

**New Hampshire  
Low-Income Retrofit Program  
Process Evaluation**

**Final Report**

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## TABLE OF CONTENTS

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>I</b>
<b>2</b>	<b>INTRODUCTION.....</b>	<b>1</b>
2.1	STUDY GOALS AND OBJECTIVES .....	1
<b>3</b>	<b>PROGRAM DESCRIPTION.....</b>	<b>3</b>
3.1	OVERVIEW .....	3
<b>4</b>	<b>EVALUATION METHODOLOGY.....</b>	<b>5</b>
4.1	PROGRAM DOCUMENTATION AND TRACKING SYSTEM REVIEW .....	5
4.2	STAFF AND DELIVERY PARTICIPANT INTERVIEW METHODOLOGY .....	6
4.3	PROGRAM PARTICIPANT SURVEYS.....	7
<b>5</b>	<b>RESULTS .....</b>	<b>9</b>
5.1	PROGRAM ACTIVITY AND GOAL ACHIEVEMENT TO DATE .....	9
5.1.1	Program Progress, Energy Savings Goals and Achievements.....	9
5.1.2	Program Participation .....	11
5.1.3	Program Spending.....	13
5.2	RESULTS OF DATA COLLECTION ACTIVITIES .....	16
5.2.1	Marketing, Recruitment, and Intake .....	16
5.2.2	Work Scheduling .....	24
5.2.3	Audit Performance and Software.....	27
5.2.4	Provision of Services and Installation of Measures.....	31
5.2.5	Quality Assurance and Job Closeout .....	38
5.2.6	Satisfaction Levels .....	41
5.2.7	Impact Evaluation Considerations .....	43
5.2.8	Comparison of Program Offerings.....	44
5.3	CONCLUSIONS AND RECOMMENDATIONS.....	47
	<b>APPENDIX A: SAMPLE MARKETING LETTER .....</b>	<b>60</b>
	<b>APPENDIX B: REVISED HOME ENERGY ASSISTANCE BROCHURE .....</b>	<b>61</b>
	<b>APPENDIX C: READABILITY TESTS AND PLAIN LANGUAGE USAGE .....</b>	<b>62</b>
	<b>APPENDIX D: SAMPLE PASSAGES FROM THE HOME ENERGY ASSESSMENT PRINTOUT SCORED FOR READABILITY, WITH SUGGESTED ALTERNATIVES .....</b>	<b>63</b>
	<b>APPENDIX E: PARTICIPANT SURVEY RESPONSES AND FREQUENCIES.....</b>	<b>65</b>

**TABLE OF TABLES**

Table 1: Program Delivery Organization Interviewees .....	7
Table 2: Verification of Final Sample Representativeness.....	8
Table 3: Summary of Program Goals and Actual Energy Savings.....	10
Table 4: Summary of Program Goals and Actual Energy Savings.....	10
Table 5: Annual Energy Savings by Contractor Coordinator .....	11
Table 6: Summary of Participant Goals and Levels by Utility .....	12
Table 7: Summary of Participant Goals and Levels by Contractor Coordinator .....	12
Table 8: Fully Funded DOE/WXN Households by Community Action Agency.....	13
Table 9: Summary of Goals and Expenditures by Utility.....	14
Table 10: Summary of Expenditures by Contractor Coordinator .....	14
Table 11: Summary of Non-Core Funding Levels .....	15
Table 12: Program Measure Expenditures by Utility and Resource.....	16
Table 13: Estimated Number of Electrically Heated Homes in Target Market.....	19
Table 14: In-Depth Interviewee Perceptions of Reasons for Non-Response .....	21
Table 15: Non-English Speaking Customers by County .....	22
Table 16: Adult Functional Literacy Rates .....	23
Table 17: Readability Ease and Grade Level Assessment.....	24
Table 18: Program Lag Time Goals.....	35
Table 19: Lag Time By Contractor Coordinator.....	38
Table 20: Participant Survey Average Ratings of Auditor Visits.....	42
Table 21: Participant Survey Average Ratings of Subcontractor Visits.....	42
Table 22: Frequency of Measure Installation .....	44
Table 23: Program Comparison to Similar Programs.....	46
Table 24: Summary of Readability Scores – current and suggested materials.....	50

**TABLE OF FIGURES**

Figure 1: Low Income and DOE/WXN Relationship.....	4
Figure 2: Job Process Lag Time Comparison .....	37
Figure 3: Old “Assembly Line Model” of QA .....	40
Figure 4: Current Program QA Process .....	40

## **1 EXECUTIVE SUMMARY**

This report summarizes activities completed in the process evaluation of the New Hampshire Low Income Program. RLW Analytics, Inc. (RLW) has performed this evaluation with Bob Reals, Jr. of Business and Energy Services, who has acted as a sub contractor in select elements of the study. The purpose of this report is to document program progress to date and support the continued effective implementation of the New Hampshire Low Income Program.

### **Study Objectives**

The overall goal of the study as stated in the RFP and verified at the kickoff meeting, is to “perform a process evaluation of the low-income residential retrofit program. The interest...is to identify and implement any process enhancements to improve program delivery to ensure goals will be met,” including kWh savings and participation levels.

There are nine objectives in this study, each of which was relatively broad in nature. The objectives of this study are broadly presented below:

- Evaluate the effectiveness of the marketing approaches and recruitment processes;
- Evaluate the delivery process of each step of the program process;
- Evaluate the project screening process as it is performed in the TREAT and OTTER system, including projected and actual measure mix installed;
- Evaluate satisfaction among the parties in program operations;
- Identify best practices among the program delivery organizations;
- Assess program strengths and weaknesses;
- Identify barriers to participation; and
- Develop appropriate recommendations.

### **Study Methods**

This evaluation consisted of three primary data collection activities. Specifically, the key elements of the Low Income Process Evaluation included a program documentation and tracking system review, a series of program delivery organization interviews (22), and the performance of 88 program participant interviews.

#### Program Documentation and Tracking System Review

One of the first steps in the evaluation was to gain an understanding of the Low Income Program by reviewing all program materials. Following the overall program materials review, the tracking data was reviewed to determine its effectiveness for program management, control, and evaluation. The key elements of the tracking system assessment included:

- A review of the database information; identification of inconsistencies and potential misinformation.

- A review of the frequency with which different measures are installed, to determine the comprehensiveness of measure installation through the program.
- A review of the lag times of participant experiences with program stages.

### Staff and Delivery Organization Interviews

A total of 22 Staff and Delivery organization interviews were performed in support of this study. These interviews were conducted with the program administrators at each utility, the community action agencies, as well as other collaborating parties such as Governors Office of Energy and Community Services (ECS), Save Our Homes Organization (SOHO), and Office of Consumer Advocacy (OCA). The primary objectives of the interviews were to gain a thorough understanding of the program and to identify opportunities for improvements in program delivery and production. A semi-structured interview guide for the in-depth interviews was developed to focus on the researchable issues identified in the RFP and further refined at the kickoff meeting. Most in-depth interviews were conducted in person, with some performed over the telephone.

### Program Participant Surveys

A total of 88 participant surveys were conducted in support of this study. The participant sample frame was developed from OTTER and was defined to include all projects listed as “Completed” in the OTTER system, and therefore did not include customers currently in the program process nor any of the small group of customers who declined to install measures following the performance of an audit. Sampled participants were randomly selected.

## **Study Results**

The following section highlights major study results and provides recommendations as appropriate. The conclusions and recommendations are provided by program activity. As this evaluation is concurrent with program implementation, some of these recommendations may be underway or completed by the utilities before this study's publication. We have provided those recommendations that we feel are of higher priority in this executive summary, although a full set of recommendations are provided in the main report.

### Study Results Synopsis

This evaluation revealed that the current New Hampshire Low Income program appears to be achieving substantial energy savings among the low income market. While overall participation rates and savings are not as high as expected at this stage in the program, recent increases in participation rates and opportunities for ongoing program improvements suggest that the program will achieve its lifetime energy goals. Program management and communication processes are in place to effectively guide the program's ongoing development, and the management of the program at this time appears to be sound. Overall, contractor coordinators are delivering the program well, and are installing comprehensive measure packages. Participants are satisfied with the program, and the vast majority indicates that the program met or exceeded their expectations.

However, below RLW proposes modifications to refine each aspect of program delivery. We feel that although the program is functioning well, each of these recommendations would improve the program process and leverage identified opportunities for enhanced goal achievement.

Program Activity and Goal Achievement to Date

Table Ex 1 presents program lifetime kWh and participant goals by utility. The data presented in the ‘completed’ columns reflect program achievement through May 7, 2003. The program has a total lifetime goal of 51,299 MWh of electrical savings and has achieved 20,589 MWh of electrical savings. Savings to date represents over 40% of the total program goal. Similarly, the program goal for completed participants is 1,252. Through May 7<sup>th</sup>, there are 699 customers in OTTER, comprised of 301 completed participants and 398 customers either assigned or in progress.

Utility	Lifetime kWh		Participant		
	Goal	Completed	Goal	Completed	Assigned or in Process
New Hampshire Electric Cooperative	1,886,313	1,160,404	153	23	23
Connecticut Valley Electric Co.	393,107	147,833	57	16	24
Granite State Electric	775,667	339,208	73	17	11
Unitil Energy Systems	7,701,895	304,065	134	7	79
Public Service New Hampshire	40,541,598	18,636,998	835	238	261
<b>Total</b>	<b>51,298,580</b>	<b>20,588,508</b>	<b>1,252</b>	<b>301</b>	<b>398</b>

**Table Ex 1: Summary of Program Goals and Achievement**

The following are the primary conclusions and recommendations of this study. It should be noted that this evaluation is concurrent with ongoing program implementation and refinement, so some of these recommendations may already be underway prior to this study’s publication.

Program Marketing and Recruitment Conclusions and Recommendations

While there does not appear to be any particular marketing element that stands out as a significant problem, there are several opportunities for marketing improvement.

1. Overall Conclusion: Generally, the program activity to date gathered from OTTER suggests that the program is achieving the targeted annual savings per home, but is spending less than expected per home. The fact that savings are being achieved at less cost than planned may be, in fact, a positive outcome to report to the PUC at this time.
2. Overall Conclusion: At the outset of the study, the utilities asked for an assessment of the level of non-response to their marketing efforts on their ability to achieve their program goals. In reviewing the number of completed homes to date for each utility, the number of households in the process of the program (or assigned) and the work being performed to bring multifamily units into the program in the coming month, the non-response rate does not appear to jeopardize reaching the program participation

and energy savings goals. This conclusion assumes that the CAAs will successfully provide the leads and audits for the DOE/WXN sites.

3. Conclusion: While the primary mechanism for recruitment is through direct mail, a best practice identified for marketing includes a highly successful approach that several utilities and CAAs are using that includes telemarketing as part of their marketing efforts. Recommendation: *For utilities that need higher response rates to meet program goals, follow-up non-responsive direct mail marketing with a phone call solicitation.*
4. Conclusion: Currently, PSNH, Unitil and NHEC are targeting electrically heated homes. CAAs have indicated that the utilities have enough money available to pursue all households in need, but the limitations in eligibility seem to cause some barriers to moving into the broader available field and performing audits. However, other data from OTTER on the current level of assigned projects and goal achievement among the CAAs who cited this issue suggest that this is not a significant problem at this time. Recommendation: *Regularly track and review assigned workloads to CAAs to assess appropriateness of target market.*
5. Conclusion: Negative perceptions of the recruitment tools may be a barrier to program recruitment, so it may be conversely true that a positive emotional appeal may bring more opportunities. Recommendation: *Create a recruitment letter that appeals to potential participants.*
6. Conclusion: It could be useful to consider the likely literacy level of the target audience in the marketing (and educational) materials. As discussed earlier, this target audience may have literacy levels different from the average of the entire state population. Recommendation: *Create a recruitment letter that is minimally geared to standardized literacy levels and optimally matched with the average level of literacy in the targeted population.*
7. Conclusion: Some interviewees indicated that the landlord tenant agreement is a barrier to the intake process of multifamily units. The execution of this document is needed to assign these facilities to contractor coordinators. Recommendation: *Make landlord/tenant agreements for multifamily units a top priority. The utilities should finalize and execute agreements among recruited multifamily facilities. Similarly, CAAs should execute agreements with multifamily facilities they recruit.*

#### Work Scheduling Conclusions and Recommendations

1. Overall Conclusion: As part of the interview process, a “Memo of Understanding” was brought to our attention. This memo was reportedly verbally agreed to in principal, although it was never formally executed. This memo provides action items and activities intended to assist the CAAs in pooling resources and tracking program activities as compared to program goals. We believe the substance of the memo provides promising ideas to help the CAAs work together both independently and collectively to ensure resources are available to meet program needs.

2. Conclusion: The memo of understanding that has been verbally agreed to between ECS and CAAs, provides several opportunities for the CAAs to operate collectively and independently to meet program goals. Recommendation, Priority A: *To the extent that the memo has been verbally agreed to, the development of an oversight committee, the development of a monthly deliverable from the ECS (or OSP) to the CAAs on progress toward goals and the opportunity for the CAAs to contact other weatherization program sub-grantees for assistance in meeting program goals should be implemented.*
3. Conclusion: Electricians, air sealing, and insulation subcontractors were reported to be the most needed subcontractors at this time, and the utilities are currently identifying and building relationships with potential sub contractors. Recommendation: *Pass interested subcontractors on to the CAAs for use.*
4. Conclusion: With the exception of Strafford County Communication Action (which only has 18 households in production at this time), all other CAAs have at least 35 sites either assigned or in production. However, several CAAs have indicated that they do not have enough leads. Recommendation: *Reinforce use of OTTER as a communication tool for identifying projects that are delayed so utility administrators are aware of actual work levels and can pass on new leads as appropriate.*
5. Conclusion: While the program was designed for implementation through CAAs, provisions were established to assist the utilities in meeting program goals through other contractor coordinators in the event of slow downs in production. However, these non-CAA contractors do not have the same level of access to DOE funds for health and safety measures. To date, all health and safety measures identified by non-CAA contractors have been absorbed into the household level BC ratio, which detracts from the overall program cost effectiveness. Recommendation: *Consideration should be made for a formal pool of program level funds for non-CAA contractors to address health and safety measures outside of the B/C ratio.*
6. Conclusion: Several CAAs reported that the uncertainty associated with program implementation beyond December, 2003 is causing concern about ramping up resources for production needs that may diminish in the near future. Recommendation: *Decisions on future program operations beyond December, 2003 should be determined and provided to the CAAs to assist them in planning staffing levels.*

#### Audit Performance and Software Conclusions and Recommendations

1. Conclusion: Originally, the full auditing process was envisioned to occur on-site. Actual program operations have the onsite audit recorded on paper, and manually transferred later into TREAT. TREAT does have the ability to be used on-site, but interaction with OTTER is needed to finalize measure packages, which does not allow the fill auditing process to occur on-site. Interviewees reported that this method causes several problems with the program process. Recommendation: *To the extent*

*that the software developer has committed to providing this capability, the full use of TREAT to finalize measure packages on-site should be made available as an option to contractor coordinators.*

- 2 Conclusion: Some interviewees indicated that TREAT occasionally returns savings estimates that do not appear correct, which was also evidenced in reviewing data from OTTER. It was noted that average thermostat savings per home and window weatherstripping savings are higher than expected. Recommendations: *Instances where savings differ dramatically from slight changes in installation quantity should be documented and recreated for the software vendor to review. Consider having flags to ward users of TREAT when measure savings exceeds a reasonable threshold of home consumption. Consider an independent audit of the savings calculations in TREAT in lieu or in addition to an impact evaluation.*
- 3 Conclusion: OTTER has minimal reporting functions available for management and goal progress purposes. Recommendation: *Create a function in OTTER that provide an up-to-date, easy-to-use, and easily transferable report on the program's status, in addition to the entire program population for tracking purposes.*
- 4 Conclusion: OTTER has a dedicated appliances module in its customer report. However, it was noted in an interview that OTTER was intended to have a more modest appliances module integrated with appliance and home specific action items for participants to undertake. Recommendation: *Similar to the above recommendation, the utility program administrators should set an improvement goal with the software contractor to improve the appliance module.*
- 5 Conclusion: Some utilities are not requiring full TREAT models of piggybacked DOE/WXN sites where CORE funding is being used to install a baseload measure. Some contractor coordinators indicate that building the TREAT models can be highly time consuming. Recommendation: *Explore ways to streamline the data entry process into TREAT/OTTER for simplified baseload audits. Ideas include using template homes, using default assumptions, or allowing contractor coordinators the option to perform partial modeling for baseload measures.*

#### Provision of Services and Measure Installation Conclusions and Recommendations

1. Overall Conclusion: The breadth of measures offered of the New Hampshire program is comparable to and exceeds that of similar programs reviewed as part of this study. The installation rates of measures in the New Hampshire program are better than that of similar programs. Satisfaction levels with auditors and subcontractors were noted to be very high for professionalism and overall service.
2. Conclusion: The measure screening process currently uses a single set of end-use assumptions regardless of the actual break out of end-use savings associated with the measure improvement. Recommendation: *Assess the possibility of applying individual end-use assumptions at the end-use savings level.*

3. Conclusion: Program caps on total expenditures per customer was cited as causing some sites to not have all measures installed that are identified as cost effective. Recommendation: *On a case-by-case basis, consider exceptions to the program caps.*
4. Conclusion: Some contractor coordinators appear to have project timelines that exceed the ten-week timeline presented in the program manual, and sometimes exceed twelve weeks. Recommendation: *Make contractor coordinators aware of instances where projects exceed the timeline outlined in the program implementation manual, and have OTTER prioritize projects for contractors in a way that provides the longest days in process jobs first.*

#### Quality Assurance and Job Closeout Conclusions and Recommendations

1. Overall Conclusion: Based on our interviews and observations during this evaluation, it appears that the quality assurance and job close out sequences are one of the strongest features of the program. Quality Assurance processes are integrated into the implementation process as a direct feedback step with the goal of incrementally improving program performance.
2. Conclusion: There were some CAAs and contractors that reported providing reports to the utilities, although it was also mentioned that they do not regularly receive feedback on the status of the program or their own work from the utilities. Recommendation: *Share results of customer feedback surveys/cards with contractor coordinators.*
3. Conclusion: Some CAAs have reported that payment by the utilities sometimes exceeds 30 days, resulting in the accrual of late fees by subcontractors that have performed the program installations to the CAAs. Recommendation: *Batch process CAA invoices or shorten payment terms.*

#### Other Results Conclusions and Recommendations

1. Overall Conclusion: Participants reported high levels of satisfaction with the program; including a rating of 4.7 out of 5 for the program overall. Individual elements of program delivery such as scheduling, knowledge of auditor, and audit length also received very high ratings. Over 95% of participants surveyed also indicated that the program met or exceeded their expectations.
2. Conclusion: It occurred to us that the concerns and perceptions brought to us during the interviews, as well as during the last quarterly meeting, might be discerned earlier and understood more readily by the program administrators if they could carve aside some time to visit with the contractor coordinators on-site. Recommendation: *Tag along with CAAs while they are performing their program duties, akin the premise of the “management by walking around” (MBWA) approach.*