

# Memo



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

**To:** Energy Efficiency & Resource Management Council  
**From:** Mike Guerard, Mark Kravatz  
**CC:** Becca Trietch  
**Date:** April 30, 2020  
**Subject:** Evaluation, Measurement, and Verification (EM&V) Overview/Update

CONSULTANT TEAM

## INTRODUCTION

The memo provides an update on Rhode Island's evaluation, measurement, and verification (EM&V) work from the perspective of the EERMC Consultant Team (C-Team). This includes a high-level overview of EM&V and a description of how the C-Team and the Office of Energy Resources (OER) are actively engaged in Rhode Island's process and an EM&V status update on the impacts of the ongoing Covid-19 pandemic.

## WHAT IS EM&V?

Rhode Island's energy efficiency programs include a comprehensive energy efficiency program EM&V process.<sup>1</sup> EM&V represents a commitment to providing accurate, transparent, and consistent metrics – based on sound data – that assesses the performance and implementation of energy efficiency projects, programs, and portfolios of programs.<sup>2</sup> In addition to ensuring that all energy efficiency efforts are cost-effective, EM&V serves three critical objectives.

- 1) Accountability of the impacts - *Did the programs deliver on their estimated benefits?*
- 2) Risk management - *How certain are these savings?*
- 3) Continuous improvement - *What can be done to improve program performance in the future?*

For a more detailed overview of EM&V, the American Council for an Energy-Efficient Economy (ACEEE) has an EM&V toolkit. More information can be found at <https://www.aceee.org/topic/emv>

## EM&V IN RHODE ISLAND

According to the current version of the Rhode Island Least Cost Procurement Standards, EM&V shall address

- 1) Savings verification - including, where appropriate, analysis of customer usage
- 2) Verification should also facilitate participation in ISO-NE's forward capacity market
- 3) Issues of ongoing program design and effectiveness

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<sup>1</sup> For more general information about EM&V in Rhode Island, I encourage you to revisit PowerPoint slides from the June [2017](#) and May [2018](#) EERMC member retreats. These slides may be found on the EERMC website under meeting minutes and materials. <https://www.riermc.ri.gov>

<sup>2</sup> <https://www.aceee.org/topic/emv>

- 4) Efforts related to market assessment and methodologies to claim savings from market effects, among others
- 5) Regional and other cooperative EM&V efforts the distribution company is participating in or plans to participate in, and
- 6) Longer-term studies, as appropriate, to assess programs over time.

## The Process

Evaluations are conducted by third-party evaluators, managed by National Grid (“the Company”) with oversight from the C-Team and the OER. The Company submits a set of planned evaluations in the energy efficiency annual plan. Once the annual plan is approved, the Company’s Evaluation team begins to work on procuring qualified third-party evaluators.

In general, there are five main stages of the evaluation process.

1. Procurement
2. Scoping
3. Fieldwork
4. Final Report
5. Results Applied

During the **procurement stage**, the Company drafts thorough evaluation study descriptions that are incorporated in requests for proposals. In some cases, the Company will sole source to a third-party evaluator. All evaluation study descriptions are reviewed by the C-Team and OER.

Once the Company chooses a third-party evaluator, work begins on the **scoping stage**. The evaluator produces the scope of work. It provides details about how the evaluation will be conducted. It includes elements such as a statement outlining goals/objectives, task descriptions, explanation of methodology/process for completing each task, and a timeline for completion. All scopes of work are reviewed by the C-Team and OER.

After the scope of work is approved, the evaluator will begin **fieldwork**. Tasks include items such as conducting surveys and field observations. Any tools developed, such as a survey, are reviewed by the C-Team and OER.

When the fieldwork is completed, and data is compiled, a **final report** is drafted. The C-Team and OER provide are active participants in the evaluation final report review process.

Last, the **results are then applied** to the program. Some examples of applying results include using information from an impact evaluation<sup>3</sup> to update deemed savings organized in the Rhode Island

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<sup>3</sup> *Impact evaluations* assess outcomes of the changes attributable to an energy efficiency program. These evaluations answer questions for the first and second objectives described above about the accountability of the benefits and risk management. Source: ACEEE <https://www.aceee.org/topic/emv>

Technical Reference Manual (TRM)<sup>4</sup>. Another example may be implementing program improvement recommendations found in a process evaluation<sup>5</sup>. One more example may be adopting new program strategies in the next energy efficiency plan because of results from a market evaluation<sup>6</sup>.

With approximately twenty studies being run each year, organizational effectiveness is critical. The C-Team and OER meet with the Company's Evaluation team (separate meetings for residential and commercial/industrial) at least monthly. At these meetings, individual study updates are presented by the Company, accomplishments and challenges are discussed, and suggestions are made by the C-Team and OER. In between these monthly meetings, there is often a deluge of e-mail activity to review and comment on materials from every stage of each study.

Though intensive, the process above gives confidence that the Company's EM&V practices are held accountable and meet industry standards.

## 2020 EVALUATIONS

As described in the 2020 Rhode Island Energy Efficiency Annual Plan<sup>7</sup>, the Company has planned to conduct twenty residential, commercial/industrial, and cross-cutting evaluations this year. The figures below outline the studies that are presented in the Annual Plan.

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<sup>4</sup> The RI TRM is updated and submitted to the RI Public Utilities Commission. The 2020 version of TRM may be found here: <http://www.ripuc.ri.gov/eventsactions/docket/4979-NGrid%20TRM%202020/TRM%20Documents/PY2020%20RI%20TRM.pdf>

<sup>5</sup> *Process evaluations* assess program operations to identify and recommend areas of improvement. These evaluations answer questions for the third objective above about program improvement. Source: ACEEE <https://www.aceee.org/topic/emv>

<sup>6</sup> *Market evaluations* assess broad aspects of the marketplace with respect to energy efficiency. For example, a market effects evaluation characterizes changes in the structure or functioning of the market or the behavior of market participants that resulted from one or more program efforts. These evaluations help to answer questions for all three objectives. Source: ACEEE <https://www.aceee.org/topic/emv>

<sup>7</sup> The EM&V portion of the 2020 Rhode Island Energy Efficiency Plan starts on page 395. <https://rieermc.ri.gov/wp-content/uploads/2019/11/ngrid-ri-2020-annual-ee-plan.pdf>

## 2020 Residential Evaluation Studies

Program/Study	Study Type	About
EnergyWise Single Family, Energy Wise Multi-Family, Income Eligible Services Multi-Family	Impact	Verify energy savings estimates for measures offered through the EnergyWise Single Family, EnergyWise Multi-Family and Income Eligible Services Multi-Family programs
EnergyWise Single Family, Energy Wise Multi-Family, Income Eligible Services Multi-Family	Process	Assess the overall delivery of the EnergyWise Single Family, EnergyWise Multi-Family and Income Eligible Services Multi-Family programs
Home Energy Report	Impact	Verify energy savings estimates for measures offered through the Home Energy Report program.
Upstream Lighting	Market	This study will support potential research studies needed to inform planning activities for both retail and direct install lighting in 2021 and beyond.
Ductless MiniSplit	Process	Assess the current Rhode Island residential ductless mini-split heat pump offering.
Sense™ Demonstration	Impact/Process	Verify energy savings and assess the delivery of Sense™ technologies

## 2020 Commercial/Industrial Evaluation Studies

Program/Study	Study Type	About
PY16, 17,18, 19 Custom Gas Installations	Impact	Determine savings estimates for a sample of custom gas projects through site-specific inspection, metering, and analysis.
PY16, 18, 19 Custom Elec. Installations	Impact	Determine savings estimates for a sample of custom elec. projects through site-specific inspection, metering, and analysis.
Free Ridership & Spillover	Market	Free-ridership and spillover values will be updated based on an assessment of the behavior of both participants and nonparticipants of C&I energy efficiency programs.
Upstream Lighting	Impact	(MA) Verify electric energy savings estimates for a sample of upstream lighting projects through site-specific inspection, metering, and analysis.
Prescriptive Gas & Elec. Measures	Impact	(MA) Verify electric and gas energy savings estimates for a sample of prescriptive measures
Strategic Energy Mgmt. Demo	Impact	Verify savings from strategic energy management (SEM) demonstration
Small Bus. Heat Pump Demo	Impact/Process	Will inform efforts toward creating scaled solution for cold climate heat pumps for small businesses.

## 2020 Cross-Cutting Evaluation Studies

Program/ Study	Study Type	About
Piggybacking	Custom	Assess best practices for leveraging MA-based studies
Legislated M&V	Impact	Verify claimed energy savings from the Company's energy efficiency programs and review the Company's evaluation process
Heat Pump Market	Market	Will evaluate the current status of the heat pump market and assess potential for future growth of heat pumps
Jobs	Market	Will identify the workforce associated with National Grid's energy efficiency programs
Gas Peak Demand	Market	Determine the percentage of gas energy savings that occur during peak days/hours.
Res & C&I New Const. & Code Compliance	Custom	Calculate the savings projected to be achieved by the Code Compliance program for the 2021-2023 period
Codes & Standards Development	Custom	Will develop an evaluation framework for the Company's codes and standards development support.

## EM&V STATUS UPDATE

Like other elements of Rhode Island's energy efficiency programs, the EM&V process has been disrupted because of the Covid-19 pandemic. Though the procurement, scoping, and reporting stages of an evaluation process will most likely not face too many disruptions, conducting an evaluation's fieldwork (surveys, field observations) is proving to be very difficult. As a result, we anticipate delays with completing some evaluations in time to apply evaluation results for the 2021 annual plan. The C-Team and the OER will continue to monitor and work with National Grid and its third-party evaluators to complete as much of the 2020 studies that are possible.

The Figure below outlines the current evaluation studies (as of 04-22-2020) that are facing challenges due to the Covid-19 Pandemic.

Sector	Program/ Study	Study Type	Status
Residential	<u>EnergyWise</u> Single Family, Energy Wise Multi-Family, Income Eligible Services Multi-Family	Impact	Likely delay with surveys because of Covid-19 restrictions
Residential	<u>EnergyWise</u> Single Family, Energy Wise Multi-Family, Income Eligible Services Multi-Family	Process	Likely delay with data collection because of Covid-19 restrictions
Residential	Sense™ Demonstration	Impact/Process	Surveys Paused because of Covid-19 restrictions
C&I	PY2018 Custom Gas Installations	Impact	Likely delay with surveys because of Covid-19 restrictions
C&I	PY2018 Custom Electric Installations	Impact	Likely delay with surveys because of Covid-19 restrictions
C&I	Free Rider/ Spillover	Market	Likely delay with data collection because of Covid-19 restrictions
C&I	Strategic Energy Mgmt. Demo	Impact	Likely delay with program because of Covid-19 restrictions
Cross Cutting	Heat Pump Market	Market	Surveys Paused because of Covid-19 restrictions

## CLOSING

Rhode Island’s EM&V structure and process remain a practical and effective way to ensure that all Rhode Island EM&V practices are held accountable, correct, and efficient. The impacts of Covid-19 will make completing all 2020 evaluations more difficult. However, we are optimistic that the Company and its evaluation vendors will work to get as much finished as possible within Rhode Island’s energy efficiency calendar.