

# Efficiency Vermont Energy Savings Account (ESA) Project Documentation and Standards Guidance

*(version March 2020)*

## Introduction

On May 16, 2019, in accordance with 2018's Act No. 150, the Public Utilities Commission ("Commission") issued the Order Regarding Energy Savings Account Pilot Program, in Case No. 19-0302-INV, establishing the ESA Pilot Program, a new avenue for commercial and industrial companies to save on energy costs. Participants in the ESA Pilot shall complete a project or series of projects to reduce or transform overall energy consumption and spur economic opportunities. Customers participating in the 3-year Pilot will be able to use up to 100% of their electric energy efficiency charge to pay for the full cost of eligible projects, technical assistance, and evaluation, measurement, and verification. In the Commission's December 20, 2019 Order, it states, "Efficiency Vermont and the Department will work with customers to provide the documentation and standards needed to verify savings under the ESA pilot program."

This document is provided to offer guidance to ESA Pilot participants regarding such documentation and standards. While this guidance is intended to be comprehensive, there is the potential for additional data or other documentation requirements beyond this guidance document, dependent upon project, measure, and/or business operation specifics.

## Screening

Per the Public Utility Commission's order, all projects must pass a cost effectiveness screening before the participants are able to access energy efficiency charge funds. A project that passes the screening test can then use energy efficiency charge funds to reimburse the total cost of implementing the project. Participants will submit all proposed projects and efficiency measures in their Energy Management Plan to Efficiency Vermont for screening. Projects will be screened using the incremental costs of the measure or project (i.e., the cost differential between a baseline measure and the more efficient measure, rather than the total costs to install the measure). This methodology is consistent with the existing EEU program and the principles of the societal cost test to assess whether the benefits of energy efficiency will exceed its cost from the perspective of society as a whole. The Commission has previously determined that, consistent with the requirements of Section (2)(b)(1) of Act 150, qualified expenses include up to 100% of the costs associated with implementing an eligible project. The use of incremental costs when screening projects does not prohibit a participant from being eligible for reimbursement for the total cost of implementing the project using energy efficiency charge funds.

The following will serve as a documentation guide, outlining the typical information that will need to be submitted to EVT by the participant to complete screening.

For each proposed efficiency measure submitted as part of the participant's Energy Management Plan, the following should be provided:

1. Measure Narrative, explaining the intent and scope of work that will yield savings, the baseline condition, and the proposed efficient condition.
2. Total project cost which includes the efficiency measure.
3. Incremental cost, or cost add to include the efficient measure in the project.
4. Estimated energy savings, time of use energy offset, or energy increases. This should be presented as kWh, kW, MMBtu, gallons of fossil fuel savings including fuel type, and gallons of water.
5. Explanation of the Loadshape: when these energy savings will occur throughout the day, week, year.
6. Description of any electric load shifting, if applicable.
7. Explanation of any expected change in operation and maintenance costs associated with the efficiency measure, whether increased or decreased.
8. Explanation of any expected change in productivity/output resulting from the project, if applicable.

## **Savings Verification**

ESA projects are to follow similar project documentation and standards requirements in support of savings verification standards as required by the Vermont Energy Efficiency Utilities ("EEOs") for other efficiency projects. This document outlines the measure technologies that are typically found in energy efficiency projects and the documentation needed to substantiate savings claims and verification of measure installs. In addition to more traditional electric and thermal-energy and process-fuels efficiency projects, additional categories are allowable under the ESA Pilot program. Documentation needs for non-traditional projects that are not currently within the scope of the existing energy efficiency projects (i.e., Energy Productivity, Demand Management, and Battery Storage) will be assessed on a case-by-case basis.

The following information needs to be provided, as it will be used by external evaluators to verify the savings claims for ESA projects.

### Measure Analysis

- Provide the analysis of savings, including, as applicable, any metered data, building management screen shots and/or trends, and/or other relevant data used in the analysis or used to confirm the savings.

### Project Overview

The project overview is a narrative that outlines the parameters of the project and assumptions used to calculate savings based on the upgrades.

- Describe the customer and the facility (type of business, building type, building size, primary business operations)
- Describe the scope of the project
- Describe the customer's goals for the project
- Describe the measure scope of work, savings baseline, and efficient condition. Include how savings are calculated, assumptions, and link relevant documents
- Describe the basis of the measure analysis inputs (operating hours, schedule, load profile, efficiencies, etc.)
- Identify the heating fuel type if applicable, as well as historical electric and fuel usage
- Describe how the projected savings relate to the historical usage (% reduction)
- Describe the source of the measure or project cost
- Document any other information that will help a reviewer understand where assumptions came from or other unique aspects of the operations of the measures in the facility

### Measure Technology Verification

The following information is used to confirm that the efficient equipment has been installed and is operating as assumed in the analysis.

HVAC Equipment, Appliances, Etc.

- Please provide detailed invoices with quantities, make/models, and costs OR provide photos of nameplates with model numbers, along with Inspection notes verifying the quantities.

Controls and Process Equipment

- Invoice or photo of model number if possible
- Photo of control/output screen if applicable, preferably showing the actual readings (percent flow, kW, cfm, pressure, indoor/outdoor temperature, throughput, or other quantities of relevant units)
- Describe how systems are configured and controlled, to confirm that the system is operating according to the assumptions (e.g., VFD settings and inputs, boiler/compressor/pump/fan sequences, ventilation rates, etc.)
- Inspection notes confirming that field findings match assumptions or how installation differs from what was expected

Lighting

- Preferred option: detailed invoice with manufacture and model numbers, shown to match the assumptions in both quantity and specifications
- Photos are helpful but not definitive, unless photo shows the model number (e.g. photo of packing slip or box indicating contents make/model.)
- If no invoice, then inspection notes confirming counts of fixtures/lamps, and that the model numbers of installed equipment matches what was expected
- Confirmation that hours of operation are accurate for each space
- Show evidence of counting to verify the installed quantity on inspection form, scan form used on site into project file

#### Repairs (Steam Traps, Compressed Air, Etc.)

- Obtain and save to project file a detailed audit of the equipment that needs to be repaired or replaced
- Supply an invoice or completed work order for the repair work, or some item-by-item documentation that the repairs were done (such as a checklist based on the audit, with notes on what was done for each)

#### General

- The above applies equally to small and large projects, and to modeled buildings, etc.
- When invoices and similar documentation are not available, please provide inspection notes on what you observed, including counts and model numbers
- If numbers of measures are too large to check all of them or to do an accurate count, and invoices are not available, choose a sample or subset to check. The sample/subset should be large enough to provide a reasonable assurance that it is representative of the whole building
- Make adjustments to savings if necessary if something different was installed. If only a subset was checked, assume that they represent similar changes in the rest of the building and adjust accordingly.

#### Modeled Projects

- For energy modeled projects, or any place where we have measures that cover a number of different types of equipment, the engineer should create a list of equipment that is expected to be installed, and it should be confirmed that all of these have been installed.
- The final energy model must reflect the building features as verified by a third-party (e.g. rater, commissioning agent). At the final inspection, any features of the building that are determined to be different from the as-designed plans (used in the energy model, based on the design drawings) must be communicated to the energy modeler. The energy modeler must then create a final "as-built" revised energy model based on the updated information from the final verification.