



Executive Summary

National Grid offers EWSF to help customers who live in one- to four-unit residential buildings in Rhode Island improve the efficiency of their homes. The program offers whole-home energy assessments during which trained assessors and technicians directly install a variety of no-cost efficiency measures and identify opportunities for larger energy saving improvements such as weatherization (i.e., air sealing and insulation). In 2019, EWSF completed more than 12,000 home energy assessments and helped more than 3,000 customers insulate their homes.

Why Evaluation?

National Grid uses evaluation to retrospectively assess the performance of its programs and estimate future program savings. In March 2020, National Grid contracted with Cadeo and ILLUME Advising, third-party energy efficiency program evaluators, to complete an impact and process evaluation of EWSF 2017-2019 program years. The evaluation produced verified energy savings for every EWSF measure, and yielded insights and recommendations National Grid can use to continue improving the program.

Key Impact Findings

The evaluation team used three complementary methods - billing analysis, engineering algorithms, and building simulation - to determine savings for every EWSF measure. The program's key measures are lighting (LED bulbs and fixtures) and weatherization, which collectively generated more than 80% of the program's annual 2019 savings.

- Estimated Savings
- Evaluated Savings
- Direction of Change



LED Lighting

Based on an electric billing analysis, net per-unit savings for LED lighting (18 kWh for the most installed bulb type) are lower than National Grid planned. The evaluation also found that installation rates are dropping; assessors are finding less inefficient lighting (incandescent and halogen bulbs) to replace with program LEDs. In fact, after representing 47% of total EWSF savings just three years ago, lighting made up just 25% in 2019.

33-38
kWh/year/
bulb

15-34
kWh/year/
bulb



Weatherization

The evaluation's billing analysis showed that participants who weatherized their homes saw lower-than-anticipated gross energy savings (96 therms/year vs. the 108 therms/year planning estimate). The evaluation found a net-to-gross ratio of 87%, indicating that most participants would not have weatherized their home if not for EWSF. Weatherization, particularly for oil heated homes, has become a larger contributor to overall program savings in recent years.

108
therms/
year/home

96
therms/
year/home



Key Process Findings

Process evaluation activities found that the program is performing at a high level. Participants expressed satisfaction with EWSF (91%), saying that they had a positive experience "from start to finish" and stakeholders appreciate how well the program is managed and delivered to customers. In-home assessments ran smoothly in 2019, as did virtual assessments, which the program rolled out in response to the COVID-19 outbreak. The effectiveness of virtual assessments compared to in-home assessments is still to be determined; however, stakeholders are optimistic that virtual assessments will have a long-term role in EWSF by providing National Grid an opportunity to customize the program to meet different customer needs.