

Executive Summary

RI-23-RX-EnergyWisePY21

Cadeo's impact evaluation of Rhode Island Energy's EnergyWise Single Family (EWSF) program focused on updating the gross energy savings for EWSF's weatherization (i.e., air sealing, duct sealing, and insulation) measures. This evaluation accounts for the full range of weatherization energy impacts including savings associated with primary heating fuel and, when relevant, secondary heating, cooling, and furnace fan usage.

Methodology

① Primary Heating

Cadeo completed a billing analysis for participants that primarily heated with natural gas. Cadeo applied a series of engineering adjustments to leverage the results of the natural gas billing analysis to estimate savings for weatherized participants that primarily heat their homes using electricity or a delivered fuel (i.e., heating oil or propane).

② Secondary Electric Heating

Cadeo conducted an additional electric billing analysis focused on primary gas heated participants that self-identified as using secondary electric heating via a participant survey.

The evaluation includes savings estimates for participants that heat with:



Natural Gas



Electricity



Delivered Fuel
(heating oil or propane)

Key Findings:

The evaluation found higher weatherization savings than the previous evaluation for participants that heat their homes with natural gas or a delivered fuel (realization rates of **138%** and **126%** respectively), which collectively represent over 90% of weatherized EWSF participants. On average, 2021 natural gas weatherization participants installed more types of insulation (i.e., attic, wall, and floor each counting as 1.0 insulation type) in their home relative to participants in 2017-2018. For example, the average 2021 participant installed **2.11** types of insulation – up from 1.88 in 2017-2018. Most of the difference comes from a jump in percentage of participants that installed wall insulation, which increased from 43% to **62%**. The evaluation team found slightly lower savings – again relative to the previous evaluation – for the small number of electrically heated weatherization participants (**91%** realization rate). The team also found weatherization had small but observable decreases in participants' use of secondary electric heating sources.

Recommendations:

The evaluation team recommends that Rhode Island Energy collect and provide evaluators with the following data not available to our team: pre-program R-value by location (e.g., attic, wall, floor), pre- and post- CFM-50 data for air sealing, type of primary heating equipment by fuel type, presence and type of secondary electric heating equipment, and seasonal occupancy flag (e.g., number of months unoccupied, when relevant).