Residential, Commercial and Industrial (C&I), and Multifamily) 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

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

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.

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: 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 employees three methods for conducting pilots, demonstration, and assessment evaluations, described below.

Independent evaluations
Independent evaluations apply the greatest level of rigor to the pilot, demonstration, 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 but is 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 pilot, demonstration, 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

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 RI 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).

3 Summary of Pilots Demonstrations and Assessments

Based on PUC budget guidance during the 2023 planning process, the Company is scaling back its direct application of Pilots, Demonstrations, and Assessments. The Company is investigating several pilots, demonstrations, and assessments for 2024 and expects to have 1-2 Residential and Commercial & Industrial projects in the second draft of the plan.
To cost-effectively assess the marketplace for new technologies and program models, the Company intends to utilize PPL's membership in the Electric Power Research Institute (EPRI). EPRI is an independent non-profit energy research, development, and deployment organization with membership of utilities and other energy companies worldwide. One of EPRI's research areas is called Power Delivery and Utilization which has a focus area on Electrification and Customer Solutions with specific programs including:

- Grid-Edge Customer Technologies
- Customer Insights
- Electrification
- Advanced Buildings and Communities

Rhode Island Energy will join PPL's EPRI membership in 2024 and will analyze its research to see if there are relevant opportunities to add to our program portfolio.