



National Grid Rhode Island Income Eligible Services Process Evaluation

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Final

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Table of Contents

Executive Summary.....	1
Process Evaluation Activities	1
Introduction	7
Program History	7
Research Approach	8
Research Questions	8
Materials Review	9
Stakeholder Interviews.....	10
Logic Model	10
Participant Phone Surveys.....	11
Sampling Approach	11
Detailed Findings.....	12
Program Administration	12
Program Funding.....	12
Program Goals	13
Process Goals	16
Program Delivery.....	17
Participant Recruitment.....	19
Home Audit.....	20
Measure Installation	29
Data Tracking	29
Invoicing	30
Quality Control.....	30
Marketing	31
Satisfaction	32
Measure Satisfaction	32
Program Satisfaction.....	37
Program Theory.....	40

Executive Summary

This report details the 2014 process evaluation of National Grid's Income Eligible Services (IES) Program in Rhode Island, as implemented between 2011 and 2013. The evaluation sought to document program processes and procedures, determine opportunities for improvements, and assess the success of program transitions instituted by National Grid and the new program implementer, CLEAResult.

Program Description

National Grid's IES Program helps income-eligible customers reduce their utility costs, save energy, and increase their knowledge of energy efficiency. IES targets customers eligible for the Low Income Heating Assistance Program (LIHEAP)¹ and living in one- to four-unit residences within National Grid's Rhode Island service territory.

The program offers customers three categories of services:

1. **Weatherization and Heating Upgrades:** National Grid funds home improvements, such as: attic, wall, floor, and pipe insulation; air sealing; and heating system repair or replacements.
2. **Lighting and Appliance Upgrades:** Through National Grid's Appliance Management Program (AMP), customers receive direct-install measures, such as compact fluorescent lamps (CFLs), faucet aerators, and showerheads. In addition, AMP auditors monitor participants' refrigerators and freezers; units with usage over a threshold amount may be replaced with new efficient units.
3. **Energy Education:** AMP auditors work with participating customers to devise plans for adopting energy-conservation behaviors, such as hanging laundry on a clothesline instead of using a dryer or turning off lights and televisions in unoccupied rooms.



Customers qualifying for LIHEAP become eligible for all IES Program services and receive all equipment upgrades at no cost. Customers not qualifying for LIHEAP but eligible for National Grid's residential low-income discount rate (A-60)² become eligible to receive AMP services at no cost. Local Community Action Program (CAP) agencies deliver all program services, with installation of weatherization measures completed by agency subcontractors. CAP agencies leverage federal Weatherization Assistance Program (WAP) and LIHEAP funds, in addition to National Grid funding, to deliver higher service levels to customers and to more broadly offer weatherization in their communities.

Process Evaluation Activities

Cadmus based the findings, conclusions, and recommendations presented in this report on analysis of data collected through the following research activities:

¹ <http://www.energy.ri.gov/lowincome/incomeguidelines.php>

² National Grid customers receiving benefits (such as Supplemental Security Income, LIHEAP, Medicaid, Food Stamps, General Public Assistance, or Family Independence Program Assistance) become eligible for the A-60 rate.

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- Research question development
 - Materials review
 - Stakeholder interviews (n=24)
 - Logic model development
 - Participant phone surveys (n=120)

This report's Research Approach section presents further explanation of the process evaluation activities and research methodology.

Summary of Key Findings, Conclusions, and Recommendations

This section presents Cadmus' key findings, conclusions, and recommendations, derived from the process evaluation analysis and prioritized by importance. This report's Detailed Findings section presents further explanation regarding findings.

The majority of program stakeholders expressed satisfaction with CLEARResult's role as lead vendor.

National Grid expressed great satisfaction with program implementation following CLEARResult's assumption of the lead vendor role. CLEARResult, National Grid, and the Department of Human Services (the State) expressed high satisfaction levels with the current communications among program stakeholders and agreed benefit resulted from the more collaborative approach taken by program administrators upon hiring CLEARResult as lead vendor in 2013.

The majority of the CAP agencies expressed high satisfaction with the program administration change, indicating program communication and quality levels increased. All CAP agencies agreed the greatest benefit from National Grid hiring CLEARResult arose from substantial improvements in the reimbursement payment cycle.

Participants are satisfied with the program.

Almost all surveyed participants expressed strong satisfaction levels with all aspects of their program experiences (these included CAP agency staff, measures installed, and services provided through the program). Further, a majority of participants reported more affordable energy bills following work performed in their home, and claimed their home became more comfortable due to the work.

An immediate need exists for standard program policies and procedures.

When CLEARResult joined the program as lead vendor, it brought an added level of quality control (QC) to the program by increasing monitoring levels. However, the CLEARResult monitor and the State monitors often expressed differing opinions regarding weatherization best practices, and program policies and procedures, causing frustration among auditors and contractors that received conflicting advice regarding how to best serve a home. Consequently, the CAP agencies and contractors did not always retain a clear understanding of program requirements and installation protocols.

In 2014, CLEAResult and the State began working collaboratively to standardize the program's auditing and installation protocols. Currently, they are developing an IES program manual, detailing the program's policies and procedures.

Recommendations:

- ***Prioritize finalization of the IES program manual.*** The final program manual should include standard procedures for: conducting the AMP and WAP audits, determining which program measures to recommend, and proper measure installation. The program manual should reflect the protocols taught through the program's required Quality Control Inspector (QCI) training. The CAP agencies should receive documented program protocols, accepted by National Grid and the State, no later than the end of the 2014 program year.
- ***Update the IES program manual on an annual basis.*** The program manual should be updated annually to reflect changes in program design, delivery, or implementation (e.g., program processes, measure offering, and installation protocols).

CFL installation protocols may impact program savings.

CLEAResult and the CAP agencies reported the IES Program's CFL installation protocol allowed AMP auditors to install as many CFLs in a house as possible, independent of bulb locations or usage. However, the AMP program manual states light bulbs used most often should receive the highest priority for replacement.

CFL savings largely depend on hours-of-use (HOU). The prevailing evaluation theory holds that HOU decreases as a greater number of bulbs become installed within a home. For example, as CFL saturation in a home increases, HOU decreases as bulb installations occur in less frequently used locations.

CAP agency staff also reported leaving CFLs with residents to install on their own. Some auditors also reported leaving behind the resident's incandescent bulbs, in case the resident did not like the CFLs. Most direct-install energy-efficiency programs provide CFLs to customers, but contractors generally install the CFLs and remove incandescent bulbs from homes. In Cadmus' experience, not physically installing energy-efficient bulbs (i.e., leaving bulbs for the customer to install) and leaving existing (inefficient) bulbs behind can negatively impact CFL savings.

As of this report, National Grid staff indicated they are considering offering a combination of LED and CFL bulbs in participant homes, installing LEDs in high-use locations and CFLs in other locations.

Recommendations:

- ***Revise the CFL installation protocols to maximize the IES Program's potential for savings.*** The following requirements should be considered when revising the protocols:
 - Prioritize installing CFLs in areas with the highest traffic levels (e.g., kitchens, dining rooms, and living rooms) and nighttime use (e.g., exterior fixtures).



- Avoid installing bulbs in locations with below-average HOU (e.g., closets, unfinished basements, attics, and crawlspaces).
- Require agency staff to install CFLs provided to customers and to remove replaced incandescent bulbs from the home.
- Limit the number of CFLs installed per home.
- **Standardize CFL installation protocols across all program operations materials.** The AMP program manual and the new IES program manual should reflect the revised CFL protocols, with all conflicting information removed to reduce confusion among program stakeholders.

Appliance metering protocols may be insufficiently comprehensive to accurately estimate savings.

To estimate the savings that result from replacing an existing refrigerator/freezer with a new, energy-efficient model, AMP auditors meter electricity usage of a unit during audits. The CAP agencies reported they typically metered appliances for 75 minutes; Cadmus has found, however, many low-income weatherization programs require auditors to meter existing appliances for at least two hours to gather accurate data for determining replacement eligibility. The U.S. Department of Energy (DOE) determined two-hour metering sufficient to make cost-effective refrigerator and freezer replacement decisions.³

Recommendation:

- **Consider requiring AMP auditors to meter appliances for at least two hours.** Cadmus' gross impact evaluation of the 2011–2012 IES Program found per-unit refrigerator savings lower than in-program audit metering data suggested. Standardizing the appliance metering protocol to match DOE's program requirement should increase per-unit savings due to better identification of units for replacement.

Not all CAP agencies distribute energy-saving hot water measures to participants.

Although National Grid permits installations of direct-install measures, including energy-saving lighting and hot water measures, only one-half of the CAP agencies reported installing program-eligible faucet aerators, showerheads, and pipe wrap. According to the CAP agencies, the hot water measures exhibited quality issues, the agencies hesitated to install the equipment, fearing customers' dissatisfaction. Only 7% of IES Program participants received faucet aerators and/or showerheads through the program.

Recommendation:

- **Consider requiring CAP agencies to install all direct-install measures, standardizing the customer experience.** Measures such as showerheads and faucet aerators provide a low-cost mechanism to achieve deeper per-home savings.

³ http://www.waptac.org/data/files/Website_Docs/technical_tools/toolkit07.pdf

- **Provide high-quality hot water measures.** Programs commonly offer standard, inexpensive hot-water measures. Hot-water fixtures offered through the program should be tested, with use of high-quality fixtures encouraged as an upgrade for participants (leading to higher measure retention levels).

National Grid employs lower-than-average health and safety fund limits, in comparison with other low-income weatherization programs across the country.

The CAP agencies reported differing protocols regarding health and safety measures. One-half of the CAP agencies said National Grid does not fund health and safety measures, while the other half noted National Grid funded these measures up to \$500 per home.

National Grid's funding of \$500 per home is lower than similar low-income weatherization programs. With the State's federal funding continuing to decrease each year, all CAP agencies and CLEAResult reporting a desire for National Grid to allocate a greater amount of funding for health and safety.

Recommendation:

- **Consider increasing the IES Program's health and safety fund limits.** Any changes made should ensure the IES program manual includes updated health and safety protocols, ensuring all CAP agencies clearly understand National Grid's budget restrictions.

The State's shift to Hancock Software slows IES Program production.

According to the CAP agencies, the switch from CAPTAIN to Hancock Software (Hancock) presented one of the greatest challenges facing the 2014 IES Program. Although the State provided training for the new database, the CAP agencies did not find the training helpful and still continue to experience difficulty in understanding how to use the new system. As a result, data tracking takes much longer than in the past. The agencies reported that data collection with CAPTAIN ranged from 15 to 40 minutes, but data collection in Hancock ranged from one to two hours per project, due to many technical glitches in the software and the learning curve involved with adapting to a new system. Agency staff reported the Hancock challenges have slowed production for the auditors.

Recommendation:

- **Monitor the CAP agencies' concerns with Hancock to minimize its impact on IES Program production.** Encourage the State to provide a forum (e.g., Weatherization Technical Committee [WTC] meeting) for the CAP agencies to share their issues with Hancock. State staff could use this time to formally identify all CAP agencies' issues and to submit these directly to the Hancock developers. This will help the auditors feel their concerns are heard and will help organize and prioritize issues for Hancock to address.



Issues with technology can frustrate auditors in the field.

While on site, AMP auditors use laptops and wireless air cards to connect to the Internet and enter audit data into National Grid’s proprietary, web-based InDemand software. One-half of the CAP agencies reported experiencing frequent connectivity issues in the field.

Additional technology issues arose when the State rolled out Hancock without access to a handheld device; so the auditors could not use the software in the field. Unlike auditors’ use of the National Energy Audit Tool (NEAT), they currently collect data on paper and manually enter it into Hancock upon their return to their offices.

Recommendation:

The CAP agencies’ concerns regarding connectivity should continue to be monitored, and the technology used by auditors in the field should be updated as needed. Field analysts in similar programs delivered across the country commonly face issues with technology. As technology barriers can impact an auditors’ weekly production, back-up protocols should be in place to streamline the data collection process (e.g., alternative hot spot devices, up-to-date paper copies of audit checklists, and energy education questionnaires).

As of this report, National Grid staff have conducted meetings with CAP agency staff, in part to discuss the agencies’ technology issues, and indicate they will continue to monitor agency concerns in this area. In addition, program staff reported offering agencies access to hot spot technology to help address the problems with air cards in the field.

Participants are not aware that National Grid sponsors IES Program services.

Participants expressed below-average awareness of National Grid’s program sponsorship, in comparison to levels participants exhibited in other recent low-income weatherization evaluations across the country.

Recommendation:

- ***Increase National Grid sponsorship awareness through leave-behind materials.*** To help increase participant awareness of utility program sponsorship, National Grid-branded materials or products should be developed for the CAP agencies to leave behind with participants. Items other utilities provide include branded LED nightlights and refrigerator magnets offering energy-saving tips.