Q. Further to the responses to NP-NLH-105 and to IN-NLH-010, provide the reports from all reviews that have been undertaken by Hydro to evaluate the effectiveness of any CDM programs after they have been put in place.

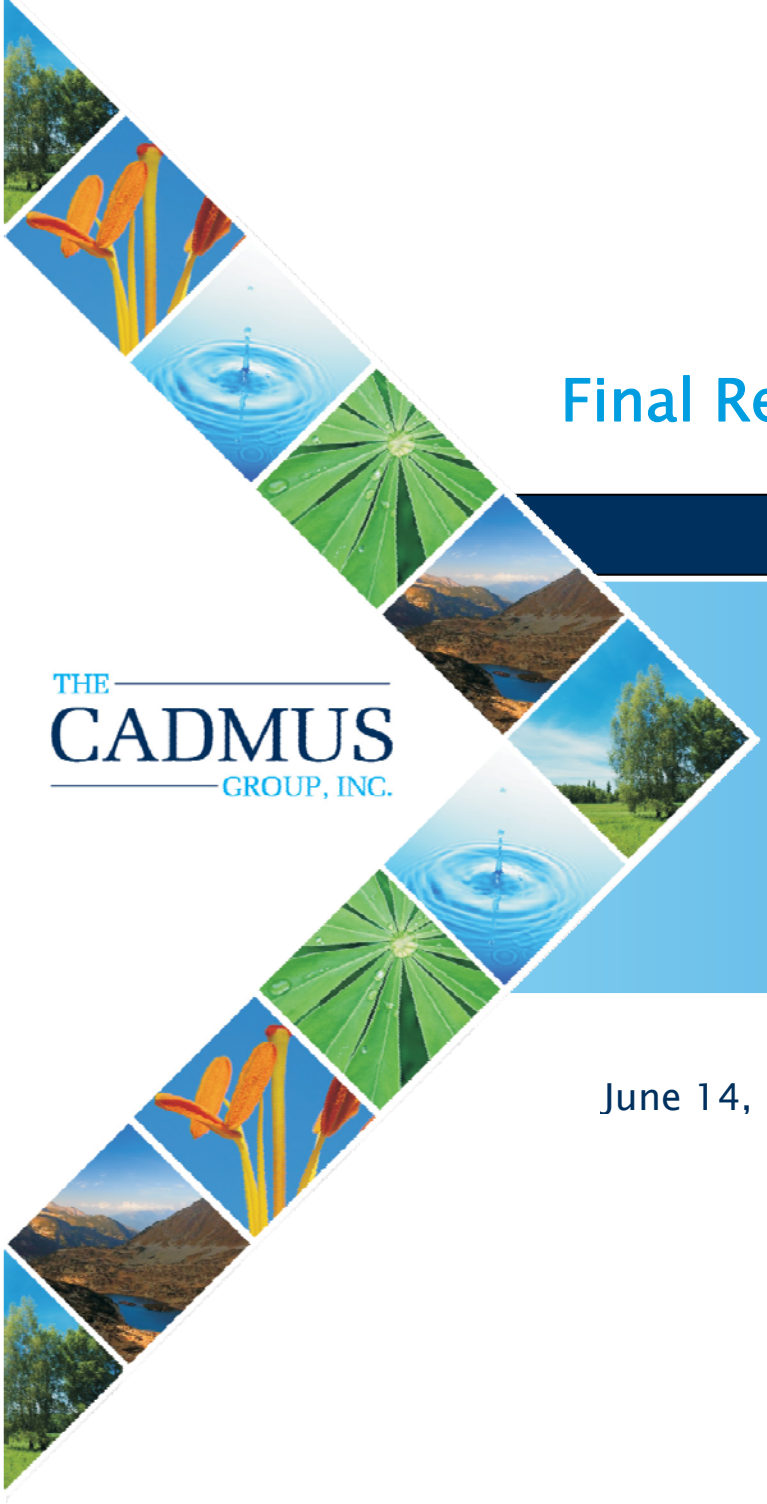
A. Hydro delivers a number of energy efficiency programs in partnership with Newfoundland Power (NP) through the takeCHARGE program. The utilities use a Total Resource Cost (TRC) test to evaluate the economics of the efficiency programs. This cost-benefit ratio test is in accordance with the California Standard Practice Manual developed by the California Public Utility Commission (CPUC) and the California Energy Commission (CEC). The economic tests are updated annually for the programs and are included in NP's Conservation and Demand Management Reports that are filed annually with the PUB. Copies of the reports for the years 2009 to 2012, inclusive, are provided as PUB-NLH-313 Attachment 4, PUB-NLH-313 Attachment 5, PUB-NLH-313 Attachment 6, and PUB-NLH-313 Attachment 7. In addition, Cadmus Group was engaged by NP to do a process evaluation of the joint-utility takeCHARGE residential programs in 2010. A copy of the Cadmus report titled "Newfoundland Power: Process Evaluation" is provided as PUB-NLH-313 Attachment 1. Hydro and NP are currently working on an updated and wider scope evaluation of the residential joint-utility programs, to be completed in Q1 2014.

Hydro has also delivered programs through the takeCHARGE brand but independent of the joint-utility effort. Summerhill Group was the delivery agent for the Coupon Pilot Program in 2010-2011 and the final report titled "Newfoundland and Labrador Hydro takeCHARGE! Final Report" is provided as PUB-NLH-313 Attachment 2. From the experience of this program, the utilities developed a program concept to provide a joint-utility incentive program for small technologies

which was outlined in the latest Five-Year Energy Conservation Plan 2012-2016 that has been filed with the Board. This program will be launched in 2014.

The Isolated Systems Community Energy Efficiency Program was launched in 2012 and is a three-year program providing a wide range of efficiency supports to both residential and commercial customers, including direct install of efficiency technologies, education and awareness, coupons and incentives. The program is being delivered by Summerhill Group and its report, "Isolated Systems Energy Efficiency Program 2012 Final Report" is provided as PUB-NLH-313 Attachment 3. There has been quality assurance through the Isolated Systems Community Energy Efficiency Program to confirm technologies have been installed in homes and businesses. The Isolated Systems Business Efficiency Program was also launched in 2012 and provides technical support and incentives to commercial customers. Extensive time and effort is required to bring commercial customers through the process and an evaluation is planned for year three of operation.

The Industrial Energy Efficiency Program was launched as a pilot program to determine the appropriate program design and components to engage the Industrial Customers. Hydro has engaged Willis Energy to undertake a review of that program with recommendations to be provided for longer-term IC programming in 2014.



THE CADMUS GROUP, INC.

Final Report

Newfoundland Power: Process Evaluation

June 14, 2011

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Executive Summary

Conservation and Demand Management Program Overview

The takeCHARGE Energy Savers rebate programs are the offerings of the Conservation and Demand Management (CDM) five-year plan (*Five- Year Energy Conservation Plan: 2008-2013).* The programs are jointly offered by Newfoundland Power and Newfoundland and Labrador Hydro. According to the plan, the objectives of the programs are to "support a long term goal of development of a conservation culture and sustainable reduction in electricity consumption." Implementation of the programs began as scheduled in 2009, thus now placing the programs at the very start of the third year of the five-year plan.

These programs were selected by the utilities to deliver energy-efficiency savings to customers over the five-year plan interval (as described in Section 1). However, Newfoundland Power and Newfoundland and Labrador Hydro expect that program offerings will evolve during this period. It is anticipated that this process evaluation will contribute to the evolution of these offerings, and to planning of future programs.

takeCHARGE Programs Process Evaluation

Newfoundland Power has these related objectives for this process evaluation:

- Mapping the process of these programs (program logic models)
- Assessing the program processes
- Identifying market perceptions of the programs (from trade allies)
- Performing peer comparisons and best practices for similar programs
- Identifying barriers to participation (from trade allies, and indirectly from customers)
- Obtaining recommendations for program and process improvements

The overarching goal for the process evaluation was to assess the effectiveness of the programs, with an emphasis on determining which aspects of the program processes are working well and which need to be modified to optimize delivery and cost-effective energy impacts. These three methods formed the evaluation approach, and all were integral elements of the process evaluation:

- Conducting interviews (most in-person and some by telephone) with program staff and retailers/contractors.
- Reviewing program documents and related materials.
- Relying fairly extensively on Cadmus' experience working with programs and evaluation research in other jurisdictions and provinces.

Program Staff's Overall Assessment

Nearly all interviewees agree that the programs have successfully addressed many of the obstacles that typically face the initial start-up period (the first one or two years) for these types of programs. There was general agreement on several important accomplishments during the first two years of the CDM programs, and these program strengths are recognized in the assessments (provided in detail in Section 2).

Program Accomplishments

Program management, implementation, and planning/evaluation staff cite some notable accomplishments of the CDM programs, including the following:

- Near-term and longer-term goals are achievable.
- Program designs align well with the intended customer bases.
- Program satisfaction among participants is satisfactory.
- Marketing and outreach efforts as appropriate and effective.
- Coordination between Newfoundland Power and Newfoundland and Labrador Hydro is working well.

Program Challenges

The main critiques raised in interviews with program staff concern the following:

- Rural areas are "very challenging."
- Goals/objectives for the CDM programs not sufficiently developed.
- Participation barriers were noted for the insulation program. Two issues for customers were these: (1) the difficulty of finding contractors to do very small projects at a reasonable price, and (2) encountering retailers who were not familiar with takeCHARGE program requirements.
- The original potential study was constrained by limited primary data collection, so this needed to be addressed in future CDM program planning.

Retailer and Contractor Overall Assessment

Interviews with 12 retailers/contractors elicited overall satisfaction and enthusiasm for the CDM programs, although they noted some perceived shortcomings.

Program Strengths

The retailer and contractor interviews cited the following as strengths of the programs—areas where the programs are clearly successful:

- Incentive levels are about right.

- Satisfaction with both the marketing material and in-store exhibits and events.
- ”Lunch and learn” training sessions deemed effective.

Program Challenges

Retailers and contractors also noted some challenges, particularly with respect to the Commercial Lighting program.

- Commercial lighting program is a “tough sell.”
- takeCHARGE programs well suited to residential customers but less appropriate for commercial customers.

Recommendations

This list summarizes Cadmus’ recommendations, and an elaboration on these recommendations is provided at the end of Section 2. We emphasize that these recommendations, and especially their possible implementation, be considered within the resource limitations of the sponsoring utilities.

- A more comprehensive CDM planning framework is needed. (Section 3 of this report contains suggestions for both overall CDM planning and future evaluation research.)
- A more rigorous evaluation of the programs’ target markets is needed. (This need is discussed in Section 3.)
- Primary data collection efforts are needed to identify empirically the program-specific market barriers. There is limited baseline data on existing markets.
- Program performance targets need to be updated. (See Potential Study review in Section 2.)
- The incentive levels require ongoing review and modification. (Program-specific suggestions are provided in Section 2.)
- Retailer and contractor training need to be expanded.
- The diversity of lighting fixtures and bulbs/lamps that qualify for rebates in the commercial program needs to expand. Expansion of program measures for both residential and commercial sectors would help the takeCHARGE programs conform to best practices in other provinces.
- To help move the more geographically isolated Newfoundland markets, the programs need to test other marketing strategies that facilitate linking customers to contractors. The recommendations contained in Appendix A address best practices in online marketing/outreach approaches. These recommendations will help maximize the effectiveness of the already well-executed interactive exposure.
- The current program tracking databases need to be augmented to support future impact evaluation projects.
- The current audits being conducted on a percentage basis should be entered into a formal, reportable tracking system. (Currently, they are handwritten and not entered.)
- There should be Joint adoption of an overall CDM planning framework.

Introduction

The takeCHARGE Energy Savers rebate programs are the offerings of the Conservation and Demand Management (CDM) five-year plan (*Five Year Energy Conservation Plan: 2008-2013).* The programs are jointly offered by Newfoundland Power and Newfoundland and Labrador Hydro. According to the plan, the objectives of the programs are to "support a long term goal of development of a conservation culture and sustainable reduction in electricity consumption." Implementation of the programs began as scheduled in 2009, thus now placing the programs at the very start of the third year of the five-year plan.

This report presents the findings of a process evaluation of the programs. Process evaluations focus on identifying improvements or modifications to produce more cost-effective programs. This evaluation examined the following takeCHARGE programs:[1]

- Insulation Rebate Program
- Thermostat Rebate Program
- Energy Star® Window Rebate Program
- Commercial Lighting Program

These programs were selected by the utilities to deliver energy-efficiency savings to customers over the five-year plan interval. However, both utilities expect that program offerings will evolve during this period. It is anticipated that this process evaluation will contribute to the evolution of these offerings and to planning of future programs.

The program descriptions, which are provided in this section, contain an explanation of the development of the programs, the program theories (logic), and a summary of program marketing approaches. This information is followed by a discussion of the objectives of the process evaluation and the methodologies that were used.

CDM Program Descriptions and Implementation

Residential Programs

The Residential Insulation program, a revised continuation of the earlier "Wrap Up for Savings" program, targets both home retrofit and new construction (for electrically heated homes). Thus, the main savings opportunities for this program come from either discretionary actions taken by customers to solve a perceived problem or a need that tends to be influenced primarily by installation contractors.

[1] The program portfolio also includes the Industrial Customer Custom Projects program, based on custom engineering proposals, that is not included in this evaluation.

The program has two key objectives:

- To achieve savings in space heating energy by increasing the insulation level in basements, crawl spaces, and walls and attics.
- T o encourage the development of a skilled and available contractor/provider infrastructure that has an economic self-interest in providing and promoting home retrofit services.

This combination of contractor skill and interest and customer education is designed to lead to both near- and long-term energy savings.

The Residential Windows and Thermostat programs also target electric space heat savings. Energy Star-qualified windows and programmable (and high-performance) thermostats are consolidated here because of their similar program delivery strategies, costs, and estimated energy savings. (However, we have prepared separate program logic schematics.) Each program involves partnering with relevant trade allies such as home builders, retailers, and renovation industry contractors.

Although saturations of both products are thought to be relatively low in Newfoundland (approximately 10 percent of sales in 2008), Cadmus anticipates that over time, as market share increases, incentives will decrease or be eliminated altogether. The theory is that efforts to work with various members of the program infrastructures—combined with consumer education and marketing—will eventually increase customer demand for these products by establishing their value and benefits. Also, as the program market share increases over time and partnerships with manufacturers develop (as for qualifying windows in Newfoundland), program incentives may be expected to decrease.

Commercial Program

According to the five-year CDM plan, the Commercial Lighting program is designated to be a point of entry to the commercial efficiency and conservation market. With a focus on lighting, it is aligned with the largest area of opportunity for this sector, based on the commercial potential study.

During the first two program years, the focus of the program was to provide incentives for upgrades from regular T8 systems (lamp plus ballast) to high-performance T8s. For program year 2011, Energy Star LED exit sign lights will be added to the eligible measures.

About Program Logic Models

Logic models help document key assumptions made in designing programs. They depict the main activities performed to achieve the participation rates needed to reach program goals, and they identify the key performance indicators (KPI) for the programs they describe. Such models provide a useful foundation for testing actual outcomes against the original program logic and assumptions, and they document program changes going forward.

Based on a review of background materials, Cadmus' evaluation team developed baseline logic models for each program, using them to clarify the team's understanding of the programs. The logic models are similar for all programs because the programs themselves are similar in structure and function.

One significant difference is the role of contractors in the installation of measures. Specifically, the residential programs do not require installation by certified contractors because many residential customers prefer to install measures themselves. Nevertheless, home improvement contractors are expected to have a significant role in the Windows and Insulation programs, although the role of contractors in promoting those programs is not clearly delineated at this time. For the Commercial Lighting program, lighting contractors and other trade allies play a very significant role.

Figures 1 and 2 show the program logic models for residential and commercial programs.

Figure 1

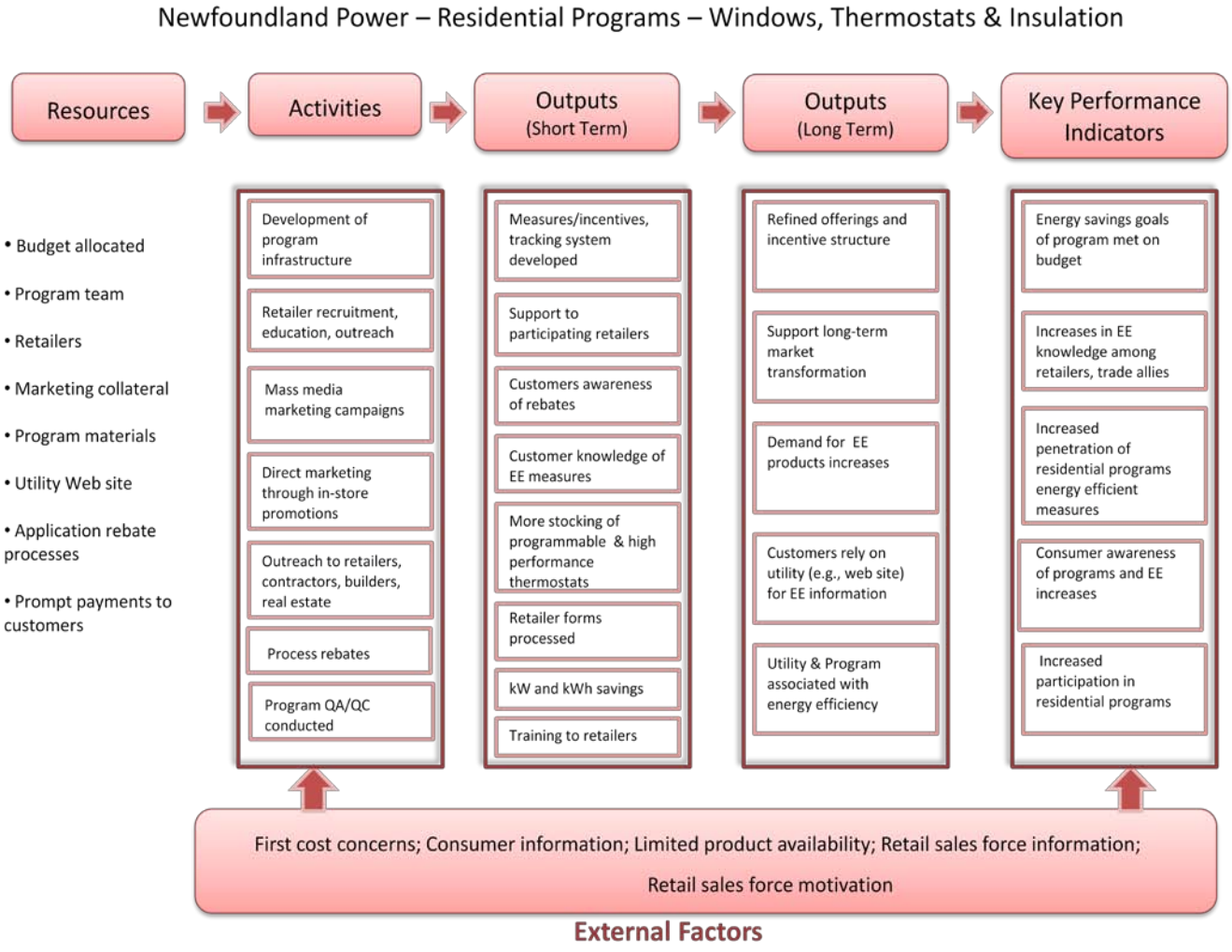
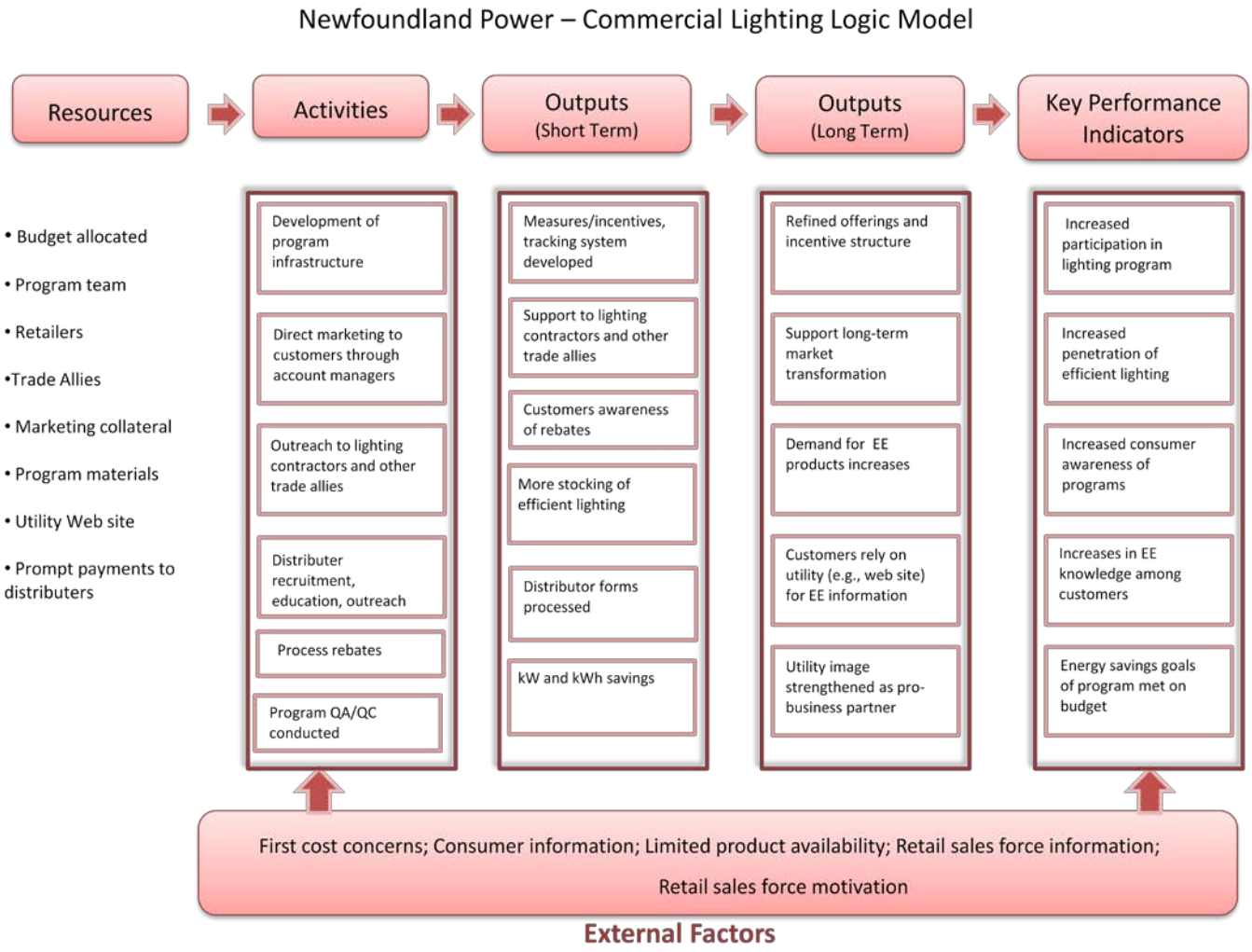


Figure 2



About Key Indicators

The key indicators of program success come from processed rebates. The number of rebates processed represents the rate of participation, and these can be tracked against targets. Rebate forms should contain sufficient information that participation by sector can be tracked.

Ex ante estimates of savings assigned per measure or per building are used to track energy savings. These *ex ante* values should be checked periodically through evaluation studies (such as billing analysis or site metering studies) to validate savings assumptions. Customer surveys can be used to assess penetration of measures, including natural growth occurring outside the program. Surveys can also gauge changes in customer awareness of and attitudes toward the programs and energy conservation in general.

Interviews with retailers and trade allies can help assess their awareness of, knowledge of, and attitudes toward the program. These interviews can also reveal reasons why retailers and trade allies either do—or do not—promote the program with their customers.

Periodic surveys of nonparticipating customers and trade allies can help target changes in programs.

About Program Promotion

Marketing of the takeCHARGE programs has entailed a variety of approaches including advertising through these media: local newspapers, radio, TV, and the Websites and the takeCHARGE Website (http://www.takechargenl.ca/). Key messages of the program marketing have focused on: (1) awareness of the programs and how to participate; and (2) benefits of participation. The objectives have been to select advertising methods that drive participation ***and*** direct customers and upstream market actors to the takeCHARGE Website.

Other marketing and outreach methods include working directly with retailers at in-store events, and providing training via workshops to retailers linked specifically to the residential programs' eligible products. (Considerable retailer/distributer training is also done with commercial lighting market actors.) More training related to all four programs is anticipated in 2011.

Newfoundland Power conducted a retailer survey to understand better the likely receptivity to the residential programs. This survey also addressed the suitability of partnering (that is, did a sample of retailers sell program-relevant products?). Cadmus' review of the survey results suggested ample interest in the programs and revealed useful information from the retailers concerning aspects of their sales of program-sponsored products.

Website Promotion Efforts

Our review of the Website determined that the additional collateral obtained there provided consistent and recognizable formatting and messaging.

Interactive elements took advantage of multimedia and social media opportunities. The videos, including TV commercials, used real people in authentic situations, which translated well to potential participants.

Additional Internet advertising uses multiple sites, which has resulted in the takeCHARGE brand becoming well known in the province. (See Appendix A for a review of the takeCHARGE online exposure, as well as detail regarding future online and social networking possibilities.) .

Objectives for the Process Evaluation

Newfoundland Power's RFP for this process evaluation contained a number of related objectives:

- Mapping the process of these programs (program logic models)
- Assessing the program processes
- Identifying market perceptions of the programs (from trade allies)
- Performing peer comparisons and best practices for similar programs
- Identifying barriers to participation (from trade allies, and indirectly from customers)
- Obtaining recommendations for program and process improvements

Thus, the overarching goal for the process evaluation is to assess the effectiveness of the programs, with an emphasis on determining which aspects of the program processes are working well and which need to be modified to optimize program delivery and cost-effective energy impacts.

Evaluation Methodologies

The following methods formed the process evaluation approach, and each was an integral element:

- Conducting interviews in-person and by telephone with program staff and retailers/ contractors.
- Reviewing program documents and related materials.
- Relying fairly extensively on Cadmus' experience working with programs and evaluation research in other jurisdictions and provinces.

For this report, Cadmus also consulted with an external reviewer who is currently providing energy savings verification services to the Nova Scotia Utility and Review Board.

Staff and Retailer/Contractor Interviews

The staff and retailer/contractor interviews were the initial task. Cadmus conducted a total of 27 interviews with program staff and retailers/contractors involved with the programs. The interview guides, one for program staff, another for retailers/contractors, and a nonparticipant trade ally guide, are appended to this report.

Table 1 presents a breakdown of the completed interviews by group.

Table 1: Interviews by Stakeholder

Group	Interviews
Newfoundland Power	12
Newfoundland and Labrador Hydro	3
Contractors	12

Organization of the Report

Beyond the program descriptions, logic models, and evaluation objectives and methods presented in this section, the remainder of this report presents the findings and recommendations for the process evaluation.

- Section 2 provides assessments of the programs based on the staff and retailer/contractor interviews. It also contains our review and analysis of the potential study (a crucial foundation of CDM program planning and development) and our recommendations for process evaluations.

- Section 3 presents our recommendations for future evaluation research, as well as some considerations on other aspects of CDM planning and evaluation.
- Appendix A provides a best-practices review and assessment of the takeCHARGE programs' social media monitoring and outreach potential.
- Appendix B offers a proposed customer survey instrument.
- Appendix C contains copies of the staff and retailer/contractor interview guides.
- Appendix D shows the participating trade ally interview guide
- Appendix E shows the non-participating trade ally interview guide.

Assessments of the Programs

This section of the report examines the process evaluation of the takeCHARGE programs from the perspectives of the utility program planning and implementation staff and retailers/contractors involved with the programs. Overall, this assessment identifies the programs' primary strengths and weaknesses and suggests program improvements. Respondents gave their perspectives on topics such as goals and objectives, implementation, program design and participation, marketing and outreach, tracking, and other program elements (see interview guides in Appendix C).

Also in this section is our review of the potential study and the reports on the customer end use survey conducted for Newfoundland Power, in addition to comparisons with peer utility programs and discussion of best practices for the CDM programs. The section concludes with our recommendations for opportunities to improve the programs.

Program Staff Overall Assessment

Program Accomplishments

Nearly all agreed that the programs have successfully addressed many of the obstacles of start-up conservation programs, including:

- The near-term goals are achievable and there is confidence that longer term goals are also achievable. The programs are currently doing well against their annual goals.
- The program designs align well with the intended customer bases. Similarly, incentive levels were widely viewed as appropriate for stimulating participation, though changes will likely be needed going forward.
- Program satisfaction among participating customers strong, especially compared to the government programs which customers view as overly bureaucratic.
- The level and quality of marketing and outreach efforts are appropriate and effective.
- Coordination between Newfoundland Power and Newfoundland and Labrador Hydro is working well, and these positive relationships will help ensure program success for the balance of the five-year CDM Plan.

Program Challenges

The main critiques raised in interviews with program staff concern the following:

- The programs are doing very well in urban markets, but the rural areas are "very challenging."
- Some concerns were expressed that the goals/objectives for the CDM programs were not sufficiently developed, and that there is a need for a more comprehensive CDM planning framework.
- Participation barriers were noted for the insulation program, where it can be difficult for customers to get contractors to do very small projects at a reasonable price, and encountering retailers who were not familiar with takeCHARGE program requirements.

- A view was expressed that the original potential study was constrained by very limited primary data collection.

Retailer and Contractor Overall Assessment

Interviews with 12 retailers/contractors elicited their overall views of the programs' strengths and challenges. These comments tended to vary by residential and commercial programs, with the commercial program appearing to face stronger challenges according to these respondents.

Program Strengths

The retailer and contractor interviews cited several strengths of the programs— areas where the programs are clearly successful, including:

- The incentive levels were about right. Some retailers noted that they particularly liked the thermostat double rebates, and in one case this allowed the retailer to work with their distributor in order to nearly meet the entire cost of the measure. One windows retailer said that the amount of incremental cost covered by the program incentive was the most important factor in increasing market demand.
- Retailers reported the marketing materials (POP displays, stickers, brochures) and the in-store exhibits and events are well done. They also appreciated the training provided to their sales staff, though they noted that with sales staff turnover, "Keeping staff educated is a challenge."
- One lighting retailer emphasized the effectiveness of the "lunch and learn" training sessions he had participated in at hospitals and a university.

Program Challenges

Retailers and contractors also noted some challenges, particularly with respect to the Commercial Lighting program, as follows:

- Lighting retailers/wholesalers tended to report that the commercial lighting program is a "tough sell" indicating two primary reasons: (1) the program needs to be driven harder by utilities and the provincial government, and (2) some cynicism about electric rates. When prompted to elaborate on cynicism about rates, interviewees tended to rather vaguely cite the prospect of the savings from efficiency investments being offset by increased rates over time.
- Lighting retailers tended to report that the takeCHARGE programs as designed are well-suited to residential customers – but not so much for the commercial (lighting) customers – stressing that there was "inadequate promotion of commercial lighting, compared to the residential programs."

Assessment of Specific Aspects of the Programs

- This section of the report elaborates on specific aspects of the CDM programs based on the staff and retailer/contractor interviews. This assessment is organized by the topics around which the interview guides are structured. When these observations are considered to be areas

of potential program improvements, elaboration is provided under the heading "Potential Program Implications."

Roles in Delivering the Programs

- Newfoundland Power staff members are organized around the primary program delivery responsibilities, where one important "market-facing" distinction is supply chain responsibilities. Program delivery is critically dependent on each program's supply chain.
- Newfoundland and Labrador Hydro has a much smaller staff working on the takeCHARGE programs. This staff is organized around these activities: (1) administration of budgets, reporting, planning, and liaison; (2) marketing and outreach; and (3) program technical review and analysis.

With respect to the roles of retailers/contractors there are some variations in processes.

- For the residential programs, interviewees indicated that the rebate application usually is submitted by the end-user to the program. However, in some cases the contractor doing the product installation submits the application.
- For lighting, the approved retailers sell the program-eligible products, provide the rebate at purchase, and invoice the utility once per month. One supplier noted that the program incentive allows him to offer rebates to customers (lighting installation contractors) as a line item on his invoices reflecting a discount (he does the application). Retailers/contractors participating in the program said they also devote time to answering the questions of end-users about the products.

Program Goals and Objectives

Across the interviews, numerous program goals/objectives were reported. The following organizes this information as either strategic goals (longer term) or near-term objectives.

Strategic Goals

- Improve dwelling envelopes and control of temperature set points.
- Build program delivery infrastructure, including ongoing development of CDM programs and development of capacity to plan, deliver, and evaluate programs.
- Obtain sufficient resource management
- Coordinate with stakeholders. (This includes coordinating utility goals with the strategic goals from the provincial government.)
- Learn about the markets that the programs target
- Foster a culture change in the province with respect to energy efficiency and conservation
- Reduce greenhouse gas emissions, because oil-fired generation is on the margin (where program effects will have some impact)

Near-Term Objectives

- To achieve energy savings, based on acceptable results of costs effectiveness of California screening tests. The primary test being the TRC>1.
- To meet customer service expectations.
- To provide customer education and increase awareness among customers of their ability to conserve
- To change the energy efficiency and conservation culture at Newfoundland Power

Interview Responses Regarding Goals and Objectives

About the Overall Response

A key generalization across staff is broad agreement that the near-term goals are achievable and confidence that the longer term goals are also achievable.

The programs are currently doing well against their annual goals. Newfoundland and Labrador Hydro staff indicated that the programs were doing very well in urban markets, but were finding the rural areas "very challenging." An opinion offered by Newfoundland and Labrador Hydro staff indicated that the longer term goals/objectives were really "expectations," and that what are defined as targets are "what we hope to get for the current year."

Some concerns were expressed that the goals/objectives for the CDM programs were not sufficiently developed and that there is a need for a more comprehensive CDM planning framework.

About Target Markets

The target markets across the current CDM programs have not changed since program inception. The staff interviews also considered target markets for the programs within the context of goals and objectives. Target markets for the residential programs were identified with these descriptors:

- Must have electric heat
- Must have utility account
- Must be new homes or renovations to existing homes
- Owners are preferable to renters
- Year-around residences (unless a second residence meets the 15,000 kWh usage threshold)

With respect to articulating target markets, The Idea Factory, a local marketing firm, provided additional demographic specificity to Newfoundland Power by that included these criteria: adults 25-54 (with core attention to 35-54 age group); home ownership; children under 18 in the household; and, household income > $50,000.

Target markets for commercial lighting are seen as being potentially broader, in part because of the technology-driven program design. In practice, however, the program has defined the market as being larger institutional loads rather than small commercial accounts.

While the markets described above are end-user target markets, one staff interviewee stressed that the target markets for the programs as currently designed are the agents who sell the products, so that the programs must convince retailers to promote the programs' products and services. One suggestion for increasing participation was to partner even more effectively with the biggest retailers and builders and, in general, to develop more relationships with trade allies. It was remarked that this will entail "having enough in the program for them to get them on-board."

Some Newfoundland Power staff expressed the opinion that the programs should try to reach all customers with some program offer(s). This view was expressed more assertively by staff of Newfoundland and Labrador Hydro. A related planning framework goal expressed was the need to evaluate the target markets: "What we're getting; what we're not getting."

About Market Barriers

Interview discussions of market barriers included the question, "Have the programs identified market barriers?" Program planners noted that market barriers have not been developed empirically, but instead adapted from other examples of program logic for similar programs.

- One barrier commonly mentioned by staff was the administrative burden of applying for the rebate. This barrier was also cited by retailers/contractors.
- Additional participation barriers noted were specific to the insulation program (difficult for customers to get contractors to do very small projects as a reasonable price; retailers who were unfamiliar with takeCHARGE program requirements) and the commercial lighting program (some lighting installation contractors would rather service more frequent burn-outs than sell longer measure life fixtures/lighting).
- For the residential market, new construction is an issue because of the added first costs of higher-efficiency measures.
- Building code changes were cited as potentially making a big difference in efficiency gains.

About Program Performance

Program performance targets were determined by starting with forecasts of what Newfoundland Power and Newfoundland and Labrador Hydro could reasonably achieve. This was largely based on the potential study, housing stock analysis, and best case savings assumptions for participation. However, it was stressed by staff that these targets need to be updated in a systematic manner.

Within the context of goals and objectives, interviewees were asked, "How do the programs measure success?" According to program staff, the success of the programs is measured primarily by ongoing comparisons to expected program take-up (projected in the program design phase).

Specific metrics include:

- kWh savings
- numbers of rebates paid
- the scale of what individual participants do (e.g., size of insulation projects and lighting retrofits)

- brand awareness
- *outreach targets (events conducted)*

Responses Specific to the Lighting Program

Interviews with retailers/contractors elicited an essentially uniform response that the goal of the programs is energy savings. One lighting retailer said the goal was "to get the energy hogs out, convert to T-8 or T-5s, and increase saturation/penetration of efficient lighting." A new home construction contractor expressed the opinion that the goals of the programs are not clearly defined for most contractors, citing that "contractors only understand taking a half hour to do the application, send in, and get a few hundred dollars – the goal of the program is lost!" However, this view was not reinforced in the other retailer/contractor interviews.

One lighting retailer noted that while the energy savings program goal was well defined for trade allies, the program goal was not always clear to the end-users, noting that, "Outreach is not always getting through on commercial lighting." Another lighting contractor stressed energy awareness, sustainability, and lower life cycle costs as appropriate CDM program goals.

With respect to target markets, lighting retailers tended to see the target market as any commercial, private building that has T-12s or F-32s. With respect to program barriers, one retailer commented that he "talks to end users about eight-month payback – but when they hear that it will require $20,000 up front the conversation stops." When asked if financing would make a difference he said, "Yes, probably would help." (Note: Newfoundland Power does have financing options available to residential program participants, but this financing offer likely needs to be better integrated with the takeCHARGE programs.)

One lighting retailer said he would like to make small commercial his key target. He also recommended the program target industrials and larger commercial, such as malls and warehouses. Another lighting retailer said there is considerable potential in the retail market for LED technologies, as well as CFLs.

Program Goals and Objectives: Potential Program Implications

About the Overall Response

At both utilities, staff members expressed concerns that the goals/objectives for the CDM programs were not sufficiently developed and that there is a need for a more comprehensive CDM planning framework. Such a framework would likely prescribe a process for developing: (1) a CDM annual business plan (i.e., operational plans, budgeting, staffing, etc. for individual programs within various market segments); and (2) an annual EM&V plan (summaries of each scheduled evaluation activity with goals, scope, level of effort, budgets, and general EM&V approaches). Ideally, each of these annual documents would flow from an overall CDM planning framework (and an accompanying EM&V framework). Some general considerations for overall CDM portfolio and evaluation planning are provided in Section 3 of this report.

About Target Markets

Related to planning goals was the expressed need to evaluate the target markets—"What we're getting, what we're not getting." Program planning staff reported that this is not currently being

done in any rigorous manner. Although some effort has been devoted to quantify total market opportunities (e.g., number of housing starts), these efforts have not yet established market penetration percentages. Future research focused on assessment of target markets is also discussed in Section 3 of this report.

About Market Barriers

With respect to participation barriers for Commercial Lighting, the programs will need to address certain specific program participation barriers that originate at the wholesale/ installer level. An example cited by a lighting retailer was the preference among installation contractors for servicing more frequent burn-outs rather than selling and installing fixtures/lighting with much longer measure life.

As for barriers related to awareness of lighting program benefits, while the approved lighting distributors expressed a clear understanding of the program goals for energy savings, there was concern that this goal is not well defined for many participating installation contractors and end-users. Lighting distributors were most concerned about effectively conveying this program message, and recommended more outreach efforts.

Program Implementation

About the Overall Response

Across interviews with both staff and retailers/contractors—and noted above as a strength of the programs—there was much agreement that the program designs align well with the intended customer bases. The residential programs' orientation to electric space heat was described as "the lowest hanging fruit." This view was also expressed by staff at Newfoundland and Labrador Hydro. Staff at both utilities saw this as an appropriate strategic approach in the initial years of the five-year plan.

About the Incentive Levels

Similarly, incentive levels were widely viewed as appropriate by staff, some of whom noted that changes to incentive levels will likely be needed going forward, based on review. One issue raised by Newfoundland and Labrador Hydro staff is that the programs are "very close to needing to re-assess rebate levels. There was also a suggestion to consider bundling of measures with graduated (increasing) incentives for installing more/different measures.

Residential program retailers and contractors concurred with the program staff regarding incentive levels, consistently reporting that the incentive levels were about right. Some retailers noted that they particularly liked the thermostat double rebates. One windows retailer said that the amount of incremental cost covered by the program incentive was the most important factor in increasing market demand.

About Product Offerings

Interview questions on program implementation also elicited opinions on the current product offerings. The current thinking on adding (or deleting) program offerings for years 3-5 of the

current 5-year plan is focused on the 2011 program year. No new programs have been approved as yet (at the time of the staff interviews), but three programs are being considered. The California screening tests are used for cost effectiveness analysis, with requirements of a TRC of 1 or greater.
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The three program offerings being strongly considered for 2011 are: a mini-split heat pump *pilot* program; LED exit lights; and, high efficiency heat recovery ventilators (HRVs). Program staff also reported that among the stakeholders and others from whom input is elicited regarding new offerings are: industry trade allies; their counterparts at Newfoundland and Labrador Hydro; staff at Newfoundland and Labrador Housing; and, contacts at other utilities.

About Implementation Efforts and Barriers

With respect to program implementation efforts to date, and as summarized above as a program challenge, interviews with lighting retailers/wholesalers tended to report that the commercial lighting program is a "tough sell" (three retailers contrasted this to the lighting programs offered in Nova Scotia and New Brunswick, which they regarded as doing very well). Why a tough sell for lighting? One retailer gave two primary reasons: (1) the program needs to be driven harder by utilities and the provincial government, and (2) some cynicism about electric rates (as noted above, this relates to skepticism that bill savings from efficiency investments will fully offset future rate increases). It was noted that changes to the master lighting specifications by the provincial government would be useful. Another lighting retailer said, "The commercial side needs more attention." Another lighting retailer reported that to increase market demand (for efficient lighting) "more outreach and advertising is needed, aimed at the end-user."

As a program implementation barrier, it was also reported that lighting installation maintenance contractors do the maintenance at a high labor rate margin – and would rather put in standard ballasts every few months than install high efficiency fixtures and lamps that last many years. Lighting retailers also noted that their program efforts mainly consist of trying to educate and encourage contractors – often on the benefits of going from the F-32 lamp to the program-sponsored F-28 with electronic ballast. It was suggested by lighting retailers that more emphasis on conducting lighting audits is needed to capture more building owners/managers who will incur the first costs.

As reported by residential programs retailers, "cost" was the foremost barrier for the programs. Some other residential program retailers/contractors noted that the application paperwork was a deterrent, with two of these retailers suggesting that an "instant" rebate (at the cash register) might make a difference – and represented their main recommendation for achieving higher program participation levels. Another concern expressed was the percentage of program-subsidized thermostats that are actually installed, suggesting that reliance on do-it-yourself installations was a struggle for many customers.

Insulation retailers/contractors mentioned that resistance to insulating basements was a program barrier. A windows retailer also noted that homeowners intending to "flip" the house are much less likely to retrofit with higher efficiency.

Program Implementation: Potential Program Implications

As with all DSM/EE programs, incentive levels require ongoing review and modification.

- The success of the thermostat program likely suggests downward movement for incentives, or eliminating double rebate events.
- The lower production costs for the program-qualifying windows also indicate the feasibility of lower incentives.
- The insulation program was regarded as the most difficult for which to gauge the correct incentive level (in part because of difficulties in gauging the market size).
- The commercial lighting program will almost certainly benefit from examining other similar programs (peer comparisons), where technology offerings, incentive levels, and payment options should all be reviewed.

A theme that emerged from interviews with lighting retailers is that while they are encouraged that takeCHARGE has a commercial lighting program, the program needs to be more aggressive in terms of promotion, more expansive in terms of lighting products included and lighting audits conducted, and more facilitative in terms of financing options for customers. It became clear that for some lighting retailers, the Nova Scotia Power Small Business Lighting Solutions is an example of what they would very much like to see offered by takeCHARGE.

Program Design and Participation

Staff Views of Program Design, Participation Rates, and Customer Satisfaction

Bases for the current program designs were typically described as a combination of borrowed (e.g., commercial lighting benchmarked from a New Brunswick program; the windows program similarly adapted from a BC Hydro program) or legacy (from previous Newfoundland Power DSM programs with review of other similar Canadian thermostat and insulation programs). The initial program design concepts were then combined with appropriate economic factors for Newfoundland to finalize the offerings.

With respect to participation levels being achieved, program progress is primarily tracked with the information from rebates application forms. Staff reported that although minimal customer surveying has been conducted, some end use surveys have contributed to program tracking. Program tracking results indicate that currently there are approximately 3,000 participants per year (1.5 percent of customer base).

Based on program staff interviews, program satisfaction among participating customers is thought to be very satisfactory, especially as compared to the government programs (which tend to be viewed as overly bureaucratic and less customer-friendly). However, there are currently no formal systems in place to gather customer feedback related to program products/services. Some very limited feedback is obtained from the QA/QC audits performed. As part of this evaluation, a customer survey has been developed. (See the discussion in Section 3 and a survey instrument in Appendix B.)

Retailer/Contractor Views of Program Design, Participation Rates, and Customer Satisfaction

The interviewed retailers and contractors offered a variety of views concerning program design and participation. One lighting contractor noted that many customers do not actually know they are participating in a program. He added that he makes sure that everyone he works with is not only

aware of the program, but also knows how much money and/or energy they have saved (typically when they see the first post-install bill).

When asked about the very low levels of participation in their outlets elsewhere in Newfoundland, one participating lighting retailer noted that, "Managers are focused elsewhere than lighting retrofit jobs – they don't have the flexibility to seek the retrofit work because they are just behind the counter." He also stated that the other outlets were probably selling F-28s but not claiming program incentives because of the "paperwork hassle." Other lighting retailers echoed this reasoning, saying they had limited resources for marketing and that more outreach and training from the program was needed.

In general, lighting retailers tended to report that the takeCHARGE programs as designed are well-suited to residential customers—but not so much for the commercial (lighting) customers—stressing that there was "inadequate promotion of commercial lighting, compared to the residential programs."

Regarding adding measures to the commercial lighting program design, one retailer/wholesaler provided the following suggestion: "T-5 rebates would help (though T-5s are dying a slow death now); LED's will take over, but the quality is not there now – in a year or two the quality will be better and they will take over; strip LEDs (replacing fluorescent tubes) will likely have different fixtures – but maybe not necessarily." Two other lighting retailers also recommended adding T-5s, and said the program was also "missing some opportunity on T-12 to standard T-8s," but acknowledged that standard T-8s will be phased out.

Among the measures that residential program retailers/contractors suggested could be added to the programs are: weather stripping; quick foam caulking; lighting products (e.g., CFLs, LEDs); and appliances and other consumer plug load products. There was also some enthusiastic response to the mini-split heat pump technology as a possible program measure.

Regarding retailer/contractor perceptions of participation, when asked for an estimate of the eligible market that has participated in the commercial lighting program one lighting retailer said "less than 5 percent, this year." He continued that, "I've done (through the program) 6,000 lamps and 1,200 ballasts…small, especially compared to jobs in Nova Scotia and New Brunswick" (done by his firm's outlets in those provinces). For additional context on his low level of program sales he noted that, "In total sales I've sold twice as many F-32s as F-28s, and 8,000 F-40s. I shouldn't be selling these, but it's what the customer wants." He concluded, "Newfoundland can be slower of the mark than other provinces…very cautious as a province, and always a few years behind."

One residential new construction contractor argued strongly that the programs were not meeting the needs of the building industry and, that for new construction, the incentive levels are not having an impact. He recommended having more expert advice on energy efficiency (and comfort, durability issues) available to new home buyers and that this advice should ideally come from the utilities (e.g., heat-loss analyses). He recommended that "to raise the bar," you need a program with the objective of providing expert consultation to new home buyers rather than simply providing some token incentive.

This builder elaborated that the programs are doing a good job on marketing and outreach, *as the programs currently exist.* He also cited social networking as a good move for marketing the programs. But as the programs *should be designed* he stressed that the programs need to provide

more direct guidance and advising, thereby fulfilling a critically important education need. He suggested the utilities provide direct expert consultation, based on return-on-investment (ROI) for envelope, an appropriate heating system (room-to-room control, comfort, properly sized), and appropriate thermostat controls. He argued that this alternative programming approach would "go back to Newfoundland Power's roots of delivering technical guidance right from the plans stage."

Program Design and Participation: Potential Program Implications

Assuming that the Commercial Lighting program continues beyond 2011, program planners will need to continually expand the diversity of lighting fixtures and bulbs/lamps that qualify for rebates. Over time, this will facilitate the ability of the program to increase overall product offerings and thereby increase the range of efficient lighting choices that customers have experience with. The education of customers about choosing lighting products will become increasingly important as LED replacement lamps come to price point levels more amenable to program promotion (commercial and residential). Having some way to stimulate the number of lighting audits will also be important, as well as addressing fairly entrenched barriers to investment in efficient lighting.

The residential programs also need to pursue additional product offerings. All residential retailers/contractors interviewed had a ready list (albeit usually short) of products they would like to see added.

Marketing and Outreach

About the Overall Response

As noted above under program success, the level and quality of marketing and outreach efforts were widely regarded by staff as appropriate and effective. For the residential programs, retailers and contractors also reported satisfaction. As examples, the marketing material (POP displays, stickers, brochures) and the in-store exhibits and events were very favorably received. Retailers tended also to be very appreciative of the training provided to their sales staff, though also noting that with sales staff turnover "keeping staff educated is a challenge."

About Alternative Marketing Strategies

As to possible alternative marketing strategies—specifically for hard-to-reach geographic areas where there are contractor supply constraints—program staff are considering other ways to link customers to contractors to help move these more isolated markets. Some marketing techniques now being implemented include social media, and specifically use of Facebook, as a way to measure program success and to extend outreach (and encourage feedback to outreach messages). New TV commercials are also featuring customer testimonials.

Another lighting retailer said that despite good efforts by Newfoundland Power, "…Marketing and outreach is a weak point of the commercial lighting program." This retailer suggested that providing lighting audit guidelines on the program Website would be useful.

About Energy Education Efforts

In citing the very good marketing/outreach efforts in providing education on energy efficiency awareness and benefits, lighting retailers in particular expressed that, in the words of one retailer, "The Newfoundland Power team is always willing to educate—just not sure how much the education is used." Residential program retailers also stressed energy awareness as a key to broader participation, and the need for outreach to target contractors as effectively as it currently targets end-users. One home builder said that Newfoundland Power knows ***how*** to market, but that it needs to market the right services (i.e., expert consultation to new home buyers). This is the builder who strongly advocated that Newfoundland Power deliver technical guidance right from the plans stage.

Program Tracking

The fundamental sources of program tracking data are the rebate applications themselves. The information is entered using an internally developed application. There are plans for an on-line application completion capability.

From the tracking system data reports are routinely produced. A larger catalog of reports is anticipated, but one interviewee noted, "We're not there yet." Some staff indicated that the information in these reports does not give a comprehensive view of program status, in particular because of the lack of rigorous evidence of program progress against an estimated market size.

Quality Assurance and Control

Staff interviews confirmed that the primary QC controls are:

- Audits performed for 10 percent of installed projects (being reduced to 5 percent in 2011);
- The requirement for submission of original receipts for program-rebated products/services.

Audits are conducted by program staff, and there was some staff sentiment to not reduce the sample from 10 percent to 5 percent. One lighting retailer reported that program QA/QC inspections on ballasts are important because otherwise rebate claims can be "abused."

Quality Assurance and Control: Potential Program Implications

Assuming continued evolution and growth of the CDM programs, additional QA/QC controls will likely be desirable (beyond the current audits and original receipt requirement). QA/QC indicators are typically designed to help program managers ensure that they have accurate information about program performance. QA/QC indicators and inspections should be designed to reflect the relative risk associated with each of a program's outputs as well as the cost to inspect them. Thus, the importance of an inspection point is weighted against the burden imposed on program personnel to capture the information. In addition, ongoing methods are needed for using QA/QC results to adjust program results (i.e., reported savings).

Trade Allies

Interviewed staff explained that trade allies are not formally registered for residential program involvement. Instead, ability to deliver the program-eligible products/services—and interest in

participation—have determined involvement of retailers and contractors. However, there are agreements in place with the approved lighting retailers.

In terms of the approved retailers, one lighting retailer said that the program is targeting the right trade allies but that a more difficult challenge is getting other lighting contractors to promote the program measures. He said that he "talks with their contractors to try to bring them into the program."

Training is provided to participating trade allies primarily through "lunch and learn" events and more informal contacts with program staff. In general, staff commented that certain trade allies tend to see the marketing advantages and added service/value to customers, and they are the ones who have "taken hold of it."

Cross-Organization Coordination

Coordination between Newfoundland Power and Newfoundland and Labrador Hydro was seen by staff as working well. One interviewee stressed, however, that agreeing on an overall energy management plan (framework and process) would improve coordination.

The federal and provincial governments also require some coordination with the CDM program staff (of Newfoundland Power and Newfoundland and Labrador Hydro), but this need was characterized as minimal. The staffs of the two partnering utilities do meet often, frequently in the course of delivering outreach activities.

Program Staffing and Communications

Staff at Newfoundland Power generally found the program responsibilities to be optimally allocated. For Newfoundland and Labrador Hydro, some concern was expressed about adequacy of staff, although those responsible for specific tasks were considered to be well qualified for their roles.

Communications within program staff were consistently characterized as good, although the need for more focus on planning was cited as an area that will require even better communications. Also, it was noted that staff coming from different groups within the utility can be a challenge. As highlighted at the start of this report section as a program success, staff at Newfoundland and Labrador Hydro stressed the strong, positive relationships with staff at Newfoundland Power and indicated that this will provide an important basis for the balance of the five-year CDM Plan.

Interviewees described management support for program staff described as either good or very good. One interviewee noted that executive-level support for CDM was evident, but that at the management level, support was sometimes lacking. (This was attributed to a "utility engineering orientation.") A barrier to internal communications at Newfoundland Power is that the Communications group and the Custom Relations group are currently in different locations.

Program Staffing and Communications: Potential Program Implications

The somewhat different utility priorities and drivers will present ongoing challenges for collaboration on the five-year CDM Plan, but the strong interpersonal relationships between the

respective staffs— and the initial program successes at this early stage of the plan—should provide a workable basis for the two-utility joint planning. Further, as new responsibilities focused on planning are defined, it is possible that additional capabilities will be needed that could require changes in responsibilities and assignments. As previously suggested, an increased emphasis on planning activities will likely also have the effect of reinforcing the current good communications between the two partnering utilities.

The somewhat different markets and service territories of the two utilities might drive some divergence on takeCHARGE programming. This could take the form of a core, joint portfolio with differences in additional utility-specific offerings. For example, Hydro currently offers some additional small initiatives covering different technologies, and Newfoundland Power also has other initiatives (e.g., their financing offering). The slightly different utility priorities tended to be broadly characterized in interviews as "private vs. government." Differences were also noted on the number of technologies currently sponsored by the programs, where Newfoundland & Labrador Hydro staff tended to favor sponsoring many more technologies.

Assessment of Program Planning and Development

The original CDM program planning and development relied significantly on research conducted on the potential for energy efficiency and conservation opportunities in Newfoundland. As part of our evaluation, Cadmus reviewed findings from the set of potential studies conducted by Marbek Resource Consultants Ltd. in 2007 for Newfoundland Power and Newfoundland & Labrador Hydro.[2]

We wanted to determine whether the findings of these reports needed revision in light of both recent program activity and a 2010 end-use survey of residential customers. That survey provides more detailed information about the penetration of energy-efficient equipment than was available to the authors of the potential study.

We note that our evaluation focuses on energy consumption rather than demand. We have no reason to think the observations on energy do not equally apply to projections of demand savings.

Review of the Potential Study and Customer End-Use Survey Reports

For the "island and isolated" service regions, which include the Newfoundland Power territory, the Marbek studies estimated an achievable potential energy savings of between 5.9 and 11.1 percent for residential customers by 2026. The different levels of savings reflect different assumptions about program support, incentive levels, and participation.

For commercial customers, the studies estimated an achievable potential energy savings of between 11.7 and 17.3 percent by the same date. The base year for both estimates is 2006.

Savings percentages are relative to a base that changes over time as a result of growth and uninfluenced or natural changes in technology. Table 2 shows the progression of achievable

[2] Marbek Resource Consultants Ltd. 2008. "Conservation and Demand Management (CDM) Potential Newfoundland and Labrador: Residential Sector." Marbek Resource Consultants Ltd. 2008. "Conservation and Demand Management (CDM) Potential Newfoundland and Labrador: Commercial Sector."

savings potential estimated in five-year increments, with the 10-year savings potential highlighted in light blue because these are referenced below.

Table 2: Energy Savings Achievable Potential by Sector, 2011 to 2026

	Residential		Commercial	
Year	Low	High	Low	High
2011	0.4%	1.7%	4.1%	5.6%
2016	1.9%	4.2%	7.8%	10.7%
2021	4.2%	7.5%	9.7%	13.9%
2026	5.9%	11.1%	11.7%	17.3%

Source: Marbek Resource Consultants Ltd. 2008.

The estimates of the Marbek studies appear conservative compared to other potential studies of which we are aware.

- A Vermont study from 2007 estimated 10-year energy savings of 22.1 percent each for residential and commercial sectors.[3]
- A 2005 study of Ontario potential savings arrived at a total 10-year potential of between 3.7 and 20.6 percent, depending on the level of incentive provided by programs.[4] With incentives set at 50 percent of incremental costs, the estimated 10-year energy savings was 13.1 percent. By sector, the Ontario study projected 10.1 percent ten-year electric energy savings for residential customers and 12.9 percent savings for commercial customers.
- Finally, a meta-analysis of a set of 15 potential studies conducted in the Northwestern United States projected an average of 19.1 percent electric energy savings after ten years.[5]

These values contrast sharply with the Marbek median 10-year energy savings potential of 3.1 percent for residential customers and 9.3 percent for commercial customers.

Comparing findings from different potential studies is instructive but must be done with caution. For instance, differing energy costs result in a different mix of economically viable measures. Climate differences affect the saving opportunities from space cooling and heating. Moreover, different assumptions about barriers to adoption can result in significantly different conclusions about the rate of measure uptake. Market differences and even regional cultural differences can confound comparisons.

Nevertheless, our review of other studies leads us to conclude that the Marbek studies estimate electric energy savings that are comparatively low as a percentage of baseline consumption. We cannot, however, on the basis of our review offer an alternative value. And, indeed, when we look more closely at the details of the studies, we see some areas where potential may be understated and other areas where it may be overstated.

[3] GDS Associates. 2007. "Vermont Electric Energy Efficiency Potential Study." Prepared for the Vermont Public Service Commission.

[4] ICF Consulting. 2006. "Assessment of Energy Efficiency Potential: 2006-2025." Prepared for the Ontario Power Authority.

[5] Massachusetts Energy Efficiency Advisory Council. 2009. "Massachusetts Energy Efficiency and Combined Heat and Power Potential Assessment Regional Findings."

While the comparison of savings potential from different studies provides a useful perspective on the overall aggressiveness of assumptions in the Marbek studies, it does not account for the targeted efforts of Newfoundland Power: residential space heating and commercial lighting. The Marbek studies found that:

- Residential space heating constituted 41 percent of residential consumption.[6]
- Lighting was estimated to constitute 25 percent of commercial consumption.

Table 3 shows the projected energy savings potential for these two end-use categories as a percentage of their estimated share of energy consumption. For instance, the low estimate of potential savings for commercial general lighting in 2011 is 6.5 percent of the 25 percent lighting share, or about 1.6 percent of total commercial energy consumption.

Table 3: Energy Savings Achievable Potential for Program-Targeted End-Uses by Sector, 2011 to 2026

	Residential Space Heating		Commercial General Lighting	
Year	Low	High	Low	High
2011	0.1%	0.2%	6.5%	8.8%
2016	0.3%	1.2%	12.1%	15.6%
2021	0.8%	3.4%	14.8%	18.4%
2026	2.2%	8.1%	17.3%	20.1%

Source: Marbek Resource Consultants Ltd. 2008.

In the following sections we consider each of the end-uses that are a primary focus of Newfoundland Power's current programs.

Commercial Lighting

The savings potential for commercial lighting in the Marbek commercial study reflects a mix of T12 and conventional T8 fluorescent upgrades, incandescent replacements, LED exit signs, and HID lighting upgrades. Since the current Newfoundland Power program focuses on T12 and T8 upgrades, we center our analysis on projections for these technologies.

In the Marbek study, the projection of savings potential for lighting derives, most prominently, from assumptions about the number and size of buildings, classified by the primary activities conducted in them. From there, it is determined by assumptions about the current mix of technologies, the hours of operation, and the rate of growth over time. Each of ten building types has a profile developed that represents the average opportunities for energy savings. Key values in the profiles are:

- Square footage
- Average illumination (foot candles)

[6] This and the next reference reflect estimates for the island and isolated region.

- Hours of operation
- Percentage of lights illuminated during hours of operation
- Percentage of lights illuminated during off hours
- Percentage of lighting by technology type (T12, T8, etc.)

A rate of participation in programs is applied that peaks at an estimated maximum percentage of total customers in the final analysis year of 2026. For instance, replacement of T12 lamps with advanced T8 lamps is assumed to progress in a linear growth pattern over twenty years, achieving 74 percent penetration of the new technology by 2026.

Each of the elements in the potential estimate is subject to refinement on the basis of more detailed empirical data about the specific circumstances of Newfoundland Power's commercial customer base. Unlike the residential programs, we do not have access to recent commercial saturation research that might provide a basis for evaluating the commercial potential study. We can draw a few conclusions, however, from the study itself and recent program performance.

It appears the Marbek study assumed faster program uptake than is currently being achieved in the commercial lighting program. This is not surprising because the Marbek study does not allow for an initial slow-growth start-up period. To achieve its projected savings rates, the potential study estimated a 2026 participation rate (i.e., upgraded fixtures) of between 64 and 74 percent for T12 upgrades and between 73 and 90 percent for T8 upgrades. In each case, the two values reflect low and high scenarios for program participation, incentive levels, and other factors.

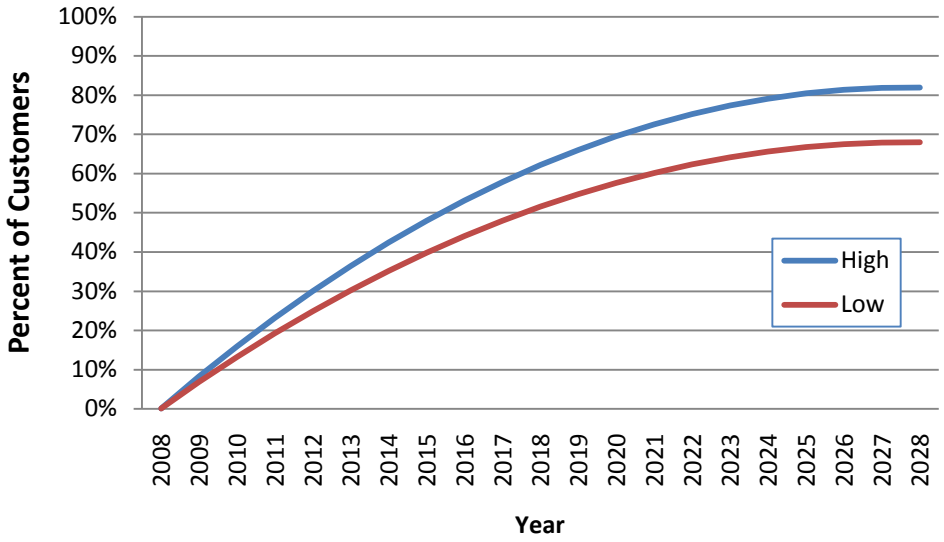
Although the study does not provide detailed participation rates for the intervening periods, it does indicate linear growth for conversion of T-12 lamps to high-efficiency T8s. For conversion of standard T-8s to high-efficiency T-8s, the potential study projects a more rapid initial adoption that decreases as saturation approaches 100 percent. The study does not describe the rate of adoption in sufficient detail to derive an estimate of participation in intervening program years, however.

Using the rate of projected energy savings growth as a proxy for participation rate, we can derive a Marbek study projection of 13 to 16 percent of lighting upgrade opportunities (businesses or, more accurately, fixtures) participating in the commercial lighting program by the second program year. Figure 3 shows the rate of participation, by year, derived from projected energy savings.[7] Actual Year 2 program-to-date participation is roughly 300 commercial customers (or 14,700 fixtures). [8] This is fewer than the projected customers and, based on the Marbek figures for square footage, fewer than the projected fixtures.

[7] The Marbek study used 2006 as its base year. Since programs did not begin until 2009, we set "year zero" at 2008. We plotted the five-year savings values and fitted a polynomial function through them. The fit was better than R^2 = 0.99. We then solved for intervening years.

[8] Cadmus had access to program counts of participants and measures for 2010 but estimated counts for 2009 based on energy savings.

Figure 3: Savings-Derived Adoption Rate of Commercial Lighting Measures, 2008 to 2026



The slower-than-projected uptake of the commercial lighting program does not indicate that its eventual performance will be less than the 70 to 80 percent participation projected by Marbek. If the program can turn the start-up corner soon, it could catch up. Indeed, the trajectory of savings over time, the pathway from zero to maximum program participation, which is based on findings of a workshop conducted among core members of the consultant team, program personnel from the utilities, and local trade allies, probably has the weakest empirical basis and introduces the most uncertainty into the model. Relatively small differences in the maximum participation rate or rate of change over time can have a large affect on participation at intermediate points on the trajectory.

We note another anomaly relative to that study that tends to offset differences just noted in the rate of participation. The Marbek study projects higher participation for the upgrade of T8 fixtures than for T12 fixtures: linear growth to a low peak for T12s; rapid initial growth to a higher peak for T8s. The T8 upgrades have lower unit savings than the T12 upgrades, so this participation pattern would suppress program savings. Program data from 2010, however, suggest the opposite is true.

Based on the ratio of claimed energy savings to upgraded fixtures (which is 77.7 kWh per fixture), we estimate that roughly 80 percent of upgrades have been for T12 fixtures. While this estimate is based on a number of assumptions about the installed measures, the evidence shows that more T12 than T8 fixtures are being upgraded.[9] Clearly, T12 upgrades occur from a larger base than T8 upgrades; but this does not account for a four-fold difference in participation, according to Marbek estimates of technology saturation.[10] The difference may reflect a misallocation of lighting across the two technologies in the study or it could reflect the greater performance improvement associated with T12 upgrades.

[9] Most basically, that T12 upgrades save approximately 87 kWh annually per fixture; T8 upgrades save approximately 30 kWh annually per fixture.

[10] Across all building activities, based on the profiles developed by Marbek, T12s represent about 62 percent of fluorescent fixtures that have not already been upgraded.

Finally, we observe that the Marbek commercial study, quite naturally, does not explicitly model the effect of targeted marketing on participation over time. It does not, in other words, consider program efforts to initially gather "low-hanging fruit." Savings potential is projected into the future on the basis of the floor space of establishments and assumptions about growth over time. Other than estimating the mix of technologies by building activities, it does not account for market factors that might induce some categories of establishment to be disposed to participate earlier than others. In principal, this limitation does not affect the ultimate participation rate but only the timing of achieved savings. In fact, however, the twenty year horizon of the potential study may be excessive in light of the many unknown factors that increasingly will make the study findings obsolete—new technologies being only the most obvious of these. Early savings should be given a significant premium over savings that are ten or more years from being realized. Strategic information that can speed up the adoption process within the next five years—information about markets and likely early adopters—is critical to the overall success of the commercial program.

Residential Space Heating

Our ability to comment on the Marbek residential potential study is enhanced by a recent survey of customers who investigated electricity use and related topics.[11] The survey was conducted by phone with 1,201 residential customers of Newfoundland Power. With respect to Newfoundland Power's current suite of residential programs, the survey included relevant questions about the following:

- Space heating fuel, primary and secondary
- Space heating equipment: type, age, etc.
- Thermostat type
- Thermostat setting
- Energy saving measures taken at the home, including insulation, weather sealing, etc.
- A rating of the home's energy efficiency

This information has direct bearing on the assumptions introduced into the Marbek residential potential study. For that study, energy savings potential was based on a set of thermal archetypes: one for detached homes and one for attached homes. Savings were projected into the future through the conversion of archetypical homes to higher-efficiency measures, as well as the introduction of high-efficiency measures into new homes.

Features of the single detached archetype include:

- Single story
- Heated space of 1,000 sq. ft.
- Finished basement
- 83 sq. ft double glazed windows with wood or vinyl frames
- Wall insulation R-13.5

[11] Newfoundland Power, Inc. 2010. "Energy Conservation Study."

- Ceiling insulation R-25.5
- Basement insulation R-3.5

Features of the attached archetype include:

- Two stories
- Heated space of 1,120 sq. ft.
- Finished basement
- 77 sq. ft double glazed windows with wood or vinyl frames
- Wall insulation R-13.5
- Ceiling insulation R-25.5
- Basement insulation R-3.5

Similar thermal archetypes were developed for new homes, except the floor space was larger (1,184 sq ft. detached / 1,400 sq. ft attached); basements were uninsulated; and insulation R-values in walls and ceilings are 20 to 25 percent higher.

Home Size

The survey results suggest the archetypes for home size are too small. A question asked customers to classify the size of their homes into one of seven square-footage categories. To derive an average, we assigned the median value of each category. For the top and bottom categories, which are open-ended, we assigned a value 20-percent lower or 20-percent higher than the stated value.

This approach introduces some error into the estimates, but it provides an approximate value. The result is that detached homes with electric heat have an average size of 1,594 square feet (i.e., 59 percent larger than the potential study archetype). Attached homes with electric heat have an average size of 1,392 square feet (i.e., 24 percent larger than the potential study archetype). We note that there were only 22 survey responses from customers living in attached dwellings.

Because potential estimates were produced with both a top-down perspective (based on estimated energy shares by end-use) and a bottom-up perspective (based on home modeling), we cannot be sure of the size of the effect of underestimating home size. The direction of the effect, however, is clear: a potential for energy savings from space heating that is too low. If underestimating the size of homes results in too small a share of total consumption allocated to heating, all heating measures will be assigned a potential that is too low, because each upgraded measure is assigned a percent reduction in the share of energy assigned to heating.[12]

[12] To account for interactions, the model applies the savings for separate heating measure sequentially, with the savings potential applied to the share net of previously applied savings. This may not adequately account for synergies or inefficiencies but it is a reasonable approach to approximating interactions in lieu of full modeling of effects.

Insulation

Survey results do not have sufficient precision to provide a counterpoint to assumptions in the Marbek study about insulation R-values. Still, from the survey we can estimate that 89 percent of electrically heated homes (91 percent of detached homes) have insulated attics, although we cannot discern the type or thickness of the insulation.

It is problematic to ask detailed questions about insulation because many respondents do not possess that information, although we know of survey instruments developed for residential customers that have probed more deeply into the matter than was done for Newfoundland Power. Nevertheless, it appears that the opportunities for energy savings are slightly higher than estimated by the potential study, since roughly 10 percent of homes are reported as not insulated at all. This is a survey finding that bears verification and, if true, points to a special opportunity to identify these homes and promote the insulation program.

Likewise, the survey indicates that only 75 percent of electrically heated homes have an insulated basement. The potential study archetype assumes that all basements are insulated; however, an opportunity profile that was developed from a workshop conducted for the study states that many houses have little or no basement insulation. We cannot be sure how these apparently conflicting pieces of information entered into the estimate of energy savings potential. The fact that 25 percent of homes have no basement insulation whatsoever suggests an increased opportunity for savings at least relative to the thermal archetype for detached homes.

Windows

The residential customer survey indicates that about 55 percent of electrically heated homes have installed ENERGY STAR windows. This is likely to be an overstatement of the penetration, reflecting respondent confusion about what makes a window ENERGY STAR qualified. On the other hand, we cannot determine from the potential study the assumed baseline penetration of ENRGY STAR windows. This is an important value in estimating remaining savings potential because existing homes will continue to make up majority sizeable portion of the opportunities during the study period.[13] In describing the development of opportunity profiles, no mention is made of the current penetration of efficient technology. If the assumption was that all windows could be upgraded, the savings potential has been overstated. Since we cannot be sure, we simply sound a note of caution about interpreting the savings projections of the Marbek study.

Thermostats

The residential customer survey indicates that about 16 percent of electrically heated homes have installed programmable thermostats. An additional seven percent have installed high-performance thermostats. As with ENERGY STAR windows, we cannot determine from the potential study the assumed baseline penetration of programmable thermostats. Again, if the assumption was that all thermostats could be upgraded, the savings potential has been overstated.

[13] Through separate communication with Newfoundland Power, we understand that the share of installations for new construction and retrofit installations are expected to approximately the same. To reiterate our point, this assumption hinges partly on the current penetration of efficient windows.

Conclusions

From an overall perspective, based on a comparison with other studies, we find the Marbek potential studies to have been conservative in estimating the potential for energy savings. In looking at particular measures, however, the case is mixed.

- For commercial lighting, the rate of uptake in the Marbek studies may be exaggerated.
- For residential shell measure upgrades, we could not be sure that the potential estimates were based on a realistic estimate of current penetration of efficient measures.

This would also overstate the opportunities. Conversely, we think it likely the Marbek residential study underestimated the share of energy for space heating because it underestimated the size of dwellings. In that case, the potential for savings in this end use are also underestimated.

To project savings into the future, potential studies must make numerous simplifying assumptions. We have probed the assumptions where we could and found a few cautions; however, we do not conclude there were any fundamental flaws in the study.

From the standpoint of program planning, we do think the 20-year horizon of the study should not be a distraction from the near-term trends. Whatever error there is around the maximum values in 2026, we believe error around the intermediate points on the pathway to that maximum are more significant to the program. That is, the five-to-ten year trajectory is of more immediate concern; and indications that the rate of uptake in lighting is slower than estimated, for instance, while not precluding the accuracy of the ultimate estimate, should be addressed by the program. This important piece of information has the least adequate basis in empirical fact.

Recommendations

Although our recommendations derive from these various sources, for continuity in report structure, they commence with recommendations from our review of the potential study. The remainder of our recommendations are then organized by the program topic areas covered in the interviews.

We emphasize that these recommendations, and especially their possible implementation, be considered within the resource limitations of the sponsoring utilities.

Design and implementation of the takeCHARGE programs represent significant accomplishments that deserve to be recognized as such. Many of the obstacles that face the start-up of similar programs have been successfully met.

However, it is not possible to address all issues in the first two years of these offerings. The recommendations that follow should be viewed as recommendations that pertain to the programs going forward now that start-up has been completed. Thus, these recommendations represent suggestions regarding what should or could be addressed in the remaining years of the five-year CDM plan. They are not meant as criticism of what has transpired. In that sense they are intended to consolidate the initial efforts of the first two years and help establish the longer term future of the CDM programs.

Review of the Potential Study: Recommendations

Based on our review of the Marbek Potential Study, we offer these recommendations:

- As a global statement, additional information is desired. In particular, a commercial saturation survey would help evaluate the Marbek commercial sector findings. In light of our recommendation to take a shorter view of savings potential, the saturation survey could be designed to include an attempt at measuring perceptions of needs related to energy upgrades, near-term plans to make upgrades, as well as attitudes toward energy efficiency, cost sensitivity, etc. These could become part of the targeted marketing effort.
- For the residential sector, we do not think the evaluation of the Marbek study leads to any strong recommendation for additional actions. There may have been a missed opportunity to obtain more detailed information about housing characteristics – in particular related to shell measures – in the recently completed survey; but nothing in either the Marbek study or the survey contradicts the approach taken by Newfoundland Power to address electric space heating as the top priority for energy efficiency.

Program Goals and Objectives: Recommendations

- There is a need for a more comprehensive CDM planning framework. Such a framework would likely prescribe a process for developing a CDM annual business plan, and an annual EM&V plan. Ideally, each of these annual documents would then flow from an overall CDM planning framework. (Section 3 of this report contains suggestions for both overall CDM planning and future evaluation research.)
- More rigorous evaluation of the target markets is needed – "what we're getting, what we're not getting" in terms of program penetrations. This is not currently being done in any rigorous (empirical) manner. (This need is addressed to some extent in the Section 3 proposed evaluation projects for the remaining three years of the current CDM plan.)
- Primary data collection efforts are likely needed to empirically identify program-specific market barriers. There is a lack of baseline data on existing markets.
- Program performance targets need to be updated in a rigorous manner. The original Potential Study was constrained by very limited primary data collection. (See Potential Study review above in this Section.)

Program Implementation: Recommendations

- As with all DSM/EE programs, incentive levels require ongoing review and modification. The following are program-specific suggestions:
    - The success of the Thermostat Program likely suggests downward movement for incentives.
    - The lower production costs for the program-qualifying windows also indicate the feasibility of lower incentives.
    - The Insulation Program is likely the most difficult program for which to gauge the correct incentive level (in part because of difficulties in gauging the market size). Survey data collection with participants would provide some needed feedback.

  - The Commercial Lighting program will almost certainly benefit from examining other similar programs, where technology offerings, incentive levels, and payment options should all be reviewed.

- We recommend expansion of retailer and contractor training, which is critical to exerting the control the programs need over the performance of market allies delivering the program-sponsored products and services.

Program Design and Participation: Recommendations

- Assuming the takeCHARGE commercial offerings continue to include commercial lighting, there is a need to continually expand the diversity of lighting fixtures and bulbs/lamps that qualify for rebates. This will facilitate the ability of the program, over time, to increase overall product offerings and thereby increase the range of efficient lighting choices with which customers have experience.
  - The education of customers about choosing lighting products will become increasingly important as LED replacement lamps come to price point levels more amenable to program promotion (commercial and residential).
  - Some way to stimulate the number of lighting audits will also be important, as well as addressing fairly entrenched barriers to investment in efficient lighting.
  - Some program emphasis on outdoor area lighting could be applicable.

- Based on our best practices review of program offerings in other provinces we recommend exploration of possible expansion of the takeCHARGE program measures for both residential and commercial sectors. For the residential sector, water heating options could be assessed. For the commercial sector, the Potential Study indicates that space heating and ventilation measures could likely capture cost-effective electricity savings.

Marketing and Outreach: Recommendations

- The programs will need to test other marketing strategies that facilitate linking customers to contractors to help move the more geographically isolated Newfoundland markets.

- The Cadmus Group's evaluation of the takeCHARGE programs includes a review of online exposure (http://www.takechargenl.ca/) relative to accepted best practices listed in Appendix A. Recommendation bullets included in this separate appendix devoted to these marketing/outreach approaches offer suggestions to maximize the effectiveness of the already well-executed interactive exposure.

  In general, the interactive platform, accessibility, and consistency earn high review marks. The clean design of the homepage offers a clear path of action and multiple access points for program details. The takeCHARGE collateral also provides this consistent and recognizable formatting. In addition, plain language in both online and print brochures clearly defines program benefits.

  The takeCHARGE interactive elements also take advantage of multi-media and social media opportunities. The videos, including TV commercials, use real people in authentic situations which translate well to potential participants. Further detail regarding online and social networking possibilities can be found in Appendix A.

Program Tracking: Recommendation

The current program tracking databases will need to be augmented to support future impact evaluation projects. This will include the need to capture and store data on pre-retrofit lighting equipment for commercial sector programs, and linking to the billing data systems to support impact evaluation of the Insulation Program.

Quality Assurance and Control: Recommendation

The current audits being conducted on a percentage basis should be entered into a formal, reportable tracking system (they are handwritten and currently not entered).

Cross-Organization Coordination: Recommendation

There should be joint adoption of an overall CDM planning framework (process for program planning and EM&V between Newfoundland Power and Newfoundland and Labrador Hydro.

Future Evaluation Research

In this section, the Cadmus team provides an overview of a proposed evaluation approach within the residential and commercial sectors for the current CDM programs and through the remaining three years of the CDM plan (*Five-Year Energy Conservation Plan: 2008-2013)*. This includes some broad strategies for each sector, with a primary emphasis on residential initiatives involving dwelling envelopes and products related to electric space heating and ventilation. The section then addresses program-specific evaluation project recommendations. We also offer some planning considerations for an overall process for evaluation and an example conceptual framework for overall CDM planning.

Strategic Evaluation Planning Considerations for the Current CDM Programs

Residential Sector

Strategic planning for the residential sector evaluation activities benefits from recognition of the synergies between the current programs. Specifically, programs for the residential sector are aimed at space heating, reflecting the energy conservation potential identified in the potential study.

At the residential sector level we differentiate between evaluation *functions* and evaluation *activities*. The evaluation functions are fully sector-level in nature; the evaluation activities within each sector are partially program-specific and partially sector-specific.

For the residential sector we recommend two evaluation functions in Newfoundland Power's strategy for evaluation planning: (1) new programs; and (2) residential sector policy analysis. The new programs' evaluation function explicitly recognizes that over the balance of the current five year plan additional program initiatives will be designed and implemented. The actual number and breadth of programs that will be offered is mostly unknown at this time. We do understand that two new residential efforts will be offered in 2011 – a mini-split heat pump research program and a high efficiency heat recovery ventilators (HRVs) offering. The extent of evaluation research needed for these new programs, while not detailed at this time, suggests the need for contingency evaluation funds.[14]

The second evaluation function recommended for the residential sector is policy analysis. We see this function as likely being divided into three parts: policy analysis focused on synthesizing the results for different residential sector programs; policy analysis focused on synthesizing the results for different programs across the residential and non-residential sectors; and targeted analysis of specific policy issues likely to affect the CDM programs (e.g., initiatives of the Office of Climate

[14] Related to development of new residential programs over time, we recommend for future potential linking of program measures to *Energy Star* the following consideration. An increasing number of *Energy Star* products cannot pass a TRC test, in part because the program has been successful in raising baselines. For example, in some areas it is hard not to find an *Energy Star* refrigerator and, if you can, the performance delta between non-*Energy Star* and *Energy Star* is often small. Thus, we recommend monitoring consumer product listings from the organization TopTen USA (www.toptenusa.org). They claim large savings variations within *Energy Star,* and at a minimum should be consulted as their product recommendations may well be more useful than *Energy Star*.

Change, Energy Efficiency and Emissions Trading, and possible other provincial or federal government initiatives regarding codes and standards).

There are clearly uncertainties in allocations of level of effort that would be dedicated to individual research objectives or programs. Thus, it is premature to attempt to specify levels of effort for tasks. Instead, we have focused largely on identifying a few evaluation activities that are likely to compete for the limited resources available. Based on our experience, we think the high-level evaluation activity categories that should be considered are:

- tracking and database management;
- measurement/verification and energy/demand savings from specific programs;
- evaluation of market effects; and
- process evaluation.

Table 4 provides a suggested level of effort to be allocated to specific residential programs for future evaluation. Primary factors in proposing the relative level of effort for each activity are the estimated costs and energy savings for each program (as included in Schedule A of the *Five-Year Energy Conservation Plan: 2008-201*) and the methods discussed for evaluation in the program-specific evaluation project recommendations (in the subsection following). As a rough approximation, we suggest that "low" prioritization is equivalent 10 to 20 percent of the planned evaluation budget, "medium" is 20 to 40 percent, and High is over 40 percent of available program-specific evaluation budget.

Table 4. Proposed Prioritization of Residential Program-Specific Evaluation Activities

	Residential Windows	Residential Thermostats	Residential Insulation
Tracking and Database Management	Low	Low	Medium
Measurement/Verification and Energy/Demand Savings	Low	Low	High
Evaluation of Market Effects	Medium	Medium	Medium
Process Evaluation	Low	Low	Medium

Commercial Sector

The program emphasis in the commercial sector is Commercial Lighting, which the Potential Study identified as the largest single source of opportunity in the sector. The initial lighting offering is considered a "point of entry" for the commercial sector, in part recognizing the challenges of disaggregated market data upon which to design additional programs (though an LED exit light program is slated for 2011).

For the commercial sector we recommend one central evaluation function in Newfoundland Power's strategy for evaluation planning: collection of baseline data characterizing end users' current decision making structures and energy efficiency practices in some detail. This effort could consist of two kinds of alternative approaches applied to the commercial population. One would be to obtain market shares data for targeted technologies (e.g., lighting, and then perhaps space

heating and pumps/fans). Another would be to collect data more broadly characterizing the physical structures and equipment in place across more end uses, preferably at periodic intervals. Both of these approaches are expensive to implement across a comprehensive list of end uses and equipment. Likely more feasible is collection of the narrower market shares data for targeted technologies.

For near-term strategic evaluation planning, we recommend "medium" effort emphasis on the tracking and database (and "low" effort on the evaluation of market effects attributable to the program, measurement/verification of energy savings and process evaluation). These prioritizations follow from the fact that evaluation utilization of the program tracking information will need to be more involved to support the impact (energy savings) evaluations for future commercial sector offerings (e.g., the need for pre-retrofit lighting equipment specifications).

Program-Specific Evaluation Project Recommendations

Residential Sector

Insulation Program

The main savings opportunities for this program are due to discretionary actions taken by customers to solve a perceived problem or need that tends to be importantly influenced by installation contractors. It is probably reasonable to assume that consumer decision-making in this market tends to be risk averse, favoring the maintenance of the status quo rather than the expenditure of out-of-pocket funds for what they may perceive as limited value savings or improvements (based on our evaluation experience with a range of insulation/shell-based programs in other utility service territories, with particular attention to the program logic underlying Home Performance with *Energy Star* programs).

Fundamental to the continued expansion and success of the program is convincing contractors and retailers that selling enhanced efficiency building envelope services is in their best financial interest. Thus, removing the market barriers to market actors providing insulation and installation services can be seen as the most important avenue to increased levels of program participation. As a result, the recommended evaluation projects focus on development of the service delivery infrastructure.

Evaluation Approach – early program priority. The evaluation should focus on the first "links" in the hypothesized chain of events leading to widespread changes in insulation retailer and contractor awareness, knowledge, capabilities, and business strategies.

- **Conduct a comprehensive set of interviews with installation contractors and insulation retailers.** The in-depth interviews will help determine whether relevant market indicators (such as retailer and contractor awareness, interest, practices, and business strategies) are changing in response to the program. In addition, this evaluation project should qualitatively verify significant energy savings by completing "case studies" with participating trade allies *and* customers. These case studies will help to understand the ways in which customers access the program (e.g., via contractors or by way of retailers and do-it-yourself installation), and the associated program outcomes.

Evaluation Approach – mid-program priority. At a somewhat later point of the program, a systematic approach to evaluating the energy savings impact (on a per home basis) should be designed and implemented.

- **Measurement and verification of performance for each participating home.** As the program progresses, and the number of installations increases, a higher level of evaluation funding should be allocated to understanding per home energy savings. This will likely entail the design and implementation of a fairly rigorous impact analysis using billing data. Conducting this study somewhat later in the program's implementation should also facilitate the collection of a full 13 months of pre- and post-retrofit billing data for a sufficient number of participating homes.

  Our understanding is that this impact analysis can be informed by earlier research conducted in Canada on dwelling envelope retrofits.[15] Under a previous Natural Resources Canada program, for retrofit of existing homes, there was a "test-in" and "test-out" system (including blower-door tests) that resulted in an improvement score. However, the federal system and its financial support are now discontinued by the current government, leaving the provinces and individual utilities to continue on their own financing and program designs. A weakness in this previous system was that it relied primarily on simulation modeling for all residential whole house work (very similar to the modeling used for USDOE low-income WAP programs in the U.S.). However, various true-up studies of the NRC model showed that it could be very far off from impact measurement using utility billing data (with PRISM, or PRISM-like, weather normalization techniques).

  These true-up studies could be very useful to a billing data analysis for the takeCHARGE Insulation Program in understanding, for example, the additional explanatory variables that should be included in the billing analysis. Thus, as part of this evaluation project, we recommend contacting the unit at Natural Resources Canada that ran this program and secure either the studies they did on "true-up" or conclusions from them about the variability between their model and billing data analyses.

Evaluation Approach – late program priority. In the later years of the program, more comprehensive market assessment information should be sought.

- **Province-wide effort to assess consumer awareness, to include systematic sampling of trade allies.** Use telephone survey of both participating customers and trade allies (both participating and nonparticipating) to understand the extent to which the values/benefits of increased insulation levels and practices are migrating into wider customer awareness and knowledge—and into various segments of the trade ally community. This assessment will provide valuable information to the takeCHARGE programs in determining the extent to which the program concept has caused decreases in market barriers.

[15] Personal communication from Gil Peach (H Gil Peach & Associates), who is currently Savings Verification Consultant for the Nova Scotia Utility and Review Board.

Windows and Thermostats Program

Energy Star-qualified windows and programmable (and high-performance) thermostats are consolidated here in evaluation planning because of their similar program delivery strategies leveraging of energy efficient labeling, and estimated energy savings (though we note that there are clearly important differences between these measures). They each involve partnering with relevant trade allies (home builders, retailers, and renovation industry contractors). Though pre-program saturations of both products are thought to be relatively low in Newfoundland (approximately 10 percent of sales), it is anticipated that over time, as market share increases, incentives will decrease or be eliminated altogether. The theory is that efforts to work with various members of the program infrastructures – combined with consumer education and marketing—will, through time, increase customers' demand for these products by establishing their value and benefits.

We do not recommend that energy (and demand) savings be directly assessed in evaluations for these programs. What is being promoted is the purchase and use of two products that are more efficient than standard products but not new or experimental. Thus, savings estimates can be developed through a review of the average savings attributable to the substitution of the more efficient products for the standard efficiency product, multiplied by the incremental sales of the more efficient products attributable to the programs.

The highest priority for evaluation of these programs is collection of sales and/or market share data on a regular and reliable basis (or *indicators* of market progress, such as labeling and stocking practices). Another priority is to monitor customer changes in awareness and understanding of the products' benefits (and for the windows, the awareness and understanding of the Energy Star label).

Evaluation Approach – early and mid-program priorities. We recommend three evaluation projects to be conducted in approximately the next 3 years. For each evaluation project the earlier efforts will yield baselines that are then compared to the mid- to later program results.

- **Develop and implement method(s) for tracking sales/market shares of each product.** The programs are designed to stimulate increases in the sales and market share of the products. The initial evaluation step is to identify indicators of market progress that can be tracked in a reliable, (ideally) generalizable, and cost-effective manner, and then to develop and implement the methods for doing so. There are various approaches to accomplishing this tracking: introduce a new data collection effort at the retailer level; obtaining shipment data from cooperating manufacturers and retailers; or purchase of sales data from a commercial organization or an industry association. Each has drawbacks—and each can be expensive. It may be most likely that proximate indicators of market progress (focusing on the program's primary local retailers/distributors) will be feasible. For example, surveys of stocking practices may be the most prudent use of available evaluation resources that will still provide useful, actionable research reports.
- **Surveys of customers, supplemented by in-depth interviews with market actors in the windows market.** The customer survey research would be the preferred method for monitoring changes in awareness and understanding of the value and benefits of each product. This will support testing of the basic program design theory: labeling and the

promotion of the products will increase customer recognition and understanding of the products' features and benefits. In addressing the windows market specifically, where establishing and publicizing standards are at issue and contractors control a portion of the market, in-depth interviews are desirable.

- **Customer follow-up research to verify installation.** There are alternatives for the participant in accomplishing installation of these products: do-it-yourself; independent contractor; or, installation services available from the retailer. As part of the customer survey study – which needs to probe regarding installation status of the measures—on-site audits should be conducted for a subset of participants who are surveyed (and the results of the on-site can then be extrapolated to the survey sample, and then to the participant population).

Commercial Sector

Commercial Lighting Program

Given the modest energy savings level for the current program, we think the most prudent use of resources involves two types of evaluation projects:

- **Development of tracking methods to capture key details about the pre-retrofit equipment.** For near-term evaluation planning, we recommend efforts on the tracking and database management (and "low" effort on the evaluation of market effects attributable to the program, measurement/verification of energy savings, and process evaluation). These prioritizations follow from the fact that evaluation utilization of the program tracking information will need to be more involved to support the impact (energy savings) evaluations likely to be needed for future sector offerings (e.g., the need for pre-retrofit lighting equipment specifications).
- **Baseline research on equipment saturations and commercial/industrial decision-making regarding energy-using equipment purchases.** As described above in this section, for future evaluation (and program) planning we recommend one central evaluation function: collection of baseline data characterizing end users' current decision making structures and energy efficiency practices in some detail.

  Related to understanding lighting equipment purchase behaviors, we note that the observed contrasts between Nova Scotia and New Brunswick in purchasing behavior and stocking practices for energy efficient commercial lighting are remarkable.[16] New Brunswick recently discontinued its upstream lighting distributor program and almost overnight lighting equipment purchases reverted to pre-program behavior, demonstrating that in the commercial sector nearly all end-use players are price driven and ***not*** green driven (with a few exceptions). This contrast could be investigated by discussion with one or two lighting distributors that serve in all three provinces of Newfoundland, Nova Scotia, and New Brunswick. It is an example of an unplanned experiment that documents why lighting programs can be essential to changing market actor behaviors.

[16] Personal communication from Gil Peach (H Gil Peach & Associates).

Cross-Sector Evaluation Projects

For both sectors, we recommend periodic participant and nonparticipant customer surveys.

- **Customer surveys.** Surveys with program participants will provide greater understanding of satisfaction with program processes (e.g., application process), use of equipment/products, preferences for learning about other takeCHARGE programs, and free-ridership and spillover. (See subsection immediately below for summary of a customer survey designed for the programs as part of this process evaluation.)

A Suggested Residential Participant Survey Instrument

As part of this process evaluation Cadmus has developed a customer survey suitable for understanding customer perceptions of the programs (provided in Appendix C). For participating customers the survey has questions for these topics:

- Primary sources of program awareness (and assessments of outreach/marketing methods and content)
- Satisfaction with program elements (e.g., measures received, interactions with trade allies, eligibility requirements, incentive amounts, application processing, payment timeliness)
- Reasons for satisfaction, or dissatisfaction
- Awareness of efficiency and conservation "brands" (e.g., Natural Resources Canada ecoENERGY, EnerGuide, Energy Star)
- Barriers to program participation (pre-participation and post-participation)
- Demographics and other customer characteristics
- Willingness to participate in current and potentially new offerings
- Impact evaluation questions for measuring free-ridership and spillover (energy-efficiency or conservation behaviors outside of the program but as a result of participation)

An Example Template for Detailed Evaluation Plans

Cadmus recommends the following detailed evaluation plan outline, where very brief annotations describe the content of each plan element. This plan template is suitable for both residential and nonresidential program evaluations, though evaluation elements must be assessed for program applicability.

- **Program description.** A description should be provided in enough detail that readers can understand the program and its components that are delivering anticipated effects.
- **Program logic.** A program logic model provides a concise schematic of the resources, activities, short-term outputs, longer-term outcomes, and key performance measures for a program.
- **Researchable issues and prioritization.** Depending upon the purpose of the evaluation research, the objectives of the evaluation are to address the primary researchable issues, prioritized usually along process-related issues and/or an examination of the energy usage impacts attributable to the program.

- **Tracking database analysis.** The creation and maintenance of data tracking systems, and the dissemination of information from those systems, is one of the major DSM program evaluation functions. Assessment of these systems is central to the "evaluability" of a program.
- **Summary of data collection activities.** The evaluation data collection activities, whether primary or secondary, are summarized along with their purposes and data sources.
- **Staff interviews.** The objectives of these interviews are to gain information about program operations, emphasizing the strengths and weaknesses of the current implementation procedures.
- **Stakeholder interviews.** (If applicable) For some evaluations interviews are conducted with samples of trade ally partners and other interested parties. These interviews usually elicit opinions about which parts of the program work best and least well, and what kind of change recommendations are suggested.
- **Participant telephone survey.** (If applicable) Surveys with participants can focus on a wide range of issues, depending upon the evaluation objectives. A detailed plan should describe how surveys will be coordinated between impact and process evaluation objectives, as applicable.
- **Nonparticipant telephone survey.** (If applicable) Surveys with nonparticipants typically focus on program awareness and reasons for non-participation, and perceptions of the needs for the program services.
- **Impact evaluation approach.** For detailed planning for impact evaluations, the approach for calculating gross energy and demand savings must be specified. This could be one, or a combination, of: M&V; deemed savings and engineering review; and statistical billing data analysis.
- **Site visits.** (If applicable) Engineering calculations, observation site visits, and metering are techniques that fit together and are used to varying degrees in impact evaluations.
- **End use metering.** (If applicable) Metering is a data collection method to collect physical data to analyze savings as a result of installed energy-efficient improvements.
- **Engineering review of ex ante savings estimates.** (If applicable) This engineering review typically focuses on energy savings goals recorded at the beginning of the program funding cycle.
- **Attribution activities.** (If applicable) These analyses focus on isolating the savings that are caused by a program's efforts from the savings that are caused by other market forces.

  In addition to these elements of a detailed evaluation plan, evaluation timeline and budget are also typically included. Any cost-effectiveness activities, non-energy benefits estimation/quantification, and a quality assurance/control plan may also be detailed. Finally, evaluation data requests should be specified. These data may come from the utility, third party implementers, or other sources.

Some Considerations for an Overall Evaluation Process

The takeCHARGE Energy Saver programs are designed to "support a long term goal of development of a conservation culture and sustainable reduction in electricity consumption." (*Five*

Year Energy Conservation Plan: 2008-2013, page 1). As with any DSM program sponsor, a risk management strategy for Newfoundland Power and Newfoundland and Labrador Hydro relies importantly on evaluation—from program development through post-program documenting of energy savings and cost effectiveness. These partnering utility sponsors are embarking on how to apply evaluation processes to reduce uncertainty in CDM program-attributable energy impacts while at the same time providing internal and external accountability. It is this overall evaluation process for the takeCHARGE programs that is the focus of the following considerations.[17]

As Newfoundland Power and Newfoundland and Labrador Hydro move ahead with both the takeCHARGE programs and associated evaluation research, it will be important to address over time a number of institutional, accountability, and process-oriented issues. This will involve the programs and the staff of both utilities who are involved in planning, designing, developing, implementing, marketing, evaluating, and overseeing the evaluation reporting for the takeCHARGE programs. These issues are summarized in the following six topics, each characterized by a key researchable question concerning the overall process for evaluation.

- ***Management direction.*** "Is there clear accountability for the evaluation function and process?"
    - Effectiveness of evaluation oversight
    - Institutional organization of evaluation activities
    - Evaluation planning process
- ***Asset protection.*** "To what extent are key evaluation assets being protected?"
    - Staff morale and turnover
    - Approach to the use of consultants
- ***Relevance.*** "Is evaluation performing the right evaluation activities?"
    - Appropriateness of evaluations to the program being evaluated and stated evaluation objectives
    - Perceptions of interviewees regarding evaluation work products
- ***Appropriateness.*** "Is evaluation performing its activities in the best way available?"
    - Research methods used in evaluation and related studies
- ***Costs and productivity.*** "Is evaluation performing its activities at a reasonable cost?"
    - Costs of studies (current and planned), and other evaluation spending information, compared to program administrators in other regions
- ***Acceptance.*** "What effect are evaluation efforts having?"
    - Stakeholder acceptance and assessments of evaluation results.

[17] These overall evaluation process considerations are adapted from work completed by Cadmus' lead report author for BC Hydro Power Smart.

While these are potentially fairly broad topics and objectives, over time the benefits of addressing them we believe will result in continuous improvement to CDM programs.

Some Considerations on Overall CDM Planning

One of the recommendations drawn from the program staff interviews is that a more comprehensive CDM planning framework is needed. The essence of a portfolio is balance – a mix of program "investments" corresponding to different objectives and with different risk profiles that help ensure that objectives are met (even if individual programs under-perform). The set of CDM programs that Newfoundland Power and Newfoundland and Labrador Hydro is implementing, and future programs to be proposed, should be viewed in similar terms. This section considers a program portfolio philosophy that may be of use toward a CDM planning framework.

The design and management of a CDM portfolio must address portfolio risk: the likelihood that the portfolio will fail to deliver on its objectives. Based on the *Five Year Energy Conservation Plan: 2008-2013*, this risk can be seen as reflected in the objective of 79 GWh per year of energy savings (note that this savings target includes industrial programs that are not included in this process evaluation). An established framework for managing risk for DSM programs is to consider three factors:

- the program sponsor's risk tolerance—in this case, the tolerance for Newfoundland Power and Newfoundland and Labrador Hydro of falling short of the 79 GWh
- the relative riskiness of the programs included in the portfolio
- the portfolio design elements used to mitigate and balance individual program risk

If the *risk tolerance* factor is low, core programs with fairly standard and straightforward program designs are preferred. These programs will likely have anticipated high net-to-gross ratios and a track record of successful implementation in either Newfoundland or other Canadian provinces.

Given the past experience of Newfoundland Power, and Newfoundland and Labrador Hydro, with legacy energy conservation program design and implementation, valuable information about the relative success of different types of programs exists. Thus, *program risks* have been reduced by inclusion of two programs in the five-year plan that are continuations of previous programs (the Thermostat and Insulation programs).

The previous experiences of Newfoundland Power and Newfoundland and Labrador Hydro that provide knowledge of the relative riskiness of program types also suggests methods for *risk mitigation.* With programs that depend on being able to influence a mass market, risk can be mitigated to some extent by moving the program focus upstream to retailers and contractors. However, the effectiveness of this risk mitigation approach can depend on how much control the program sponsor can exert on the performance of upstream program allies. This currently is an evaluation question for the residential CDM programs.

Another consideration for the takeCHARGE program portfolio is managing risk over time. Generally, the longer the implementation plan cycle the more the economy and markets can change from initial assumptions. Technology risks (the risk that program technologies will not deliver the planned savings) are more likely to decline over time as performance characteristics are

more thoroughly understood. However, this can be countered by program reliance on emerging technologies, where risks are not as well understood. Also, some programs require more time to gain traction in markets—such as the Commercial Lighting program—while others can achieve savings fairly quickly (e.g., Insulation program). Balancing the portfolio to account for both quick starting programs and late-developing programs is therefore a risk mitigation strategy.

We recommend that future CDM portfolio planning considers this risk framework. One way to apply the framework is to explicitly align portfolio objectives with specific program design parameters and program elements. Specification of program design parameters describes how the portfolio objectives influence the programmatic composition of the portfolio. Then program design parameters can be linked to specific program elements. In a sense, this is an example of a *portfolio* logic model that clarifies the relationship between individual programs and the portfolio level objectives. Effective CDM portfolio planning will benefit from developing a detailed and articulated explanation of what programs are intended to achieve.

Table 5 provides a simple, illustrative example of applying this framework, with a summary of portfolio objectives aligned with possible design parameters and program elements. Two basic steps are followed: definition of energy efficiency "investment" objectives, and a focus on program and portfolio risk. Objectives are set to reflect both utility policy and regulatory standards, as well as program performance and customer service criteria. [NOTE: The objectives used in this table, while intended to be suggestive of the takeCHARGE objectives, are not claimed to represent the actual objectives for the CDM *Five Year Energy Conservation Plan: 2008-2013*.]

Table 5. Example Portfolio Objectives, Design Parameters, and Design Elements

Objective	Portfolio Design Parameters	Program Design Elements
Achieve 79 GWh per year of energy savings. The portfolio as a whole should be cost-effective against the Total Resource Cost (TRC of 1 or greater).	Concentrate on programs with a known track record and are straightforward to implement. • All measures screened; only consider cost-effective measures except where non cost-effective measures enhance the program. • Programs may be screened using Participant, TRC and Utility Cost UC) tests. • Portfolio screened using TRC, UC and Ratepayer Impact (RIM) tests. RIM test used for portfolio balancing purposes.	Incorporate program design elements to minimize free riders. • Ensure that the portfolio is cost-effective, but focus on meeting the full range of objectives. • All else equal, minimize rate impacts.
The portfolio should strive to make DSM services and measures available to all sectors. • The portfolio should include some hard-to-reach program elements • The portfolio should achieve a relative balance across sectors in the allocation of resources, with the primary criterion being the relative balance of potential	• Hard-to-reach sectors might include small commercial and rural residential. • The relative allocation of resources should be based on efficiency potential. This may suggest that the largest share of resources be allocated to the residential sector, followed by the commercial and industrial sectors. The allocation should be flexible.	• Include at least one program that is designed, or has program elements, for hard-to-reach sectors.
The portfolio should include market transformation activities. These activities can include information/education, training, and technical assistance depending on the market needs of specific sectors.	• Market transformation activities should be used where they (1) can help boost resource acquisition program effectiveness, (2)are an essential element of an acquisition program, and/or (3) help ensure sustainable market activity.	• All program designs should address the need for specific market transformation (and preparation) activities (e.g., trade ally training programs, awareness-building, etc.). • Seek opportunities to bundle ongoing and new activity into a comprehensive residential market preparation and transformation effort.
The portfolio should ensure fair competition.	• Program designs should be structured to support competitive delivery.	• Ensure program designs provide opportunity to customers to choose product and service suppliers.

The portfolio should strengthen customer service for Newfoundland Power and Newfoundland and Labrador Hydro, and create real value for customers.	• Program designs should incorporate customer input from each utility, include each utility's branding, and link program delivery to each utility's customer service functions.	• Ensure program designs incorporate links to each utility's customer service functions.

Appendix A. Best-Practices Review

The Cadmus Group's evaluation of takeCHARGE is presented in this assessment of online exposure relative to accepted best practices, which are listed below. We also provide recommendations for social media monitoring and outreach potential.

1. Goal and Methodology

The Cadmus team's goal for this analysis was to provide a comprehensive assessment of online properties, using interactive best practices as our guide. Following the Page Reviews section is the Best Practices section, which contains a high-level summary of the best practices used in this review.

Aggregate findings allowed us to identify both bright spots—elements that were done well— for replication throughout the site and opportunities for improvement. In conjunction with best-practice items listed, our Website review also contains specific comments regarding the following (as applicable):

- General look and feel
- Brand and message consistency
- Program accessibility
- Stakeholder criteria, including:
  - Rebate forms
  - Web-based marketing and educational collateral
  - Searchable retailer listings
  - Online processes availability

2. Page Reviews

takeCHARGE Home Page Review Comments

http://www.takechargenl.ca/

On this interactive platform, accessibility and consistency earn high marks. The clean design of the home page offers a clear path of action and multiple access points for program details.

Program color and font choices reflect a level of care rarely found on utility-built Websites. This attention to detail, while unobtrusive, provides customers and potential participants with a feeling of safety and calm as they navigate the site. The program colors also allow extension into other interactive and print elements, as appropriate, which increase recognition levels.

The takeCHARGE collateral also provides this consistent and recognizable formatting. In both online and in print brochures, takeCHARGE programs are clearly defined and presented in plain language. This is important because studies have shown that participation targets tend to be easily

overwhelmed by similar-seeming programs without clear demarcation or instruction. Consequently, in the presence of too much choice, participant targets often choose "no action."

The takeCHARGE interactive elements also take advantage of multi-media and social media opportunities. The videos, including TV commercials, feature real people in authentic situations, which translate well to potential participants. The tone and scripting of video messages also fit well with the brand itself: "You have the power to take control of your own energy use."

The takeCHARGE messaging does a good job of maintaining this simple, direct message. Marketing communication that maintains consistency in branding, messaging, and calls-to-action increases the opportunity for multiple impressions to act cumulatively on participant target behavior.

These bulleted suggestions identify opportunities to maximize the effectiveness of the already well-executed interactive exposure.

- **Capture visitor information on the home page** or by program for cross-marketing and additional promotional opportunities. When possible, gather demographic/ psychographic categories. Offer some value in exchange for data, such as additional rebates or sponsored prizes.
    - Encourage visitors to provide their name and email information to generate an automated email response with attachments of the appropriate forms and lists. These visitors become "warm" leads, or prospects that have self-selected in some way and are more likely to act This kind of automation is both customer-centered and allows for data capture for further marketing opportunities. It can also significantly reduce utility expenditures on call centers.

- **Lead with FREE.** The sponsoring utilities have created great value in the form of informational and entertaining videos. This educational material provides free energy-efficiency guidance, so it is something visitors can share with family and friends.
- **Include more case studies and testimonials from real customers.** This is an additional opportunity to engage participants to share success in user-generated content and/or contests. These Facebook page stories are good opportunities for highlighting the takeCHARGE message within the Website and/or other promotional material.
- **Identify a single point of contact**. Participation targets are easily overwhelmed by similar-seeming programs. As previously noted, in the presence of too much choice, the chosen option is often "no action." One single point of contact and one call to action are easier to remember, and this approach increases participation by all stakeholders. Currently, the site includes an email address for questions about the Website, so having a similar "go-to" email address for all program questions would benefit potential participants.
- **Market through the supply chain**. Our research (via surveys and interviews) on similar programs in other areas revealed that contractors and other trade allies were key links to efficiency decision makers. By providing online options, takeCHARGE offers the opportunity to connect trade allies with participants.

  Additionally, having region-specific strategic plans that reach contractors benefits both

residential and commercial programs and drives participation at the point of choice/purchase. Having online collateral for contractors for residential "leave behind" education provides co-marketing benefits with low distribution costs. These can also provide co-branding elements, a benefit to the trade allies.

- **Leverage social networks and influence social norms**. By providing messaging and widgets appropriate for social network distribution both online and in-person, takeCHARGE can build on current social media success. Groups such as stakeholder trade associations, community networks, Chambers of Commerce, LinkedIn groups, and multifamily email networks provide low-cost and high-volume information distribution vehicles.
- **Allay concerns and address barriers to participation**. All messaging efforts should lead with key messages that speak to barriers to participation and address concerns. In our findings with other programs, these concerns are consistently identified as lack of time, lack of money, and potential difficulties regarding participation. Web access and information can address these concerns and encourage the first step toward action.
- **Online applications for all rebates and programs will drive participation for some populations.** This kind of automated service can be very attractive to those residents and businesses that like to respond online. Automation also speeds the process and reduces paper use.
- **Capitalize on Social Media outreach**. Currently, takeCHARGE leverages Facebook and YouTube. Facebook advertising and specific Twitter handle outreach will maximize exposure. Also, many program targets are Linked In and participate in online groups where information can be distributed. Further, key online influencers can share program benefits in a structured, meaningful way. A sample social media road map is included in Section 4, and Cadmus will provide more detail and consultation, upon request.

3. Best Practices

Website/Online Best Practices

Landing page optimization:

- Leverage first impressions
  - Include a simple, attention-grabbing, and relevant offer
  - Keep offer highlights above the fold
  - Offer clear calls to actions
- Communicate value
  - Always ask "what's in it for my reader?"
  - Make offer attractive and easy to access
  - Target to site visitor as much as possible
- Keep it simple

  - Design clear and intuitive navigation
  - Don't make your visitor hunt for the program/offer
  - Offer simple forms
  - Request the minimum contact information for lead capture
- Maximize results by focusing on "conversion" (that is, on converting visitors to people who take an action)
  - Make the submit button or other acceptance-related button prominent
  - Offer more information and assistance in exchange for some attractive benefit
  - Become customer-centric; offer information ***and*** support
- Build trust
  - Communicate your privacy policy
  - Make sure visitors know where their information is going and how it will (or won't) be used
  - Offer value: many residents and businesses will be grateful for help understanding multiple energy-efficiency programs
- Test, measure, fine tune, repeat*

*Website designers serious about leveraging their online presence constantly test multiple landing page variables in image, copy, look and feel, offer, and lead marketing. While this may be outside the scope of NPI's current program planning, it is worthwhile to consider how this effort might serve participation results.

4. Social Media Best Practices and Road Map

Objective

Leverage traditional and cost-effective Web 2.0 marketing methods for takeCHARGE program branding, exposure, and participation.

Goals

- Support interest and participation in takeCHARGE programs
- Deliver warm leads and build prospect lists
- Communicate the takeCHARGE program vision and mission effectively and consistently
- Market, promote, and differentiate takeCHARGE's "online hub" for best-in-class program information, a like-minded community gathering place, and engaging user-generated content
- Increase takeCHARGE brand social network connections
- Identify and act on opportunities as they become apparent

Social Media Success Framework: Ongoing and Concurrent

A. ***Listen:*** Track and assess current online conversation.

B. ***Learn/Use:*** Identify influencers and conversational themes.

C. ***Engage/Moderate:*** Get connected and join the conversations!

D. ***Audit:*** Evaluate and build assets as needed.

A. Listen

Use social media analytic vendors to track key words and conversations. Key citizen insight and penetration data are accessible via "Listening" to social media online conversation

B. Learn/Use

- Aggregate trend data from "Listen."
- Identify key blog and twitter influencers with large followings.
- Collect lists for promotion and marketing.
- Comment on posts/Answer questions.
- Monitor competitive programs for intelligence and marketing ideas.

C. Engage: Create takeCHARGE Program Brand Social Network Presence

Key concepts: Educate, engage, and share

Success methods*:* Maintain a presence, join conversations, answer questions, make comments, and promote others' content

Action Items

1. Create takeCHARGE social media accounts, each of which will link to the appropriate takeCHARGE site and each other
    - Micro blogging= Twitter
    - Business Profile=Linked In
    - Personal Social/Business Group Profile=Facebook
2. Connect Accounts: Ping.fm and through the sites themselves
3. Set up timesaving Twitter tools
4. **Be Social!**
    - Set a schedule to check accounts
    - Read, comment, and post on related blogs
    - Tweet about articles of interest and about takeCHARGE announcements/partners

- Re-tweet to gain positive regard and build relationships
- Always drive visitors to or highlight takeCHARGE program benefits

Network-Specific Best-Practices Tactics

Linked In

Create accounts for each program stakeholder and key team members.

Attractive Link Targets:

- Regional influencers
- Related groups
- Business leaders
- Municipal leaders
- Energy-related thought-leaders

Twitter

Twitter works for exposure, relationship building, and short links to takeCHARGE program brand and partner sites. Staff members using a twitter account can be a critical avenue for flash announcements and, special offers. This is also a way to create exponential outreach with minimal staff time input.

Appendix B. Participant Survey Instrument

takeCHARGE Energy Saver Rebate programs
Participant Survey Instrument

Introduction

Intro. Hello, my name is [interviewer name], and I'm calling on behalf of Newfoundland Power and Newfoundland & Labrador Hydro takeCHARGE Energy Saver Rebate programs. May I speak with [sample name]?

1 Yes [GO TO INTRO2]
2 No [CONTINUE]

Intro1. Is there another adult in the household that is knowledgeable about your household's experience with the takeCHARGE Energy Saver Rebate programs that I could speak with?

1 Yes [CONTINUE]
2 No [ATTEMPT TO CONVERT]

Intro2. I'm with _____, an independent research firm. We have been hired to assist Newfoundland Power in evaluating some of the services they are offering to households as part of the takeCHARGE Energy Savers Rebate programs. I'm not selling anything; we would like you to help us complete important research about your experience with the programs. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

For quality and training purposes, this call will be recorded.

INTRO3 *(Why are you conducting this study: Studies like this help the utility better understand household's awareness of, satisfaction with and* need for energy programs like this.)

(Timing: This survey should take approximately 15 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL BACK AT: _____.)

(Sales concern: I am not selling anything; we would simply like to learn about your home's comfort, safety, and energy efficiency. This information will help Newfoundland Power best design and deliver energy programs to assist residential customers. Your responses will be kept confidential by our firm. If you would like to talk with someone about this study, feel free to call Sherina Wall at _____.

Screener 1 – takeCHARGE program rebate application processed/paid ('Participant')

S1 Our records indicate that you applied for and received a program rebate through [INSULTATION REBATE PROGRAM or THERMOSTAT REBATE PROGRAM or ENERGY STAR WINDOW REBATE PROGRAM] around [FinalStatusDate]. Is this correct?

1 Yes (skip to T1)
2 No

S2 As part of your participation you would have purchased [INSULATION or THERMOSTAT or WINDOWS]. Could you confirm that you remember purchasing this product?

1 Recalls purchasing product/services
2 Does not recall purchasing product/services – [PROBE TO ENSURE SPEAKING WITH CORRECT PERSON, IF NO ONE IS KNOWLEDGEABLE TERMINATE]

Program Information

T1 How did you first hear about the takeCHARGE program?
[ALLOW MULTIPLE RESPONSES]

1 Utility company representative
2 Utility bill insert
3 Direct mailing/letter/brochure from utility
4 Direct mailing/letter from the Program
5 Phone contact with the Program
6 Referral from another agency [SPECIFY]
7 Referral from a retailer or contractor
8 Friend, neighbor or relative
9 Landlord
10 Newspaper/radio media

11 Press releases
12 Program Posters
13 takeCHARGE Program website
14 Other [SPECIFY]
D (Don't know)
R (Refused)

T2 What was the main reason why you participated in the Program? *(DO NOT READ. ALLOW MULTIPLE RESPONSES)*

1 Wanted to reduce energy bill
2 Wanted to learn how to save energy
3 Wanted to pay off utility debt
4 House was uncomfortable
5 Didn't want to get disconnected
7 House needed improvements (insulation, windows, thermostat controls, etc.) [DESCRIBE]
8 Improve the health and safety of my home
9 Other [SPECIFY]
D (Don't know)
R (Refused)

T3 In purchasing the program-sponsored product the rebate covered some of the total cost, but you needed to pay the balance. Would purchasing the product have been easier if the program would have been able to:

1 Set up a payment plan
2 Set up a low-interest, short-term loan to pay costs off
3 Do anything else to defray the cost?
D (Don't know)

T4 Did you have any issues that may have delayed your participation in the program?

1 Yes
2 No
D (Don't know)

T5 (if T4=1) What did you experience that might have delayed your participation in the program?

1 Did not think my home needed the product/services obtained through the program/home already energy efficient
2 Other programs out there, federal or provincial, that considered participating in instead/confusion among the various programs (Specify other programs)
3 Did not have time/hassle of participating
4 Did not know how to participate/complete application
5 Didn't want someone in my house
6 My home was previously weatherized
7 The program and rebate sounded too good to be true
8 I didn't know what amount I would need to pay
9 I rent my home
10 House was for sale or sold
11 Other (SPECIFY)
D (Don' t know)
R (Refused)

T6 (if T4=1) What helped you to overcome any reason(s) for delaying participation?

1 Program information
2 Helpful retailer or contractor staff
3 Rebate application process easier than expected
4 Help in completing the rebate application process
5 The amount of the rebate
6 Measures/improvements/services available through the program
7 Other (SPECIFY)
D (Don't know)

T7 Were you planning to install the [INSULATION or THERMOSTAT or WINDOWS] improvements before learning about the program rebate?

1 Yes
2 No (SKIP TO T11)
D (Don' t know)
R (Refused)

T8 Had you already purchased or installed the [INSULATION or THERMOSTAT or WINDOWS] before learning about the program rebate?

1 Yes
2 No
D (Don’ t know)
R (Refused)

T9 If you had not received a rebate from the takeCHARGE program would you have installed:

1 A product that was LESS energy efficient than the one you installed?
2 A product of the SAME energy efficiency?
3 A MORE energy efficient product?
4 NO new product [INSULATION or THERMOSTAT or WINDOWS]
D (Don’ t know)
R (Refused)

T10 Without the takeCHARGE program rebate, would you have purchased and installed:

1 The SAME quantity of [INSULATION or THERMOSTATS or WINDOWS] that you purchased through the program?
2 FEWER quantity of [INSULATION or THERMOSTATS or WINDOWS]?
3 NONE of the [INSULATION or THERMOSTATS or WINDOWS]?
D (Don’t know)
R (Refused)

T11 Without the takeCHARGE program rebate, would you have purchased and installed the [INSULATION or THERMOSTAT or WINDOWS]…

1 Within the same year
2 In one to two years
3 In three to five years
4 More than five years out
5 Never
D (Don’t know)
R (Refused)

T12 On a scale of 1 to 5, where 1 is “not at all satisfied” and 5 is “very satisfied”, how satisfied are you with your experiences in the following areas with participating in the takeCHARGE Energy Saver Rebate program?

D DON’T KNOW
NA NOT APPLICABLE

___ The initial information you received about the program
___ Your dealings with the retailer or contractor from whom you purchased the product
___ Any energy assessment/audit conducted of your home prior to the installation of any products purchased through the program
___ Information provided to you through the program about how to install and/or use the product
___ Information provided to you through the program about how to maintain the installed product
___ The amount of time it took to receive the program rebate
___ [IF INSTALLED BY HOMEOWNER] The amount of time it took to complete the installation after you purchased the product through the program
___ [IF INSTALLED BY CONTRACTOR/INSTALLER] The amount of time it took to complete the installation after you purchased the product through the program
___ [IF INSTALLED BY CONTRACTOR/INSTALLER] The install crew and/or contractor that did the work on your home
___ [IF INSTALLED BY CONTRACTOR/INSTALLER] The install crew and/or contractor’s explanation of how to maintain the product installed
___ [IF INSTALLED BY CONTRACTOR/INSTALLER] The quality of work done
___ The comfort level of your home since the installation of the program product
___ The change if any in your energy bill since the completion of the work done
___ The program eligibility requirements
___ The application process
___ The amount of the rebate
___ Information provided by the takeCHARGE programs, or website, to help you identify things you can do to save energy
___ The overall program

T13 (IF T12<4) What could have made you more satisfied with the program product and services you received? [DO NOT READ. ALLOW MULTIPLE RESPONSES]

1 More helpful retailer or contractor staff
2 Shorter waiting period for getting rebate
3 Shorter waiting period for getting product installed
4 Changes in the eligibility requirements (PROBE FOR WHAT COULD BE CHANGED)
5 Less difficult application process
6 More or easier access to takeCHARGE program staff
7 More help or information on how to maintain the installed product
8 More energy-saving products available through the takeCHARGE programs (SPECIFY EXACT MEASURES)
9 More information about ways to control energy use
10 More assistance in the application process
11 Did not save the energy I was expecting
12 Other (SPECIFY)
D (Don't know)

T14 What do you think are the most important benefits of the takeCHARGE Energy Saver Rebate Programs? (INDICATE ALL THAT APPLY; PROBE: Anything else?)

1 Easier to pay utility bill
2 Home is more comfortable/less drafty
3 Save money/makes it easier to pay other expenses
4 Education I received about energy efficiency
5 Avoid getting disconnected
6 [ASK FOR WINDOWS PARTICIPANT ONLY] Improved the appearance of home
7 Increased value of home
8 [ASK FOR WINDOWS AND INSULATION PARTICIPANTs ONLY] Reduced noise level of home
9 Avoided having to move
10 Other (SPECIFY)
D (Don't know)

T15 How do you feel the program could be improved to make it more beneficial to households like yours? (RECORD VERBATIM)

Other Program-related Actions (Spillover)

O1 Since participating in the program, have you installed any other energy efficiency equipment rebated through a takeCHARGE program – but where you did not apply for a program rebate?

1 No [SKIP TO NEXT SECTION]
2 Yes
D (Don't know)

What products were they?

Type 1: _____ Quantity 1: _____

Type 2: _____ Quantity 2: _____

Type 3: _____ Quantity 3: _____

O2 (ASK FOR EACH PRODUCT TYPE) Was this product more efficient than you would have installed before participating in the takeCHARGE program, or about the same lvel of efficiency?

Type 1:	More efficient	About the same	Don't know
Type 2:	More efficient	About the same	Don't know
Type 3:	More efficient	About the same	Don't know

O3 With respect to the product(s) we've been discussing, on a scale from 0-10, with 0 indicating you **strongly disagree** and 10 indicating you **strongly agree**, please rate this statement:

My experience with the **[specific takeCHARGE program]** influenced me to install additional high efficiency equipment on my own.

(RECORD RESPONSE 0-10) _____

D (Don't know)

R (Refused)

Energy Use Information

Now, I would like to ask you questions about energy use in your home.

E1 As part of purchasing a product(s) rebated by the takeCHARGE program, did someone speak with you about ways to manage energy use in your home?

1 Yes
2 No
D (Don't know)

E2 On a scale of 1 to 5, with 1 meaning "no control" and 5 meaning "a great deal of control", how much control do you feel you have over how your household uses energy? _____ [RECORD D FOR DON'T KNOW]

E3 As a result of your participation in the takeCHARGE program, do you feel you have less control, more control, or the same amount of control over your household's energy use?

1 Less
2 The same
3 More
D Don't know

E4 Prior to participating in the program, would you say that your home was very energy efficient, somewhat energy efficient or not very energy efficient?

1 Very energy efficient
2 Somewhat energy efficient
3 Not very energy efficient
D Don't know
R Refused

E5 Since participating in the program, would you say that your home is very energy efficient, somewhat energy efficient or not very energy efficient?

1 Very energy efficient
2 Somewhat energy efficient

3 Not very energy efficient
D Don't know
R Refused

E6 Prior to participating in the program, would you say that your home was very comfortable, somewhat comfortable or not very comfortable?

1 Very comfortable
2 Somewhat comfortable
3 Not very comfortable
D Don't know
R Refused

E7 Since participating in the program, would you say that your home was very comfortable, somewhat comfortable or not very comfortable?

1 Very comfortable
2 Somewhat comfortable
3 Not very comfortable
D Don't know
R Refused

E8 On a scale of 1 to 5, with 1 being not at all important and 5 being very important, how important is lowering the cost of your energy bills to you?

1 Not at all important
2
3
4
5 Very important
D Don't know
R Refused

E9 In addition to the takeCHARGE Energy Saver Rebate Programs, which of the following energy efficiency initiatives are you familiar with? *(DO NOT READ. ALLOW MULTIPLE RESPONSES)*

1 Newfoundland and Labrador EnerGuide for Houses Program

2 ecoENERGY Retrofit
3 ENERGY STAR
4 Residential Energy Efficiency Program (REEP)
5 takeCHARGE of Your Town Challenge
7 How-to Videos available on the takeCHARGE website (www.takechargenl.ca)
8 Savings Tips or How's Your House? on the takeCHARGE website
9 Other [SPECIFY]
D (Don't know)
R (Refused)

E10 On a scale of 1 to 5, with 1 meaning "no interest" and 5 meaning "a great deal of interest," how interested are you in participating in a takeCHARGE program in the future? _____ [RECORD D FOR DON'T KNOW]

E11 What would be your main reason for participating in a future program? *(DO NOT READ. ALLOW MULTIPLE RESPONSES)*

1 Want to reduce energy bill
2 Want to learn how to save energy
3 Want to pay off utility debt
4 House is uncomfortable
5 Wouldn't want to get disconnected
7 House needs improvements (insulation, windows, thermostat controls, etc.) [DESCRIBE]
8 Improve the health and safety of my home
9 Moving to another house that needs improvements
10 Other [SPECIFY]
D (Don't know)
R (Refused)

House Characteristics

Next, I would like to ask you some questions about your household.

H1 Which of the following best describes your home? [READ LIST, ACCEPT ONLY ONE RESPONSE]

1 Detached House, no basement apartment (house separated on all sides from any other dwelling)
2 Semi-Detached House, Townhouse, or Row House, no basement apartment
3 Two Apartment Home (Detached/Semi-detached) House with basement apartment: Upstairs residence
4 Downstairs/Basement apartment (in two Apartment Home)
5 Mobile Home
6 Apartment in apsartment building (includes bachelor apartments – does not include basement apartment)
7 Other (SPECIFY)

H2 Including yourself, how many people live in your household?
_____People

H3 (IF H2>1) Including yourself, how many people currently living in your home year-round are in the following age groups? (TOTAL SHOULD EQUAL H2)

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older
R (Refused)

Comments Those are all the questions I have for you. Thank you very much for your interest in the takeCHARGE programs and this survey. Do you have any additional comments you would like me to note? *(IF YES, RECORD COMMENTS)*

1 Yes
2 No

Appendix C. Program Staff Interview Guide

THE CADMUS GROUP, INC.

Process Evaluation: Newfoundland Power takeCHARGE Energy Saver Rebate Programs

Program Staff Interview Guide

December 13, 2010

Name of Interviewee: _____ Date: _____

Title: _____

The following questions are designed to learn more about the programs, including program design, implementation and evaluation priorities. This interview will provide key inputs that the evaluation team can review to provide actionable recommendations for program design and implementation efforts.

Program Involvement & Roles

1. Could you please briefly summarize your role in administering the program(s)? What are your main responsibilities? [DETERMINE IF INVOLVED WITH ONE OR MORE OF THE PROGRAMS, AND HOW TO DISTINGUISH IN THE INTERVIEW]

2. Who are the key people involved in each of the program's implementation, what are their roles and how do they interact? [Probe for responsibilities of retailers and contractors, utility staff]. What are the formal and informal communication channels between these groups?

3. What program related activities are performed by the utilities? What program related activities are performed by the retailers and contractors?

4. Can you briefly describe the program? How is the program administered? [Are there program implementation manuals?]

Program Goals and Objectives

5. What are the goals of the programs (e.g. anticipated outputs/outcomes)? [PROBE TO IDENTIFY ADDITIONAL GOALS, PRIORITIES OF THOSE GOALS, IDENTIFY SHORT-TERM LONG-TERM OBJECTIVES] What are your program objectives?

6. Do you think the goals and objectives of the program(s) are clearly defined? Achievable? Are you aware of any conflicts between the program goals and day-to-day operations?

7. What is the basis for the design of the programs? (e.g., program theory process, regulatory directive, adapted from another utility)

8. [ASK IF PROGRAM THEORY WAS DEVELOPED] Does the program theory provide an estimate of how long it would take to achieve significant or sufficient participation from vendors to help design and launch the program?

9. What is your target market for the residential programs? For the commercial lighting program? Please describe the [market segments/customers] that are targeted by the program and why?

10. Have the [market segments/target customers] changed since program inception? What other segments would you like the program to market to? Does the program target particular trade allies? If yes, what types?

11. What is the size of the target market? What factors do you think would increase market demand? [E.G. MEASURES OFFERED, MARKETING AND OUTREACH, ETC]

12. Have the programs identified market barriers? If so, what are they? How do the programs seek to overcome potential market barriers?

13. How do the programs measure success? What performance metrics (e.g. measures of success) are you currently using to measure program performance?

14. How were the performance targets determined? [PROBE FOR DETAILS OF HOW THEY SET TARGETS FOR PARTICIPANTS, PER UNIT SAVINGS, AND EXPENSES]. What assumptions were used to develop targets? In these first two years, have any of these assumptions been revised?

15. How are the programs doing against their goals? Where are the specific areas where the programs are not performing as expected, if any? Are the program designs effective in meeting the program's goals? Do you think your future goals are realistic and achievable?

16. What recommendations do you have to achieve higher levels of participation?

Program Implementation

17. What implementation challenges have occurred and have they been overcome? If so, how? If not, why not? What is being done to address these challenges?

18. Have you made any changes to program design? If yes, what changes and why? Do you plan to make any changes to the program design? If so, what are they? What factors would determine success in order to expand this program?

19. Do you think that your program designs align well with your customer base?

20. What about the levels of incentives (rebates)? Do you think they are about right to stimulate participation? Would you recommend any changes to incentive levels?

21. [IF APPLICABLE] What is the process for determining what measures are recommended for a particular customer?

22. What is the current thinking on adding (or deleting) to program offerings for years 3 – 5 of the current 5-year plan? How are these changes researched and approved? If *measures* are either added or deleted: Do you obtain input from stakeholders, trade allies and/or evaluators on measures? On what conditions/basis would you drop a measure?

Program Design and Participation

23. What are some reasons why customers participate in the programs? What are some reasons why they do not participate?

24. What is the system in place to track program progress? Please describe.

25. What do you perceive to be the level of participant satisfaction with program processes, as well as the measures installed as part of the programs? Are participating customers generally satisfied with their program experience?

26. What fraction of customers think they saved money/energy? What is your best estimate of the proportion of targeted customers who are aware of the programs***? Anecdotal answers are fine here if no research is available***

27. Do the programs offer energy education to participants? What materials are provided? Are these helpful? Are they adequate?

28. [IF APPLICABLE] Is there any system in place to gather customer feedback related to the services they receive from the contractors? If so, how does this process work? How might you consider gathering this information in the future?

Marketing & Outreach

29. Could you please describe the marketing and promotion of the programs? [PROBE FOR PR EFFORTS, GENERAL MARKETING, PROGRAM WEBSITE AND REFERRALS BY TRADE ALLIES]. If you have created any marketing or other program materials beyond those on the takeCHARGE web site (audit forms, rebate forms, program power point, training manuals, low cost ways to save energy), can we arrange to obtain copies?

30. How are marketing and outreach efforts delivered to customers? What is the format of outreach? How often does outreach occur? Are the messages within the outreach clear and actionable? Do the messages align with customers' key motivations and drivers?

31. Does your program promote other federal programs to program participants? [IF YES] To which programs? Do you have a way to track channeling to these programs?

32. Do you think the level of marketing and promotion is appropriate for the programs? Do you think promotional efforts are successful? Do you think they reach the right audience? Do you feel current efforts are sufficient in reaching potentially interested customers?

33. Can you estimate what percent of the eligible market has participated? How does this vary by program?

34. Are their alternative marketing strategies you are considering to increase program participation? Possibilities include: change marketing approach, increase or decrease incentives, sell non energy benefits, work with different trade allies, develop new mechanisms to target and provide feedback to customers, co-market program with other utility services.

Program Tracking

35. Please describe the types of data you collect for the programs. What is your role in this data collection process? Who is responsible for maintaining these data?

36. What types of reports are produced to track program progress? (Ask for copies of reports) How often are these reports produced?

37. Do you find the information in the reports is adequate to give a comprehensive view of program status? Are there additional reports, or a different format for the current reports, that you think would improve program status tracking? (If yes) What are they?

38. [IF APPLICABLE] Do you track conversion rates, e.g. number of audits converted to measure installations? [ASK IF YES] What is your estimated conversion rate?

39. [IF APPLICABLE] Do you track project timing, e.g. how long it takes for a participant to apply for the program and have measures installed?

40. [IF APPLICABLE] What types of reporting do trade allies provide? Is reporting provided in a timely manner? How are these data provided to Newfoundland Power? Is the information easy to use?

41. [IF APPLICABLE] Do you find that the information that trade allies provide is adequate to give a comprehensive view of program status?

Quality Assurance & Control [AS APPLICABLE]

42. What are the procedures for program quality assurance and quality control? Who is responsible for their implementation? (If not mentioned above in reporting) Are there any reports/procedures in place to document QA/QC? If yes, could you describe these reports and provide me with copies?

43. Are measure installations (or audits) subject to inspection? IF YES, approximately what percentage of all [INSERT AUDIT/PROJECT] are pre-inspected and post-inspected? How do you determine if a [INSERT AUDIT/PROJECT] requires inspection (both pre- and post)?

44. [IF CONDUCT INSPECTIONS] Who conducts inspections and how are they documented?

45. Are the reported savings adjusted for findings from the QA/QC work? (If yes) Can you describe how the savings are adjusted? (Probe for site specific adjustments vs. extrapolation to population)

46. Do QA/QC results affect program design? If so, how?

47. Do you have any suggestions for improving QA/QC procedures?

Trade Allies [AS APPLICABLE]

48. Could you please describe the application process for trade ally "registration" with a program? [Probe for qualifications or training requirements.] Is there one staff member that oversees the program ally network?

49. How are trade allies recruited for the programs? Which types of trade allies are choosing to participate in the program(s) and which are not? What are the main benefits associated with participation?

50. What, if any, kind of training is provided to trade allies? What role do they have in marketing the program(s)? What kind of support, if any, is provided to them for marketing the program(s) to their customers?

51. What is expected of program allies? Are there any specific responsibilities that come with their involvement in programs?

52. Have retailers or contractors requested any other types of support/collateral, etc. If so, what have they requested and how are you responding to their requests?

Coordination with Other Organizations

53. Can you describe any coordination activities you may have with other organizations in terms of program planning or implementation? Do the retailers/contractors coordinate in any manner? How so?

54. Are there any ways that coordination could be improved?

Staffing and Communication

55. [IF NOT COVERED IN "PROGRAM ROLES"] Could you please describe how the program management responsibilities are divided among staff at your utility? (Probe for number of staff and responsibilities of each)

56. Do you find that the responsibilities are divided in an optimal way? Are there any changes in roles and responsibilities that you think might improve the management and implementation of the programs?

57. Do you think you have the right level of staffing to manage the programs? (If no) What additional staff would you need?

58. Do you find that the communication between you and other staff at your utility is effective?

59. Are the program staff under marketing, regulatory, or a different department in your utility? Do you think this is the appropriate department?

60. Do the program staff get the needed support from management? What changes might you recommend?

Evaluation Priorities

61. What do you see as the top priorities for program evaluation?

62. Are there any research areas that evaluations should explore that would provide you the information you need to improve your programs?

Thank you very much for taking the time to assist us with this evaluation. Your contribution is a very important part of the process. May we follow-up with you by phone or e-mail later, if additional questions arise?

Appendix D. Participating Trade Ally Interview Guide

THE CADMUS GROUP, INC.

Process Evaluation: Newfoundland Power takeCHARGE Energy Saver Rebate Programs

Participating Trade Ally Interview Guide

December 13, 2010

Name of Interviewee: _____ Date: _____

Company: _____

The following questions are designed to learn more about the programs, including program design, implementation and the involvement of retailers and contractors. This interview will provide key inputs that the evaluation team can review to provide actionable recommendations for program design and implementation efforts. The Energy Saver Rebate programs we are studying are:

- Insulation Rebate Program
- Thermostat Rebate Program
- ENERGY STAR Window Rebate Program
- Commercial Lighting Program

Program Involvement

63. Could you please briefly summarize your involvement with the program(s)? What are your typical activities with respect to the program(s)? [DETERMINE IF INVOLVED WITH ONE OR MORE OF THE PROGRAMS, AND HOW TO DISTINGUISH IN THE INTERVIEW]

64. With whom do you most frequently interact with in your program involvement? What are the formal and informal communication channels between your company and the program(s)?

65. From your perspective, what program-related activities are performed by the utilities? What program related activities are performed by the retailers and contractors?

66. Based on your experience, could you please briefly describe how the program(s) operate?

Program Goals and Objectives

67. What do you see as the goals of the programs (e.g. anticipated outputs/outcomes)? [PROBE TO IDENTIFY ADDITIONAL GOALS, PRIORITIES OF THOSE GOALS, IDENTIFY SHORT-TERM LONG-TERM OBJECTIVES] What are your objectives for participating in the programs?

68. Do you think the goals and objectives of the program(s) are clearly defined for the participating retailers and contractors? Are you aware of any conflicts between the program goals and day-to-day operations of your company?

69. What do you see as the target market for the residential programs? [IF APPROPRIATE] For the commercial lighting program? Please describe the [market segments/customers] that you think are targeted by the program and why?

70. What other segments would you like the program to market to?

71. Are the programs targeting the appropriate trade allies? If others could be involved, what types?

72. What do you think could increase market demand? [E.G. MEASURES OFFERED, MARKETING AND OUTREACH, ETC]

73. What do you see as the barriers to program participation? How does your company, and the programs more generally, seek to overcome potential market barriers?

74. Do you have an opinion as to how the programs are doing against their goals? Are the program designs effective in meeting the program's goals?

75. What recommendations do you have to achieve higher levels of participation?

Program Implementation

76. Have you experienced any problems or challenges with implementing the programs as a participating retailer/contractor? What implementation challenges have occurred and have they been overcome? If so, how? If not, why not? What is being done to address these challenges?

77. Do you think that the programs as designed are well-suited to the targeted customers?

78. What about the level of incentives? Do you think they are about right to stimulate participation? [PROBE FOR REACTIONS/OPINIONS]

79. [IF APPLICABLE] What is the process for determining what measures are recommended for a particular customer?

80. Do you have any advice regarding either adding or deleting specific energy saving measures? [IF APPLICABLE, PROBE FOR REASONS] Have you provided this input to the programs?

Program Design and Participation

81. In your experience, what are some reasons why customers participate in the programs? What are some reasons why they do not participate?

82. What do you perceive to be the level of participant satisfaction with program processes, as well as the measures installed as part of the programs? Are participating customers generally satisfied with their program experience?

83. In your experience, what fraction of customers think they saved money/energy? What is your best estimate of the proportion of targeted customers who are aware of the programs***?***

84. Do the programs offer energy education to participants? What materials are you involved with providing? Are these helpful? Are they adequate?

85. [IF APPLICABLE] Is there any system in place for you to provide to the programs any customer feedback you receive about the programs? If so, how does this process work? How might you consider gathering and providing this information in the future?

Marketing & Outreach

86. Could you please describe any marketing and promotion of the programs that involves your company? [PROBE FOR PR EFFORTS, GENERAL MARKETING, PROGRAM WEBSITE AND REFERRALS BY TRADE ALLIES].

87. Are the messages within the marketing outreach clear and actionable? Do the messages align with customers' key motivations and drivers?

88. Do the programs promote other federal programs to program participants? [IF YES] Are you involved with these promotions?

89. Do you think the level of marketing and promotion is appropriate for the programs? Do you think promotional efforts are successful? Do you think they reach the right audience? Do you feel current efforts are sufficient in reaching potentially interested customers?

90. Can you estimate what percent of the eligible market has participated? How does this vary by program?

91. Are their alternative marketing strategies that you think should be considered? [IF YES] What are they?

Program Tracking

92. Please describe any types of data or reporting you provide to the programs. [IF APPROPRIATE] How is the information provided to the programs? What is your role in this reporting process?

93. [IF APPLICABLE] Do you track conversion rates, e.g. number of audits converted to measure installations? [ASK IF YES] What is your estimated conversion rate?

94. [IF APPLICABLE] Do you track project timing, e.g. how long it takes for a participant to apply for the program and have measures installed?

Quality Assurance & Control [IF APPLICABLE]

95. Are measure installations (or audits) subject to inspection? IF YES, approximately what percentage of all [INSERT AUDIT/PROJECT] are pre-inspected and post-inspected? How is it determined if a [INSERT AUDIT/PROJECT] requires inspection (both pre- and post)?

96. [IF CONDUCT INSPECTIONS] Who conducts inspections and how are they documented?

97. Do QA/QC results affect program design? If so, how?

98. Do you have any suggestions for improving QA/QC procedures?

Trade Allies [AS APPLICABLE]

99. Could you please describe the application process for trade ally "registration" with a program? [Probe for qualifications or training requirements.]

100. How are retailers and contractors recruited for the programs? Which types of contractors are choosing to participate in the program(s) and which are not? What are the main benefits associated with participation?

101. What, if any, kind of training is provided to trade allies?

Coordination with Other Organizations

102. Can you describe any coordination activities you may have with other organizations in terms of your participation in the programs? For example, do the retailers/contractors coordinate in any manner? How so?

103. Are there any ways that coordination could be improved?

Staffing and Communication

104. Do you find that the communication between your company and program staff is effective?

Thank you very much for taking the time to assist us with this evaluation. Your contribution is a very important part of the process.

Appendix E. Non-participating Trade Ally Interview Guide

THE CADMUS GROUP, INC.

Process Evaluation: Newfoundland Power takeCHARGE Energy Saver Rebate Programs

Participating Trade Ally Interview Guide

December 13, 2010

Name of Interviewee: _____ Date: _____

Company: _____

The following questions are designed to learn more about the programs, including program design, implementation and the involvement of retailers and contractors. This interview will provide key inputs that the evaluation team can review to provide actionable recommendations for program design and implementation efforts. The Energy Saver Rebate programs we are studying are:

- Insulation Rebate Program
- Thermostat Rebate Program
- ENERGY STAR Window Rebate Program
- Commercial Lighting Program

Program Involvement

105. Could you please briefly summarize your involvement with the program(s)? What are your typical activities with respect to the program(s)? [DETERMINE IF INVOLVED WITH ONE OR MORE OF THE PROGRAMS, AND HOW TO DISTINGUISH IN THE INTERVIEW]

106. With whom do you most frequently interact with in your program involvement? What are the formal and informal communication channels between your company and the program(s)?

107. From your perspective, what program-related activities are performed by the utilities? What program related activities are performed by the retailers and contractors?

108. Based on your experience, could you please briefly describe how the program(s) operate?

Program Goals and Objectives

109. What do you see as the goals of the programs (e.g. anticipated outputs/outcomes)? [PROBE TO IDENTIFY ADDITIONAL GOALS, PRIORITIES OF THOSE GOALS, IDENTIFY SHORT-TERM LONG-TERM OBJECTIVES] What are your objectives for participating in the programs?

110. Do you think the goals and objectives of the program(s) are clearly defined for the participating retailers and contractors? Are you aware of any conflicts between the program goals and day-to-day operations of your company?

111. What do you see as the target market for the residential programs? [IF APPROPRIATE] For the commercial lighting program? Please describe the [market segments/customers] that you think are targeted by the program and why?

112. What other segments would you like the program to market to?

113. Are the programs targeting the appropriate trade allies? If others could be involved, what types?

114. What do you think could increase market demand? [E.G. MEASURES OFFERED, MARKETING AND OUTREACH, ETC]

115. What do you see as the barriers to program participation? How does your company, and the programs more generally, seek to overcome potential market barriers?

116. Do you have an opinion as to how the programs are doing against their goals? Are the program designs effective in meeting the program's goals?

117. What recommendations do you have to achieve higher levels of participation?

Program Implementation

118. Have you experienced any problems or challenges with implementing the programs as a participating retailer/contractor? What implementation challenges have occurred and have they been overcome? If so, how? If not, why not? What is being done to address these challenges?

119. Do you think that the programs as designed are well-suited to the targeted customers?

120. What about the level of incentives? Do you think they are about right to stimulate participation? [PROBE FOR REACTIONS/OPINIONS]

121. [IF APPLICABLE] What is the process for determining what measures are recommended for a particular customer?

122. Do you have any advice regarding either adding or deleting specific energy saving measures? [IF APPLICABLE, PROBE FOR REASONS] Have you provided this input to the programs?

Program Design and Participation

123. In your experience, what are some reasons why customers participate in the programs? What are some reasons why they do not participate?

124. What do you perceive to be the level of participant satisfaction with program processes, as well as the measures installed as part of the programs? Are participating customers generally satisfied with their program experience?

125. In your experience, what fraction of customers think they saved money/energy? What is your best estimate of the proportion of targeted customers who are aware of the programs***?***

126. Do the programs offer energy education to participants? What materials are you involved with providing? Are these helpful? Are they adequate?

127. [IF APPLICABLE] Is there any system in place for you to provide to the programs any customer feedback you receive about the programs? If so, how does this process work? How might you consider gathering and providing this information in the future?

Marketing & Outreach

128. Could you please describe any marketing and promotion of the programs that involves your company? [PROBE FOR PR EFFORTS, GENERAL MARKETING, PROGRAM WEBSITE AND REFERRALS BY TRADE ALLIES].

129. Are the messages within the marketing outreach clear and actionable? Do the messages align with customers' key motivations and drivers?

130. Do the programs promote other federal programs to program participants? [IF YES] Are you involved with these promotions?

131. Do you think the level of marketing and promotion is appropriate for the programs? Do you think promotional efforts are successful? Do you think they reach the right audience? Do you feel current efforts are sufficient in reaching potentially interested customers?

132. Can you estimate what percent of the eligible market has participated? How does this vary by program?

133. Are their alternative marketing strategies that you think should be considered? [IF YES] What are they?

Program Tracking

134. Please describe any types of data or reporting you provide to the programs. [IF APPROPRIATE] How is the information provided to the programs? What is your role in this reporting process?

135. [IF APPLICABLE] Do you track conversion rates, e.g. number of audits converted to measure installations? [ASK IF YES] What is your estimated conversion rate?

136. [IF APPLICABLE] Do you track project timing, e.g. how long it takes for a participant to apply for the program and have measures installed?

Quality Assurance & Control [IF APPLICABLE]

137. Are measure installations (or audits) subject to inspection? IF YES, approximately what percentage of all [INSERT AUDIT/PROJECT] are pre-inspected and post-inspected? How is it determined if a [INSERT AUDIT/PROJECT] requires inspection (both pre- and post)?

138. [IF CONDUCT INSPECTIONS] Who conducts inspections and how are they documented?

139. Do QA/QC results affect program design? If so, how?

140. Do you have any suggestions for improving QA/QC procedures?

Trade Allies [AS APPLICABLE]

141. Could you please describe the application process for trade ally "registration" with a program? [Probe for qualifications or training requirements.]

142. How are retailers and contractors recruited for the programs? Which types of contractors are choosing to participate in the program(s) and which are not? What are the main benefits associated with participation?

143. What, if any, kind of training is provided to trade allies?

Coordination with Other Organizations

144. Can you describe any coordination activities you may have with other organizations in terms of your participation in the programs? For example, do the retailers/contractors coordinate in any manner? How so?

145. Are there any ways that coordination could be improved?

Staffing and Communication

146. Do you find that the communication between your company and program staff is effective?

Thank you very much for taking the time to assist us with this evaluation. Your contribution is a very important part of the process.

Newfoundland and Labrador Hydro

takeCHARGE! Final Report

July 2011

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1 OVERVIEW

In November 2010 Summerhill was commissioned to design and execute a pilot energy efficiency program for Newfoundland and Labrador (NL) Hydro, under their existing takeCHARGE! brand.

The objectives of the pilot were to:

- Achieve an energy savings of 0.8 GWh;
- Introduce an energy efficiency campaign to the rural NL market and assess their uptake; and
- Gather market data while testing several marketing strategies, event types and product offerings.

To deliver on these objectives, four distinct campaign components were designed and delivered, including ongoing discount coupons on energy efficient products, a seasonal lighting exchange campaign, a community outreach event with energy efficient product give-aways, and an incandescent/CFL bulb exchange event. Each component was executed by one of nine local field representatives, hired and trained by Summerhill to operate in each of the ten NL Hydro community regions: Labrador City/Wabush, Happy Valley/Goose Bay, St. Anthony, Rocky Harbour, Triton, Fogo Island, Harbour Breton and Burgeo.

These four campaign elements successfully resulted in a net savings of 473,028.48 kWh. The program results calculations can be found in Appendix D of this document. The event-based portions of the campaign proved most successful in achieving the portfolio's targets and in engaging the public; accounting for 84 % of the total kWh savings.

Component	Net kWh saved	% of Total
Energy Efficient Product Coupons	73,795.15	16%
Seasonal Lighting Exchange	24,796.80	5%
Community Outreach Events	239,967.69	51%
"Buck a Bulb" Exchange Event	134,468.84	28%
Total:	**473,028.48**	**100%**

Together the seasonal lighting campaign, the outreach events and the CFL campaign engaged approximately 1,750 NL Hydro customers and acquired 399,233.33 kWh of savings. While encouraging the uptake of the discount coupons proved to be a challenging component to the overall program, the lessons learned through delivery were important. The overall TRC ratio of the work was positive at 2.05.

Another positive outcome of the work was the information gathered about the NL Hydro communities, retailers and program participants. Information was gathered via anecdotal feedback from the field representatives and retail location owners and from two surveys, one done online and one done in-store during the CFL event. The information points to significant cultural differences across the ten NL Hydro community regions that affect program delivery and will be valuable to consider when designing any subsequent phases of work.

The positive results achieved through this pilot work demonstrate without question that NL Hydro customers are responsive, engaged and easily motivated to take action and move along the energy efficiency continuum as evidenced by the overwhelming response to program events. Looking to the future, NL Hydro can be certain that their campaigns have lasting positive implications for their customer base, through educating and encouraging the uptake of energy efficient behaviors and products.

1.1 Delivering on Success Factors

To ensure the work achieved successes important to NL Hydro, a set of 10 characteristics of success were developed at the onset of the work. The chart on the following pages lists the success characteristics and shows the strong progress made with successes achieved.

Characteristic of Program Success	Success Achieved
1. Strong information sharing from local retailers, indicating a solid partnership.	• A total of 39 potential retail partner locations have been identified throughout Hydro territory. • A total of 20 independent retail locations participated in at least one of the program initiatives. • Participating retailers willingly signed participation agreements and were forthcoming with information on pricing, inventory, stock and ordering practices. • Retailers provided feedback on how to best reach potential participants, through means such as direct mailers and use of the community channels. • Retailers expressed desire to be a part of NL Hydro's future programs.
2. Strong uptake of the program offer across all Newfoundland Hydro regions.	• The online contest survey had 140 entries from participants across 35 different communities; at least one from each of the NL Hydro regions. • Energy efficient coupons were offered in 13 distinct communities in the NL Hydro regions. • The SLED event, product give away events and CFL events took place in 9 of 10 NL community regions. • Two regions proved challenging in terms of program execution and therefore uptake – Port Hope Simpson and Ramea.
3. Results that support the internal GWH reductions target (reducing 4 GWH to 3.2 GWH).	• 71% of online contest survey respondents indicated that takeCHARGE! helped them to replace an inefficient product in their home. • Results from the community give-away event, SLED event and coupon uptake have resulted in a positive TRC test ratio of 2.05% • Overall kWh reductions totaled 473,028.49 kWh
4. The delivery of a new program to customers.	• Previous SLED events had been run in partnership with municipalities, rather than local retailers. The retailer model was new to NL Hydro territory SLED events. • Product give-aways engaging the public on energy conservation were new to Hydro regions. • The "A Buck A Bulb" CFL event model was new to Hydro regions.

5. The gathering of learnings about the customer base and what works when interacting with them.	• Online contest survey responses showed that 44% of respondents heard about the takeCHARGE! coupons through the field representatives, 17% from local retailer promotions and 13% from ads on local community channels. • In-store survey responses showed that 50% of respondents heard about the CFL event through the direct mail flyer, 36% from local retailer promotions and 13% through word of mouth promotions.
6. Reduced misconceptions around efficiency amongst the local populations.	• 50% of online contest survey respondents reported learning something new about energy conservation from field representatives, while 19% learned from the website or from interactions with their retailer. • A total of 97% of online survey respondents reported learning something new about energy conservation from the takeCHARGE! Program. • Community outreach reports from field reps indicated that the events provided an opportunity to address misconceptions. • 53% of in-store survey respondents reported that they strongly believe energy efficiency products are safe and effective.
7. Increased market penetration of products, especially CFLs.	• 45% of online survey respondents purchased more than one product with the takeCHARGE! coupons. • 1,800 CFL bulbs were given away during the community outreach give away events. • 7,704 CFLs were purchased during the CFL event.
8. Branding the work so that it connects strongly to the existing takeCHARGE! brand's call to action.	• All offer and event collateral generated was branded with the takeCHARGE! logo and/or call to action – see Appendix B for examples. • At the end of program delivery, field representatives rated their region's awareness of the takeCHARGE! brand's connection to NL Hydro strongly at either 3/5 or 4/5; 5 being the greatest awareness possible.
9. Moving customers along the sustainability continuum.	• Anecdotal feedback from field representatives indicated that participants would have liked discounts off of energy efficient specialty lighting products such as energy efficient recessed lighting, dimmable and torchiere bulbs. • 22% of online survey respondents also took advantage of other takeCHARGE! residential rebates, including insulation, programmable thermostats and window rebates.
10. Increased uptake of efficiency on South coast	• The fifth highest SLED event results were achieved in L'Anse Au Clair. • 300 pieces of pipe wrap and 200 CFLs were distributed in the Forteau region • 130 CFLs were purchased during the Forteau CFL event

of Labrador.	• Online contest entries were received from L'Anse au Clair, L'Anse au Loup and Forteau

1.2 Achieving Targets

Beyond the goals set out in the chart of success factors, an overall set of energy efficient product uptake targets were set to support NL Hydro's goal of reducing 4 GWH to 3.2 GWH. The targets were based on data from other energy efficiency campaigns that had taken place, and were compiled by Dunsky Energy Consulting, industry leaders in energy efficiency analysis. Ensuring the program was TRC positive was also a goal of the targets.

In most cases, a range of targets was provided by Dunsky Energy Consulting, given the pilot nature of the work. The "low targets" represented a typical level of uptake in rural communities. "High targets" reflected a situation whereby an energy efficiency campaign had not yet been offered in a region and a build-up in demand could be expected, causing inflated results. It was initially assumed that the NL Hydro customers would lie somewhere within this target range. After operating the program for three months, targets were reassessed using uptake data gathered since program implementation. The revised targets reflect the reassessed target situation. The following chart summarizes the targets and achievements based on the combined results of the pilot program work.

Energy Efficiency Products for Purchase	Targets and Results			
	Revised Target	Low Target	High Target	Results Achieved
ENERGY STAR CFLs	5,915	6,800	11,610	10,112
ENERGY STAR Indoor Light Fixture	35	120	250	74
Power Bar with Timer	12	40	80	12
Timer for Lighting	21	120	250	16
Lighting Motion Sensor	50	120	240	57
Tank Insulation Blanket	44	10	20	48
Pipe Insulation Wrap	/	/	3,000	2,700
Low Flow Shower Head	10	20	40	27
Seasonal LED Light Sets	5,406	3,500	4,000	6,145
ENERGY STAR Dishwashers	/	80	160	76
ENERGY STAR Fridges	/	40	80	29

1.3 Total Resource Cost

Given the pilot nature of the work, achieving a positive TRC ratio was important to ensuring the program activities were cost effective and beneficial to the communities relevant to the investment. It should be noted that the program design focused on increasing the ratio, through focusing attention on increasing the uptake of key products that have an especially high impact on the ratio. The result was a TRC ratio of 2.05, according to measurement tools provided by Dunsky Energy Consulting during the design of the program.

2 EVENTS & DELIVERY

To achieve the overall program results, four campaign elements were successfully executed. The following sections provide a detailed account of these elements that comprised the takeCHARGE! body of work, and the measurable, positive results that each achieved.

2.1 Energy Efficiency Coupons

The backbone of the takeCHARGE! program was a series of coupons offered on 10 energy efficient products. These coupons were in market from November 22nd 2010 to April 30th 2011.

The following discounts were offered through the coupons:

Product	Discount / Incentive Type
ENERGY STAR lighting fixtures	$15.00 instant rebate
Timers for outdoor lighting	$10.00 instant rebate
Outdoor motion sensors	$10.00 instant rebate
Holiday LED lights	$5.00 instant rebate
ENERGY STAR top freezer refrigerators	$50.00 mail in rebate
Power Bars with timers	$7.00 instant rebate
Low flow shower heads	$10.00 instant rebate
ENERGY STAR CFL Bulbs (2 packs)	$2.00 instant rebate

Tank Wrap Insulation	$15.00 instant rebate
ENERGY STAR dishwasher	$50.00 mail in rebate

Local retailers in targeted communities were approached to procure products and offer the coupons for the duration of the program. The rebates on the ENERGY STAR® qualified dishwasher and refrigerator were made available more widely to the entire NL Hydro customer base, by offering them on a mail-in basis.

Retailers were encouraged to promote the program and were provided with branded posters and coupons to distribute as "bag stuffers". Additionally, field representatives distributed coupons around the community in branded envelopes. Examples of the coupons, envelopes and posters can be found in Appendix B.

Overall, the coupons were offered by 14 retailers in nine of the 10 NL community areas. Appendix C shows retailers that offered the coupons at their locations. The chart below shows the variable uptake of products both within and between regions.

The results indicate that a relatively passive approach to promoting energy efficient products in rural NL may not be effective during the winter season, when shopping is reduced amongst the communities. Results also indicate that there is a need for further outreach and education pertaining to certain products, which are likely less understood in terms of their energy saving capabilities, such as timers for lighting.

			Energy Efficiency Product Results by Targeted Community (event based results included)																
PRODUCT SOLD	Burgeo	Hr. Breton	Wabush	Fogo	Goose Bay	Rocky Hr.	Port Hope	St. Anthony	L'Anse Au Clair	Roddickton	Triton	LaScie	Seldom	St. Albans	Lab City	TOTAL	Revised Target	Low Target	High Target
ENERGY STAR CFL's	1,372	2,581	0	82	294	638	0	416	162	14	454	6	955	60	1,278	8,312	5,915	6,800	11,610
ENERGY STAR Indoor Fixture	14	26	0	0	0	0	0	0	1	1	0	6	3	7	16	74	35	120	250
Power Bar with Timer	3	0	0	1	7	0	0	0	0	0	0	0	1	0	0	12	12	40	80
Timer for Lighting	0	0	0	0	6	7	0	0	1	0	0	0	1	0	1	16	21	120	250
Motion Sensor Lights	17	0	0	0	25	0	0	3	2	1	5	0	4	0	0	57	50	120	240
Tank Insulation Blanket	4	37	0	2	0	1	0	0	0	1	0	0	0	0	3	48	44	10	20
Low Flow Shower Head	5	8	0	2	7	0	0	0	2	0	1	0	0	0	2	27	10	20	40
Seasonal LED Light Sets	291	925	57	809	737	904	167	0	620	1,160	0	2	0	0	473	6,145	5,406	3,500	4,000

ENERGY STAR Refrigerator	29	/	40	80
ENERGY STAR Dishwasher	76	/	80	160

A field reresentative hands out takeCHARGE! coupons during the "A Buck A Bulb" event in Labrador City.

2.2 Holiday Lighting Exchange Campaign

A holiday lighting exchange campaign kicked off the program events in November 2010. This portion of the program called on participants to exchange an old, inefficient holiday light string with the incentive of $10.00 off a new set of LED lights (twice the regular coupon offering).

Prior to the events, representatives attended a webinar training session with content generated by Summerhill and NL Hydro. Nine field representatives were trained on energy efficiency messaging, the process for executing an event and on general content about NL Hydro.

Retailers in each community were approached with a memorandum of agreement to host the event and procure inventory. Retailers were secured in nine of the 10 NL Hydro community areas and the following chart shows the event results by participating community.

Holiday Lighting Exchange Campaign Results				
Community	Number of Strings Returned	Number of Strings Purchased	Number of Customers Engaged	Average Number of Sets/ Customer
Rocky Harbour	944	940	110	8.5
Fogo	574	555	103	5.4
Roddickton	1025	973	102	9.5
Burgeo	282	291	62	4.7
Harbour Breton	352	352	42	8.4

Wabush	61	56	15	3.7
Goose Bay	235	200	60	3.3
South Coast Labrador	450	400	40	10
Port Hope Simpson	169	169	45	3.7
Total Results:	4,092	3,936	579	6.8

The seasonal lighting events were extremely successful; engaging approximately 580 NL Hydro customers and nearly exceeding the high target of 4,000 strings in just one weekend. Additionally, awareness about the energy and financial savings related to efficient seasonal lighting was generated, as evidenced by the 2,209 strings that were subsequently purchased with the takeCHARGE! coupons, after the event weekend. This event accounted for 24,796.8 kWh hours saved, or 5% of the overall program results.

It is important to note that because this event was an exchange, the results also include a waste diversion component whereby old inefficient strings were responsibly recycled, as opposed to being sent to landfill. Participant feedback suggests that this was an added bonus since recycling is not widely available in most NL community areas.

In terms of improving on the event, anecdotal feedback from field representatives suggests that participants would have appreciated a longer campaign, since word of mouth caught on after the event had finished. This feedback is reinforced by the excellent uptake of the product after the event conclusion.

It is also important to note that retailer feedback was highly positive after the event, despite the newness of the model, likely as a result of the unprecedented sales and traffic caused by the event.

The following picture shows inefficient incandescent light strings collected during one of the seasonal lighting exchange events.

Inefficient incandescent lighting strings are piled, waiting to be recycled after the SLED event in Rocky Harbour.

2.3 Community Outreach Events

In January 2011, the field representatives were tasked with generating customized regional outreach plans to be executed at upcoming and recurring events in their respective communities and regions. The purpose of these events was to enable the field representatives to engage the community in conversations about energy efficiency, NL Hydro and the takeCHARGE! brand and coupons. While customized plans were made, each event had standard elements, including an educational presentation component, a takeCHARGE! branded station with refreshments and product giveaways including 300 pieces of insulating pipe wrap and 100 2 packs of 13 Watt CFL bulbs.

The events were successful in engaging approximately 600 community members and giving away a total of 2,700 pieces of insulating pipe wrap and 1,800 CFL bulbs in nine of the 10 NL Hydro community regions. The energy savings achieved by these components totaled 239,967.69 kWh, or 51% of the total energy savings of the program.

The following picture of a field representative with a participant was taken at one of the outreach events in Southern Labrador.

A field representative talks about energy efficient products, one-on-one at a Women's Group Night in Southern Labrador.

On average, the field representatives reported needing to arrange approximately 2-3 events in the surrounding communities in order to distribute the entirety of the give-away materials, as a result of the smaller sizes of typical early winter events. There was significant variation between the types of outreach events attended, from local women's gatherings to larger-scale sports events and game nights.

Feedback about the event model indicates that product giveaways generated strong reactions in the community. It was reported that the majority of individuals were extremely happy to be engaged by NL Hydro and receive a free energy efficient product. In rare instances, some individuals felt as though there must be a "catch" to receiving the give-away.

Reports also indicate that it was easier to give away the CFL bulbs than the pipe wrap, owing likely to a higher degree of familiarity with CFL technology and the need for lighting products. Community responses to the free pipe wrap were polarized. Those who felt they had a need for pipe wrap, such as those experiencing problems with piping and water temperature, were extremely grateful. Conversely, perceptions regarding the pipe wrap were reportedly less enthusiastic in some regions, most specifically Labrador City and Wabush. Feedback from the field representative in this region suggests that community members felt they had no need for the wrap and were more interested in the CFL bulbs. This may indicate need for further outreach about products that reduce energy consumption via other means than lighting retrofits.

On the whole, the community outreach giveaways were successful in achieving their goals and targets; showing that active engagement of NL community members through an event was an effective route to achieving targets.

2.4 A Buck A Bulb CFL Campaign

The "A Buck a Bulb" CFL event component was added to the program design in February of 2011. The purpose of the event was to re-engage communities about energy efficiency while increasing the uptake of CFL bulbs and continually promoting the uptake of the takeCHARGE! coupons.

In order to participate in the "A Buck a Bulb" deal, participants were asked to bring in an incandescent bulb from their home, to receive an in-store rebate on a 2, 3, 4 or 6 pack of ENERGY STAR ® qualified CFLs, at the price of $1.00 per bulb in the multipack. Participants could bring in several incandescent bulbs from their homes in order to get several vouchers.

Retailers from each of the 10 NL Hydro community regions were offered the chance to host the CFL campaign and many expressed that they were grateful for the opportunity.

The field representatives were retrained via conference call with a supporting deck of content that was generated by Summerhill and approved by NL Hydro. The training focused on education on CFL technology, dispelling myths and promoting both the energy savings and financial savings that lighting retrofits can have in order to prepare the representatives for typical questions and concerns from the community.

Events took place over two weekends in early April, taking into account the feedback about the length of the seasonal lighting event. Successful events took place in nine of the 10 NL Hydro community areas; exceeding the low target of 6,800 bulbs by nearly 1,000 CFLs. The energy savings achieved by this event totaled 134,468.84 kWh or 28% of the total energy savings. The chart below captures the event results by community.

"A Buck a Bulb" CFL Event Results				
Community	Number of Incandescent Bulbs Returned	Number of CFL Bulbs Purchased	Number of Customers Engaged	Average Number of Bulbs/Customer

Labrador City/Wabush	349	1,057	59	17.9
Happy Valley/Goose Bay	108	674	33	20.4
Forteau	46	130	20	6.5
St. Anthony	353	347	36	9.6
Rocky Harbour	619	613	91	6.7
Triton	153	410	28	14.6
Fogo	225	962	77	12.5
Harbour Breton	323	2,367	116	20.4
Burgeo	340	1,144	103	11.1
Total:	2,516	7,704	563	13.7

Feedback from the field representatives indicates that community members were very pleased with the event on the whole. Feedback also suggests that the majority of non-participants reported having already retired their incandescent bulbs as their reason for not participating. This was particularly noted in the Labrador City/Wabush event location. This relatively high level of saturation in some NL Hydro communities suggests there is some variation in how far along each community is on the energy efficiency continuum.

The photo below was taken after the final event date in Harbour Breton, the community that achieved the highest uptake during the CFL event.

A field representative takes stock after a successful CFL event in Harbour Breton.

3 PRODUCT OFFERINGS

It was important for the takeCHARGE! program to offer a wide array of products in an effort to understand where market appetite existed and learn about any differences in uptake. A brief analysis of the product uptake revealed the following facts:

- There was significant variability in the uptake of products both across and within communities;

- There was significantly higher uptake on products that were promoted through event-based marketing initiatives;
- Only one product, the lighting timer, failed to achieve the revised target;
- The "size" of the product did not necessarily impact uptake, considering that ENERGY STAR ® qualified refrigerators and dish washers had better uptake than many of the smaller, less expensive products;
- A wide variety of energy efficient products were available or could be ordered in all NL Hydro community regions, with the exception of Port Hope Simpson and Ramea, where retailers struggled with product procurement;
- Feedback from field representatives suggests that community members may be further along the efficiency continuum in some product categories such as lighting, while also requiring entry-level outreach about other product categories such as timers and sensors.

At the closeout of the program, it is clear that a future opportunity lies in conducting additional outreach, education and/or research into market penetration and appetite for energy efficient products in NL Hydro communities. Better understanding the uptake of products will allow a more targeted marketing approach. One certainty arising from the uptake of products is that event-based marketing initiatives are effective in promoting energy efficient products. Further research could point to other tactics that could be as effective.

4 MARKETING STRATEGIES

The following chart summarizes the different marketing strategies undertaken during the course of the takeCHARGE! program. Noting that it was important for NL Hydro to understand what works in reaching the customer, a number of tactics were tested with varying successes. The effectiveness of each strategy in the rural NL market is reviewed below.

Marketing Tactics & Collateral	
Direct mail	Direct mail was initially tested during the SLED event. Based on a successful response within the one community, direct mail was chosen as the main promotional tool for the CFL event. A direct mail flyer with the takeCHARGE! logo and "Get Behind the Savings" call to action was distributed to every household in each retail location's community. As a result, 50% of in-store survey respondents heard about the CFL event through the direct mail piece, making it the most successful marketing method tested. It is recommended that surrounding communities also be sent direct mail flyers to more thoroughly promote future events.

	A sample of the direct mail piece can be found in Appendix B. Note: direct mail pieces were also used as bag stuffers at retail locations, leading up to the event.
Community Channel Ads	Paid community channel advertisements were used to promote the SLED event and the community outreach events. As a result, 13% of online survey respondents and 9% of in-store survey respondents heard about the takeCHARGE! Program in this way. It is recommended that community channel ads be taken out on the paid stations going forward, because of increased viewership.
Website Promotions	NL Hydro promoted each portion of the takeCHARGE! campaign on their website www.takecharge.ca/coupons., as well as on their upcoming events page. Updates about program results were continually updated. As a result, 2% of in-store survey respondents reported hearing about the CFL event from the website. Additionally, 19% of the online contest survey respondents reported learning something new about energy conservation from the website. It is recommended that online promotions continue as a cost effective method to educate the public.
Word of Mouth	The field representatives used word of mouth as a major technique for promoting event attendance, online contest applications and deals available through the program. 44% of online survey respondents reported learning about takeCHARGE! from a field representative, making this the second most effective marketing method, next to the direct mail. Additionally, 11% of online survey respondents and 13% of in-store survey respondents reported hearing about takeCHARGE! through word of mouth sources that were not specified. Word of mouth should continue to be an important component to NL Hydro programming within these small communities.
Social Media	The field representatives, NL Hydro and Summerhill all used Facebook in order to promote the takeCHARGE! Program. Anecdotal evidence shows that the field representatives and NL Hydro had better uptake of messaging through this channel as a result of the location of their contacts.
Other Collateral	A number of collateral pieces were developed to support the logistics of the program and to ensure greater tie-in with the takeCHARGE! brand. Such pieces included posters to advertise the energy efficient product coupons, coupons on 10 different energy efficient products, branded envelopes for distributing the coupons, small flyers used as a bag stuffer at retail locations prior to the SLED event, takeCHARGE! branded table cloths and t-shirts for the field representatives and direct mail flyers and vouchers for the CFL event. Examples of the print pieces can be found in Appendix B of this report.

5 MARKET RESEARCH

In order to support lessons learned gained through program delivery and ensure the program was meeting the ten characteristics of success outlined by NL Hydro, four market research initiatives were undertaken.

The first two initiatives gathered empirical data about consumer attitudes and program uptake through surveys, one of which was available online during the entirety of the program, the other of which was administered in-store during the CFL event.

The third initiative was to interview field representatives in order to compile their feedback at the close out of the program.

Finally, a brief comparative market analysis was performed to provide some context for the results achieved through the takeCHARGE! Program.

The four initiatives gathered substantial data about customer attitudes towards energy efficiency, marketing effectiveness and the overall program execution. Details on the results of these initiatives are outlined in the following sections.

5.1 Online Contest Survey Results

An online survey about the takeCHARGE! Program was made available to all NL Hydro customers during the duration of the program. To incent participation, a prize of a $200 gift card to a local hardware retailer was offered in each of the 10 NL Hydro community locations and the survey was marketed as a contest entry form.

The online survey focused on gathering information about the effectiveness of the educational components to the program, the effectiveness of various marketing strategies and the uptake and perceptions about energy efficiency coupons.

A total of 140 participants responded to the online survey, at least one coming from each of the ten NL Hydro community regions. Entrants came from a total of 35 communities, with strongest uptake from the Burgeo region; accounting for nearly 34% of all responses. This uptake is likely the result of exceptional efforts on behalf of the Burgeo region field representative. The following is a list of all participating communities.

- Burgeo
- Ramea
- Fogo
- Tilting
- Shaol Bay
- Seldom
- Joe Batt's Arm
- Forteau
- L'Anse au Loup
- Happy Valley
- Goose Bay
- Hr. Breton
- Coombs Cove
- Sandyville
- Belleoram
- Creston
- Pool's Cove
- Labrador City
- Port Hope Simpson
- Rocky Harbour
- Triton
- Beachside
- Harbour Round
- La Scie

- L'Anse au Clair
- Pilley's Island
- Port Anson
- Englee
- Fortune Bay
- Straitsview
- St. Lunaire-Griquet
- Noddy Bay
- Baie Verte
- Griquet
- Roddickton

A total of eight questions were asked through the online survey. The following summary provides the top three responses to each question.

Survey Question	Top Responses
How did you find out about Hydro's takeCHARGE! (coupon rebate and/or mail-in) offers?	1. The program representative – 44% 2. My local retailer – 17% 3. Television advertisement – 13%
How many items did you purchase using an energy-saving coupon or mail-in rebate form?	1. 0 Products – 33% 2. 4 or more products – 22% 3. 1 product – 21 %
Did takeCHARGE! rebates help you to replace a less efficient product in your home?	1. Yes – 71% 2. Undecided – 16% 3. No – 17%
Have you taken advantage of other takeCHARGE! residential rebates?	1. None – 78% 2. Several – 9% 3. Yes, the insulation rebate – 7%
Where did you learn something new about energy conservation through the takeCHARGE! program?	1. From the program representative – 50% 2. From my local retailer – 19% 3. From the takeCHARGE! website – 19%
Was it easy to find the information you needed about the takeCHARGE program?	1. Yes – 96% 2. No – 4%
Did you participate in a local seasonal light exchange event this year?	1. Yes – 45% 2. No – 45% 3. No answer – 10%
How would you rate your level of satisfaction with takeCHARGE program?	1. Satisfied – 46% 2. Very satisfied – 43% 3. Somewhat satisfied – 10%

There were several notable highlights arising from the online survey results. One such highlight was the effectiveness of field representatives in the NL Hydro market. According to the survey, the field representatives were effective in both promoting the program (44% of respondents heard about it from them) and conveying energy efficiency messaging (50% of respondents learned something new about energy efficiency from their field representative).

Another highlight was the effectiveness of the program at conveying new energy conservation messaging. 96% of respondents found it easy to find information about the

program. Additionally, over 97% of respondents indicated that they learned something new about energy conservation from the takeCHARGE! Program.

Finally the positive response about the program was notable. 99% of online survey respondents reported being at least somewhat satisfied by the takeCHARGE! Program, 46% of which reported being satisfied and 43% of which indicating that they were very satisfied.

Beyond this reported satisfaction, a small number of participants provided comments, which articulated strongly positive feedback. The following three quotes provide interesting insights from some online survey respondents.

"I have always been very conscious of saving energy where ever I could - using cold water to wash and turning of lights if not needed, but your website has shown me even more ways to save. I recently purchased a new fridge with top freezer and got $50.00 rebate from Hydro. I couldn't afford to do the lights the same time, so maybe next year I'll change the Christmas lights. I already have the CFL lights. Thanks for the info."

"I think it is very important to encourage people to use less energy. Getting people to think about our environment and the impact in will have on our future through these information sessions while offering coupons through the takeCHARGE program is a wonderful idea. I look forward to attending future program information sessions that you have to offer in my area by our local representative."

"The program representative was very knowledgeable and helped me become more energy efficient. I am now looking at other ways to save."

The information gathered through this survey was valuable in terms of building an understanding of the NL Hydro customer. In order to expand on these results, an in-store survey was administered during the CFL event.

5.2 In-Store Survey Results

A brief six question in-store survey was administered during the CFL campaign in order to gain further insights into the effectiveness of various marking strategies, participant attitudes towards energy efficient products and participant shopping habits.

A total of 254 survey responses were successfully gathered during the events from nine of the 10 NL Hydro regions and the following chart provides the top three responses to each question asked.

Survey Question	Top Responses
How did you hear about Hydro's	1. Direct Mail - 50% 2. In-store – 36% 3. Word of mouth – 13%

<table>
<tr><td>takeCHARGE! CFL event? (pick one or several answers).</td><td colspan="4"></td></tr>
<tr><td>Why did you participate in the event?</td><td colspan="4">1. To save money – 65%
2. Because of the incentive/ deal – 13%
3. Because it is better for the environment to use energy efficient products – 14%</td></tr>
<tr><td>How many multipacks of CFL bulbs will you purchase with your voucher(s)?</td><td colspan="4">1. One or more 4-packs – 53%
2. One or more 6-packs – 32%
3. One or more 2-packs – 28%</td></tr>
<tr><td rowspan="2">What best describes your attitude towards energy saving products like CFLs?</td><td>“They are safe and effective”.</td><td>“Important to use to reduce environmental impact”.</td><td>“I would like to install more in my home”.</td><td>“I am <u>not</u> willing to pay more for them”.</td></tr>
<tr><td>Strongly Agree – 53 %
Agree – 40%
Don’t know – 1%</td><td>Strongly Agree – 52%
Agree – 36%
Don’t know/ Disagree – 1%</td><td>Strongly Agree – 56%
Agree – 32%
Don’t know – 1%</td><td>Strongly Agree – 36%
Agree – 35%
Disagree – 10%</td></tr>
<tr><td rowspan="6">For the following items, would you purchase them locally or would you travel to another town to buy them?</td><td>Product</td><td colspan="2">Purchase Locally</td><td>Travel</td></tr>
<tr><td>Insulation</td><td colspan="2">93%</td><td>3%</td></tr>
<tr><td>Windows</td><td colspan="2">89%</td><td>11%</td></tr>
<tr><td>Thermostats</td><td colspan="2">91%</td><td>9%</td></tr>
<tr><td>CFLs</td><td colspan="2">92%</td><td>8%</td></tr>
<tr><td>Power Bar</td><td colspan="2">90%</td><td>10%</td></tr>
<tr><td>For future take-back / exchange events, what type of incentive would you MOST prefer</td><td colspan="4">1. Any of the above (instant rebate, percent discount, gift card, free give away) – 58%
2. Instant rebate – 31%
3. Free give away – 5%</td></tr>
</table>

assuming the cash value is approximately the same?	

The in-store survey came back with some important results on consumer reasons for participating and on their attitudes towards energy efficient products. Perhaps most importantly, the survey shows that 78% of people participated for financial reasons, citing that saving money or getting the deal was more of a driver than reducing environmental impact. To reaffirm this, 71% of respondents reported that they would not pay more for an energy efficient product in the consumer attitude section of the survey.

The survey showed that after financial savings, environmentalism is next in terms of importance to the consumer. For example, 14% of respondents participated in order to reduce their environmental impact and all of the consumer attitudes towards energy efficient products ranked as highly positive.

The survey also returned important results in terms of the locations where shopping for energy efficient products occur. Contrary to beliefs based on anecdotal evidence gathered while designing the program, respondents reported shopping locally for energy efficient products nearly all of the time, as opposed to saving those purchases for destination shopping trips to larger centers. This result provides an important piece of information in validating the importance of the takeCHARGE! Program offering and demonstrating that there is value in NL Hydro offering events and product discounts in their local market.

In terms of incentive offerings, the survey demonstrated that participants were relatively indifferent to the type of incentive they receive; with 58% citing that they would most prefer any of the possible choices. Assuming this attitude is widely shared, this offers flexibility to future program designs. The survey results affirmed that participants would want to take advantage of the incentive by purchasing a larger multi-pack that would otherwise be quite costly without the deal.

A final highlight from the in-store survey was that the results from the marketing effectiveness question reaffirm the effectiveness of person-to-person marketing and promotion tactics initially reported in the online survey results. The results also demonstrate the effectiveness of direct mail pieces in the NL Hydro market.

5.3 Field Representative Interviews

Gaining a better understanding of the NL Hydro customer was an important focus of this program. In interviewing the field representatives, particular emphasis was put on deciphering the unique culture of each community, the amount of presence NL Hydro has in the lives of community members and how far along the energy efficiency continuum each field representative perceived their community to be. It is important to note that opinions gathered through these interviews did not come from a valid sample of NL Hydro customers.

Based on an analysis of the opinions gathered through the interviews, four main points to highlight became clear.

First, the field representatives reported some variation between the prosperity of the various regions. This is important to tie in with the in-store survey results, which showed that a main driving factor for participation was financial benefit. This may indicate that particular emphasis should be put on environmentalism when outreaching in prosperous communities.

Interestingly, field representatives unanimously reported that their communities were made up of "outdoors people", indicating strong ties to the natural environment. Again, this ties in with the second biggest driver for participating according to the in-store survey, which was reducing environmental impact. Such self-descriptors speak to the culture of the rural NL market and will be important to consider when generating future outreach pieces.

Secondly, the field representatives were asked to compile any particularly positive or negative feedback about energy efficient products that they heard during the course of the events. Looking at the responses, it seems that the majority of negative feedback centers around two problems: past misuse leading to product failure and/or general misconceptions about products. Reports that "products take on water from outside", "explode" or "don't last as long as the box says they should" generally point to these issues. Importantly, the majority of the field representatives reported that people were open-minded and receptive to their efforts to dispel product myths and misconceptions. This indicates that ongoing efforts from NL Hydro should bear fruit in terms of education and promoting movement along the energy efficiency continuum.

Thirdly, the field representatives ranked their communities fairly highly in terms of knowledge about energy efficiency and connection of the takeCHARGE! brand to NL Hydro. All field reps scored these two community descriptors at either three or four out of a possible five. No field representatives self rated at 5 out of 5 on either of the descriptors, meaning that, in there opinion, there is still room for outreach and education about energy efficiency, takeCHARGE! and NL Hydro.

Finally, the field representatives cited significant similarities in terms of the reported challenges to program execution. The weather and time of year for drawing community members caused issues for almost every community. Holding events during the late spring through to mid fall is recommended to avoid such complications.

5.4 Comparative Market Analysis

The final piece of market research involved comparing and contrasting the results from the takeCHARGE! Program to those from the 2008 and 2009 Nova Scotia Power energy efficiency programs. In doing this comparative analysis, Summerhill found that there were significant consistencies and few anomalies between the NL Hydro results and market response to these campaigns. The comparative analysis is broken out by consistencies,

anomalies and a comparative indication of the NL Hydro market's place on the energy efficiency continuum.

Consistencies:

The takeCHARGE! program experienced some challenges in setting appropriate achievement targets, despite working with Dunsky Energy Consulting and using the most relevant data possible in doing so. This phenomenon was also recorded in the results from the 2009 Nova Scotia Power program, where there was some speculation that the Atlantic Canada market differs from other thought-to-be comparable regions in Canada. NL Hydro's ability to analyze results in real time and adjust program operations along with Summerhill was useful while gathering preliminary data that will inform future targets, relevant to the rural NL market.

Another similarity is the relative level of saturation of CFL bulbs in the rural NL market. Recommendations from the 2008 and 2009 Nova Scotia Power energy efficiency programs suggest moving forward with a focus on specialty CFLs. This is consistent with feedback acquired during the takeCHARGE! CFL campaign. Numerous participants expressed appetite for discounts on more expensive, specialty energy efficient lamps.

Additionally, in terms of marketing effectiveness, the Nova Scotia market reported exceptional response to direct mailers, in store, word of mouth and field representative communications. Similarly, campaign based work was reported as particularly effective in terms of calling participants to action. The 2009 Nova Scotia Power campaign reported that local retailers benefited from the administrative assistance offered by program representatives. All of these marketing results are consistent with results from the 2010-11 takeCHARGE! program.

Anomalies:

One anomaly between the takeCHARGE! Program and the 2008 and 2009 Nova Scotia Power programs is the ability to leverage additional promotions from large-scale or big box retailers to enhance marketing reach. There are two reasons for this anomaly. First, there are only two big-box retailers operating in NL Hydro territory – Walmart and Rona - both of which operate in the Labrador City/ Wabush region. Secondly, because of the regionality of the takeCHARGE! program, neither store was able to commit to initiatives that would have enhanced the program's results, such as offering the coupons or adding promotions to flyers. Despite the unavailability of big box promotions, positive feedback was reported when small-scale local retailers took on promotions. Such was the case with the retail location in Seldom on Fogo Island, which reported doing their own print and community channel advertisements in all of the surrounding communities that purchase from their store. Future retail campaigns could benefit from asking more from local retailers in the way of their own promotion initiatives, especially considering the increase in traffic and sales seen by the takeCHARGE! Program.

Place on the Continuum

After administering the 2010-11 takeCHARGE! Program, it is evident that the NL Hydro customers welcomed the introduction to entry level energy efficiency product uptake and are open to outreach and education efforts that will take them to the next wrung on the continuum's ladder. This is evidenced by the following four pieces of data, gathered throughout the program's activities.

1. Customer attitudes towards energy efficient products were measured as extremely positive during the in-store takeCHARGE! survey. Participants indicated strong beliefs that products are safe and effective, that they are important to use to reduce environmental impact and that they would like to install more in their homes. This suggests that program participants no longer harbor misconceptions about energy efficiency products that would place them lower on the continuum.

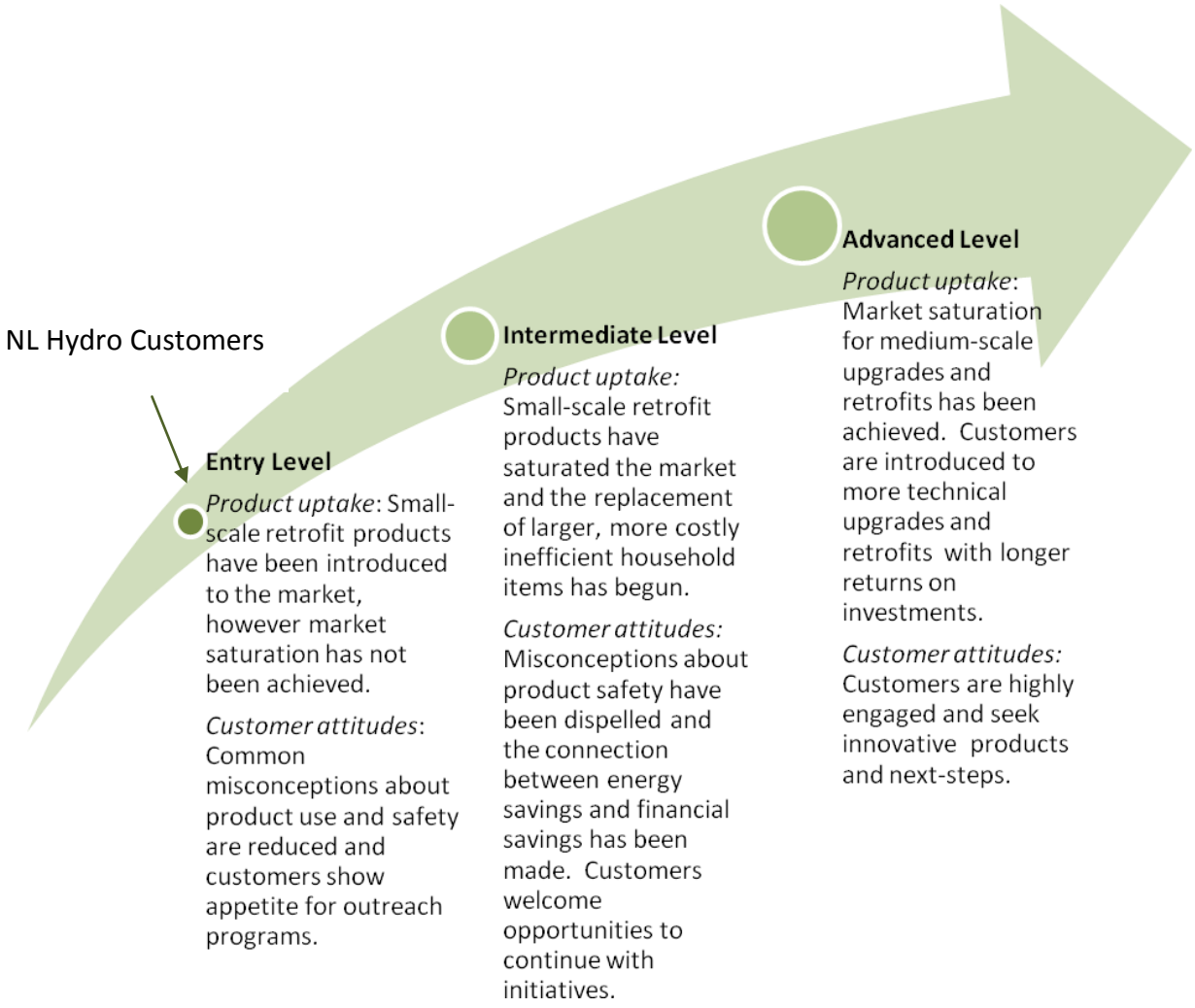
2. The results from the in-store survey also show that customers were unwilling to pay more for energy efficiency products. This shows that while they have a positive attitude towards the products, they do not rank the benefit of using them above financial savings. Moreover, it indicates that the customer has not yet connected energy efficiency products with financial savings.

3. There was significant variability between product uptake both within and between communities. This suggests that some products are more popular and perhaps better understood than others, and that some regions may be more environmentally or financially incented to take on energy efficient products.

4. Uptake of products during the event based activities achieved positive results for the program, indicating that when called to action, NL Hydro customers were enthusiastic in responding. Such a response shows that people in rural NL are engaged and interested by their role in affecting energy savings.

The culmination of these facts suggests that NL Hydro customers are beginning to assimilate key messages around energy conservation, however, they could benefit from additional outreach and education, especially regarding the connection between energy savings and financial savings. It is expected that additional outreach and education about lesser understood products such as power bars and low-flow shower heads, in addition to offers on such items, would result in a shifting in the market towards entry-level energy efficient product saturation, beyond CFL bulbs.

The following diagram indicates the estimated place of NL Hydro customers on the energy efficiency continuum.



NL Hydro customers on the energy efficiency continuum, post takeCHARGE! 2010-11.

6 TAKECHARGE! CLOSE OUT

Throughout the program, a number of important lessons were learned about campaign execution in rural NL. The following sections outline salient lessons learned and recommendations that should streamline future program operations in the rural NL context.

6.1 Lessons Learned and Recommendations

6.1.1 Flexibility in Programming Elements:

The flexibility built into the program such as relative freedom on product offerings and event date participation was useful in terms of building relationships with small local retailers; however it increased back-end work for both Summerhill and NL Hydro through ongoing SKU and product approval requests and product inventory issues.

It is recommended that retail participation be made more structured in the future to increase efficiency and reduce close-out confusion. This may lead to circumstances where additional assistance may be required in terms of acquiring inventory in smaller locations, however the result will be streamlined operations. The extremely positive retail location results can be leveraged going forward, when re-engaging retailers with tighter participation requirements. Retailers should also be questioned as to "deal breaking" restrictions that would prevent their participation to ensure relationships are ongoing.

6.1.2 Program Timing:

The overwhelming feedback from retailers and field representatives was that the timing of the program was problematic due to weather constraints. The uptake of the CFL campaign in St. Anthony provides a perfect example of how weather affected the program results. During the first campaign day a major winter storm made it impossible for people to travel to the retail location. The storm cleared up on the second campaign day, but at that point the majority of the town was engaged in outdoor activities related to the snow, despite the best efforts of the field representative to promote the program. In this way, the outdoorsman culture of the area interacted with the weather to produce lowered results in an area that could have achieved better energy savings.

It is recommended that in the future, event activities are scheduled for the very late spring or early fall to make it both easier to sell product and easier for reps to travel within their communities.

6.1.3 The Event Model:

While every program element garnered a positive reaction from community members, time-limited, call-to-action events were more effective in terms of securing participation, as compared to ongoing, more passive initiatives such as the discount coupons, as shown by the fact that 84% of the total energy savings were acquired through such events. Additionally, it was found that offering the events locally is important as destination shopping was found to be less prevalent than previously expected, as shown by the results of the in-store survey.

It is recommended that future programming focus on local event or time-sensitive campaign based work, with additional outreach and education activities done leading up to the call-to-action event date.

6.1.4 The Field Representative Model:

Field representatives proved invaluable to the success of the program in three ways. First, they provided important in-person support to busy retailers. Secondly, the field representatives were very important in terms of promoting the program and educating the public. 44 % of online survey respondents reported hearing about the program through them and 50% reported learning about energy efficiency from them. Finally, the field

representatives also acted as cultural informants. They were able to quickly identify local marketing channels, events and relevant opportunities to promote the program.

It is recommended that going forward, field representatives be consulted while finalizing the program design and be used as primary outreach contacts within communities. Additionally, feedback suggests that going forward, more structure and framework to the field representative role could increase their effectiveness.

6.1.5 Energy Savings Messaging:

The program gained a better understanding of cultural differences across the communities, which will help in communicating the benefits of saving energy in the most effective manner going forward. For example, for a location such as Labrador City, promoting the ethical aspects of energy conservation could have more impact on participation than focusing in on the monetary benefits, due to the economic boom in the area and the relatively low price of energy in the region. Additionally, channeling the messaging through community members was found to be extremely effective in terms of marketing the message.

It is recommended that additional market research is done to map the variance in regional attitudes towards energy conservation and the significance of differences between groups. Customer survey data captured by region could reveal key marketing messages that are targeted to specific regional beliefs.

6.1.6 Product Technology Familiarity:

Customer interest in some products such as power bars and timers was relatively low, when compared to the uptake of CFL bulbs. Similarly, feedback from field representatives suggests that many customers reported already using CFLs in their home, indicating relatively high product saturation, when compared to other technologies. This may point to a familiarity gap amongst the NL Hydro customer base, between CFL technology and other energy efficiency technologies. Given this, further outreach and education about lesser-understood technologies, how they contribute to energy savings and how they result in financial savings would benefit the NL Hydro customer.

It is recommended that additional educational work and product demos be done to help promote the uptake of energy efficient products. Profiling community members with energy efficiency success stories and testimonials could also be done help to address myths, bring more familiarity to the product and potentially connect tangible kWh savings or dollar savings to the idea of upgrading to more efficient technologies.

6.1.7 Marketing Strategies:

The direct mail piece proved to be the most effective tool for promoting the program, with 50% of in-store survey respondents reporting hearing about takeCHARGE! through this channel. Face-to-face and word of mouth interactions with field representatives were

second in terms of effectiveness, garnering with 44% of respondents attributing their awareness of takeCHARGE! to this method of communication. Although less effective, leveraging community advertising channels and social marketing through existing community groups was a relatively cost-effective way to gain profile.

Relatively passive marketing such as placing coupons in high traffic areas had very little success and should be avoided in the future. Another marketing element that proved problematic was the inclusion of Newfoundland Power logos on early marketing pieces, where the offer differed between Power and Hydro districts. Participants reported that this as confusing.

It is recommended that future marketing involve in-person outreach events and educational pieces as well as call-to-action pieces, mailed directly to every household in the NL Hydro community areas. Furthermore, avoiding cross-promotion where eligibility of offers differs is recommended.

7 CLOSING NOTE

At the onset of this work numerous goals, targets and success characteristics were laid out. The takeCHARGE! Program was able to achieve tremendous success through adapting in real time to feedback and uptake figures, and by trying new, innovative methods for executing energy efficiency programs. As a result, not only did the 2010-2011takeCHARGE! Program meet its goals, but it gathered important information that will help build future program successes.

One of the most important pieces of information gathered over the course of the entire body of work from November 2010 to May 2011 was the willingness of the NL Hydro customers to take action in order to reduce energy consumption, when called to action by a distinct, event based campaign.

NL Hydro's takeCHARGE! Program paves the way for further work to be done, ever-increasing the relationship between the utility provider and the customer and resulting in ongoing measurable reductions in energy consumption.

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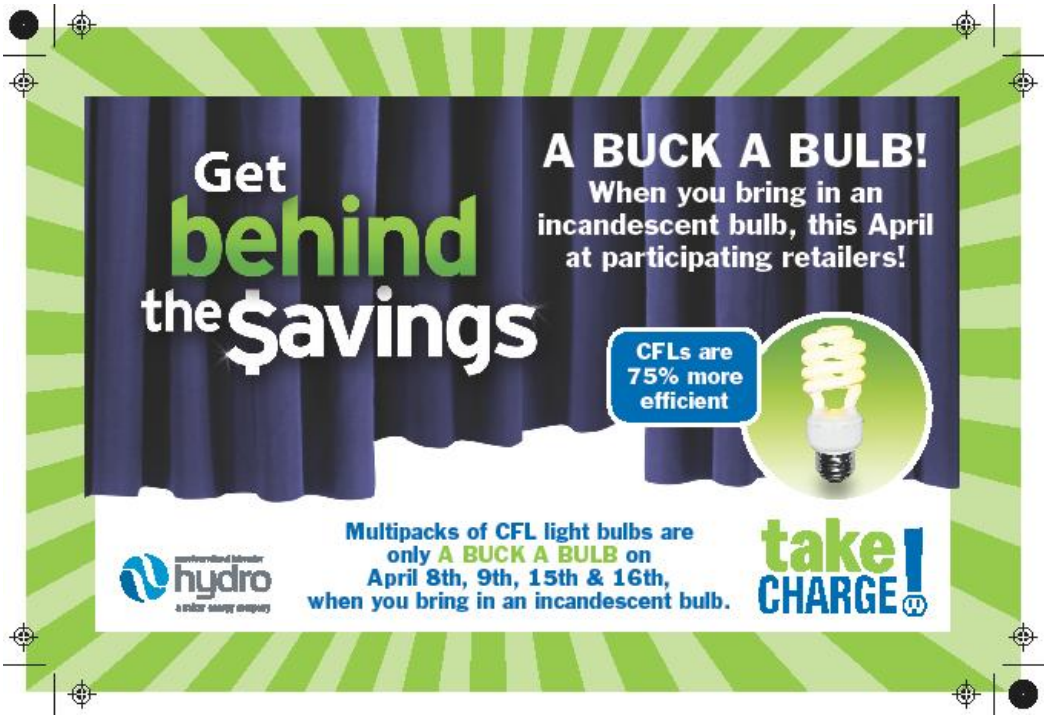
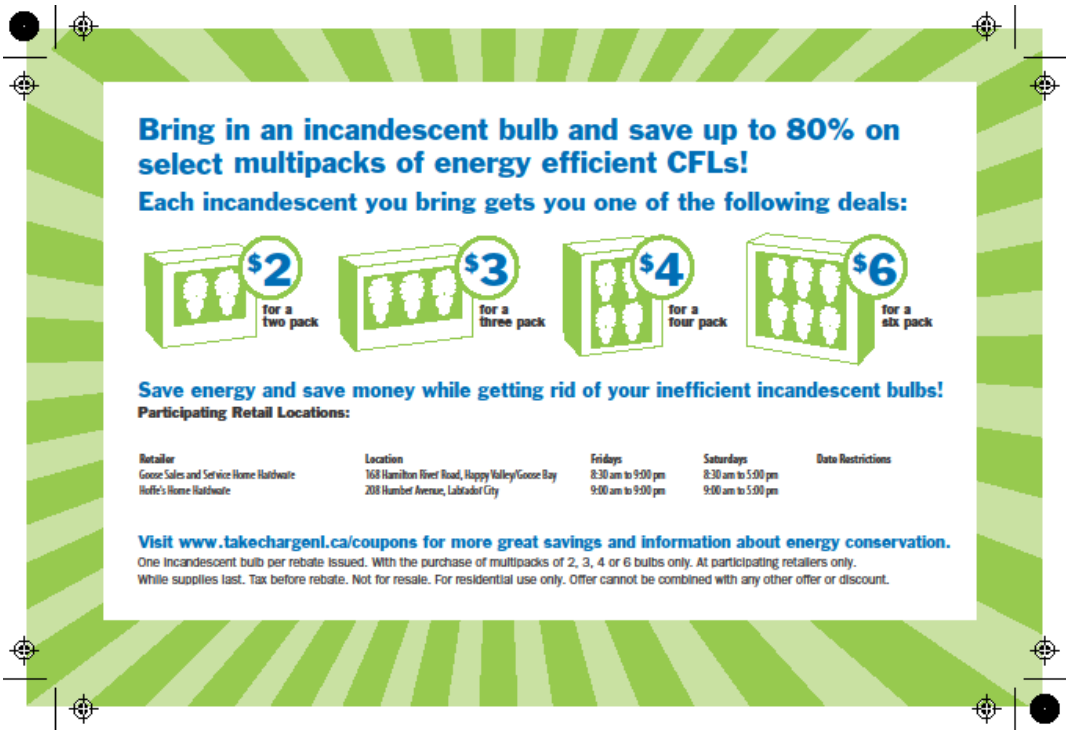
8 APPENDIX A – MARKETING MATERIALS

Marketing / Collateral Piece	Example
Coupon Poster	

Coupons *Example: Low flow showerheads*	
Seasonal Lighting Event Flyer	

Branded Envelopes *Example: Front side*	
Buck a Bulb Direct Mail Flyer *Example: Front Side*	

Buck a Bulb Direct Mail Flyer *Example: Labrador Back Side*	
Buck a Bulb Vouchers *Example: 6pack*	

9 APPENDIX B – PARTICIPATING RETAILERS

The following list of retailers participated in one or more portions of the 2010-2011 takeCHARGE! program.

Community	Retailer
Burgeo	Burgeo Pro Hardware
Fogo	B & M Building Supplies & Hardware
Fogo	Fogo Island Home Hardware Building Centre
Fogo	Riff's Limited
Forteau	Hancock's Pro Hardware
Happy Valley/Goose Bay	Goose Sales and Service Home Hardware
Harbour Breton	Jackman's Home Hardware Building Center
Harbour Breton	Cohen's Home Furnishings
Harbour Breton	Kountry Klutter Hr. Breton
Labrador City	Hoffe's Home Hardware
L'Anse-au-Clair	Turnbull's Home Hardware Building Centre
LaScie	Cape John Industries Ltd.
Plum Point	Young's Home Hardware Building Centre
Port Hope Simpson	P & K Sports and Automotive
Rocky Harbour	Rocky Home Hardware Building Centre
Roddickton	Roddickton Home Hardware Building Centre
St. Alban's	St. Albans Building Supplies
St. Anthony	Shears Building Supplies
Triton	Otto Roberts Ltd. Castle
Wabush	RONA Home Centre

10 APPENDIX C – RESULTS CALCULATIONS

The following charts show how kWh savings were calculated using data provided by Dunsky Energy Consulting, for the purposes of this program and report.

Total Net kWh savings.

Incented Measure	Gross Savings (kWh/yr)	Inter eff. (kWh eq./yr)	Net svgs (kWh_eq/yr)	Inter eff. %	Total Program Uptake	Net kWh saved
Low Flow Shower Heads	347	75	272	21.5%	27	7351.06
Tank Insulation	198	128	70	64.6%	48	3362.95
Pipe Wrap	99	21	78	21.5%	2700	209727.69
Refrigerator Energy Star 18 Cu Ft New	88	45	43	51.7%	29	1232.81
New Energy Star dishwasher plus DHW	340	73	267	21.5%	76	20274.46
Power bar	64	38	26	59.2%	12	311.88
Seasonal LED - 25 bulbs/strip	21	15	6	70.0%	6145	38713.50
Timer to switch off at Midnight	131	0	131	70.0%	16	2096.00
Outdoor Motion sensor	208	0	208	70.0%	57	11856.00
Replace 60W incandescent with 15 W CFL	56	39	17	70.0%	8034	134971.20
Replace 100W incandescent with 23 W CFL	65	45	19	70.0%	2078	40349.93
Estar indoor light fixture	125	88	38	70.0%	74	2780.99
					Total:	**473028**
					% of Total:	**100%**

Give Aways Net kWh savings.

Incented Measure	Gross Savings (kWh/yr)	Inter eff. (kWh eq./yr)	Net svgs (kWh_eq/yr)	Inter eff. %	Event Uptake	Net kWh saved
Pipe Wrap	99	21	78	21.5%	2700	209727.6923
Replace 60W incandescent with 15 W CFL	56	39	17	70.0%	1,800	30240
					Total:	**239968**
					% of Total:	**51%**

SLED Net kWh savings.

Incented Measure	Gross Savings (kWh/yr)	Inter eff. (kWh eq./yr)	Net svgs (kWh_eq/yr)	Inter eff. %	Event Uptake	Net kWh saved
Seasonal LED - 25 bulbs/strip	21	15	6	70.0%	3936	24796.80
					Total:	**24797**
					% of Total:	**5%**

CFL Net kWh savings.

Incented Measure	Gross Savings (kWh/yr)	Inter eff. (kWh eq./yr)	Net svgs (kWh_eq/yr)	Inter eff. %	Event Uptake	Net kWh saved
Replace 60W incandescent with 15 W CFL	56	39	17	70.0%	5778	97070.40
Replace 100W incandescent with 23 W CFL	65	45	19	70.0%	1926	37398.44
					Total:	**134469**
					% of Total:	**28%**

Coupons Only Net savings.

Incented Measure	Gross Savings (kWh/yr)	Inter eff. (kWh eq./yr)	Net svgs (kWh_eq/yr)	Inter eff. %	Total Program Uptake	Net kWh saved
Low Flow Shower Heads	347	75	272	21.5%	27	7351.06
Tank Insulation	198	128	70	64.6%	48	3362.95
Refrigerator Energy Star 18 Cu Ft New	88	45	43	51.7%	29	1232.81
New Energy Star dishwasher plus DHW	340	73	267	21.5%	76	20274.46
Power bar	64	38	26	59.2%	12	311.88
Seasonal LED - 25 bulbs/strip	21	15	6	70.0%	2209	13916.70
Timer to switch off at Midnight	131	0	131	70.0%	16	2096.00
Outdoor Motion sensor	208	0	208	70.0%	57	11856.00
Replace 60W incandescent with 15 W CFL	56	39	17	70.0%	456	7660.80
Replace 100W incandescent with 23 W CFL	65	45	19	70.0%	152	2951.49
Estar indoor light fixture	125	88	38	70.0%	74	2780.99
					Total:	**73795**
					% of Total:	**16%**

Newfoundland and Labrador Hydro

Isolated Systems Energy Efficiency Program

2012 Final Report

January 2013

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1 OVERVIEW

In February 2012, Summerhill was commissioned to manage the implementation and monitoring of the Isolated Systems Energy Efficiency Program for Newfoundland and Labrador Hydro (NLH).

The initial savings targets and budget were revised from the approved Program Design to reflect more accurate customer opportunities and the shift of Island Direct Install to 2013 (as supported by NLH).

The revised objectives of the project were to:

- Achieve 2,639.84 MegaWatt hour (MWh) total energy savings in 2012;
- Achieve 5,336.92 MWh total energy savings for the 2012-2014 period;
- Complete energy savings kit installations in all applicable residences and commercial locations in those isolated Labrador communities not yet served by a Direct Install (DI) project (65% participation assuming 100% of kit products installed). Qualification for a Basement Insulation was determined through DI surveys;
- Introduce a Retail Discount Coupon component to all isolated Labrador communities and an Appliance Mail-in Rebate component to all isolated diesel system communities; and
- Conduct community outreach and events to educate and sign up potential participants, including launch events, Seasonal LED Light-string exchanges (SLED), and Block Heater Timer giveaways (BHT).

The components were offered in various communities depending on region:

- Labrador (excluding Nain, Hopedale, Mary's Harbour, and Port Hope Simpson systems): all components were offered to all customers;
- Nain, Hopedale, Mary's Harbour, and Port Hope Simpson (the "Refresh" communities): the Appliance component was offered in these communities and the Retail Discount Coupon was introduced in July in the Mary's Harbour and Port Hope Simpson systems;
- Island: the Appliance component was offered to all 6 Island systems.

The central component was the Direct Install, which represents 2,053.68 MWh of the 2012 revised savings target. In total, 2,156.11 MWh of energy savings were achieved for the 2012 DI. Installations were completed for 1,355 customers, of which 1,276 were residential and 79 were commercial. 208 kits were left behind for customers to install, including 183 residential and 25 commercial. All 2012 Install communities were offered kit installations, with the exception of Norman Bay due to a shortage of kits. No Basement Insulation Rebate applications were approved.

The Retail Discount Coupon and Appliance Mail-in Rebates provided additional opportunities for residents to make energy efficient choices for their homes. Response to these promotions was very low overall with claims in process. Uptake has been challenged

by stock availability, limited eligible retailers, and receipt of similar products in energy savings kits.

The Seasonal LED Lighting Exchange and Block Heater Timer Giveaways were conducted in November. SLED was presented in 10 communities with 2,016 LED lightstrings exchanged, representing 35.15 MWh in energy savings. The collected light strings will be responsibly recycled by an Ontario-based recycler. In total, 160 block heater timers were distributed at the BHT Giveaway across L'Anse au Clair, L'Anse au Loup, and Port Hope Simpson, representing 104.4 MWh in energy savings.

The following summarizes total energy savings for the components:

Table 1.1 2012 Isolated Systems Energy Savings Achieved

Component	Energy Savings (MWh)
Direct Install	2,156.11
Retail Discount Coupon	0.00
Appliance Mail-in Rebate	0.53
Seasonal LED Lightstring Exchange	35.15
Block Heater Timer Giveaway	104.4
Basement Insulation Mail-in Rebate	0.00
TOTAL	2,296.19

Despite challenges with the Retail and Appliance uptake, the Isolated Systems Energy Efficiency Program was very successful in 2012. The program's reach was extensive, with all diesel systems receiving direct mail promotions and nearly all customers offered an installation in the Direct Install communities. The face-to-face interactions associated with Direct Install, SLED, and BHT are invaluable as education, engagement, and information collection opportunities. As we move into 2013, Direct Install and events will continue to be central components of this worthwhile program.

1.1 Delivering on Success Factors

A variety of approaches were implemented to achieve strong program results:

Table 1.2 Success Achieved

Approach	Achieved Success
Strong education to homeowners and retailers on energy efficiency	• Quality control audit respondents reported learning from representatives about: energy and lighting (88.68%); energy and water conservation (92.77%); and energy and heating (93.08%). • 92.77% of audit respondents indicated that representatives were knowledgeable about energy efficiency.
Strong engagement with homeowners and retailers through community outreach activities, including advertising and launch events	• Launch events, door-to-door, phone calls, posters, magnets, bag stuffers, and direct mail flyers were used in Direct Install systems. Direct mail was used in non-install systems. • Direct mail flyers, install surveys, and posters were translated into Inuktitut, representing NLH's first bilingual messaging. • TV and pre-paid Visa card prizes to encourage early DI sign-ups. • Canada Day Launch Events were conducted in all 2012 DI Systems to introduce the program and encourage Direct Install sign-ups. • Representatives reached out to their networks, including facebook.
Achieve Medium Scenario (65%) Savings Target	• Offered kits to nearly 100% of potential customers, except in Norman Bay (due to shortage of kits). • Less than 10 customers refused to participate. • 86.7% of potential customers had installations completed (excluding Norman Bay).
All Systems served in 2012	• All systems were included in the Appliance Mail-in Rebate offer.
Develop retail partners for and encourage customer participation in Retail Discount Coupon	• 12 retail partners • Added Port Hope Simpson and Mary's Harbour systems in July to "close the loop" by offering retail discounts throughout southern Labrador.
Hire and train local representatives to complete direct installs and promote all components	• Completed 2 in-person, 2-day training sessions in June and used existing representatives to mentor new hires (2). • Hired 1 area coordinator to facilitate program quality, retail partnerships, and inventory. • Representatives who resigned were replaced and trained within 2 weeks of notification. • A number of representatives have reported a greater awareness of energy efficiency in their daily lives and have been actively applying this knowledge at home and in the community.
High satisfaction among all customers with their installation and program experience	• Averaged 4.61/5 for program satisfaction according to audit calls. • Averaged 4.78/5 for representative satisfaction. • Anecdotal feedback was very positive.
Move customers along the sustainability continuum	• On average, 9 out of every 10 audit respondents confirmed they learned something new from their representative about saving energy through lighting, water conservation, and heating.

1.2 Program Delivery Challenges

Program implementation in remote regions involves several challenges. They include geographical barriers of distance, access, and seasonality as well as human resources, variability of needs, and availability of information. Applying lessons learned from the 2011 program to develop detailed risk management and quality assurance plans ensured that delivery challenges were anticipated and addressed from implementation to completion of program components. The main challenges included:

- **Shipping:** long lead times and closely managing shipping companies were tactics used to ensure timely arrival of products and marketing materials. Our expanded network of shipping contacts enabled us to troubleshoot shipments with multiple subcontractors. Except for the product kits to Rigolet, all shipments arrived in time for the program and event launches.

- **Human resources:** the smaller populations and high seasonal employment in many towns can affect the quantity and quality of available applicants. Local employment services agencies and town offices were invaluable resources used to source staff. Community-level reference checks were conducted with town officials; these checks were more detailed than a standard background check and helped ensure the most qualified applicants were hired. To maintain staff quality, weekly calls were held with each of the 11 zones. Managers reviewed education content, new information, lessons learned from other zones, and progress to date. The 2012 team was very strong overall, with several representatives who went above and beyond to ensure program quality and customer satisfaction.

- **Product Needs and Quantity:** Determining product quantities and type was challenging due to variable population counts and product needs by region and customer type. Population counts were determined using Canada Post housing counts, the 2011 Census, and town office feedback. In most cases, the order quantities and product type were suitable; however, in some cases, such as tank wrap, actual needs could only be determined while in community.

Summerhill is well-positioned to continue to improve the efficiency of program delivery and to address and anticipate challenges for the 2013 year.

1.3 Achieving Targets

The original Program Design outlined 4,458.07 MWh of total energy savings in 2012. Follow-up research confirmed that there were fewer actual customer opportunities, and a review of the 2011 Direct Install program highlighted the need to assume not all products could be installed at every location. To accommodate these updates, NLH requested High, Medium, and Low Scenarios of savings projections, representing 80%, 65%, and 50% customer

participation rates. The lower customer opportunities and installed product assumption were integrated into the three scenarios. The revised 2012 targets are outlined as follows:

- High Scenario: 3,121.14 MWh (including 2,534.98 MWh Direct Install)
- Medium Scenario: 2,639.84 MWh (including 2,053.68 MWh Direct Install)
- Low Scenario: 2,165.92 MWh (including 1,579.75 MWh Direct Install)

NLH supported the targets outlined in the Medium Scenario.

To achieve these targets, Summerhill implemented the approaches outlined in *1.1 Delivering on Success Factors*. Highlights include:

- Direct Install:
    - Very close to 100% of customers in all 2012 communities except Norman Bay have been offered kits.
    - Installations were completed at 1,355 customer locations, representing 2,156.11 MWh in savings and an 86.7% participation rate. (Note: only installed products have been counted towards savings).
- Retail Discount Coupon: Coupon submissions are in process. At this time, no savings have been counted. Uptake has been challenged by stock availability, limited eligible retailers, and receipt of similar products in energy savings kits.
- Appliance Mail-in Rebate: 0.53 MWh were achieved from 7 approved applications. Rebate understanding at both the customer and retailer level has impacted uptake.
- Basement Insulation Mail-in Rebate: response was minimal and no applications were approved. DI surveys indicate 1,118 customers did not qualify, already had insulation, or wanted attic insulation.
- Seasonal LED Lighting Exchange: 35.15 MWh, representing 2,016 LED lightstrings exchanged for incandescent lightstrings. All accessible communities between L'Anse au Clair and Cartwright were served by an area event.
- Block Heater Timer Giveaways: 104.4 MWh were achieved through the giveaway of 160 block heater timers.
- Drain Water Heat Recovery Pilot: Direct Install survey results indicate there are 211 candidates eligible for a secondary audit to qualify for this pilot.

1.4 Resource Use

All resources are managed by Summerhill except the Appliance Mail-in Rebate and Retail Discount Coupon cheque processing, and marketing agency for this program. Expenses billed for the January 1st to December 31st, 2012 period are as follows:

Table 1.3 Resource Use

Category	Expenses to Date* ($)	2012 Budget Estimate ($)	Difference ($)
Program Management	362,050	348,300	13,750
Marketing & Communications	30,227.42	44,000	-13,772.58
Program Incentives	157,859.66	275,528.70	-117,669.04
Program Reps	191,563.10	156,278.48	35,284.62
Program Delivery Expenses	125,754.98	254,710.82	-128,955.84
TOTAL	867,455.16	1,078,818.00	-211,362.84

* No additional expenses are anticipated for the 2012 program year.

Summerhill's financial year-end is November 30. The 2012 Budget Estimate was calculated based on that schedule. In the month of December, Program Management costs were billed to NLH, resulting in the difference of $13,750 in Estimate versus Expenses. This cost is not in addition to the existing overall budget and is captured in the budget for the 2013 program year.

As was indicated in the September Progress Report, the Program Rep costs exceeded 2012 budget estimates due to the inclusion of an area coordinator and extended hours to reach busy or less-interested DI customers. Additional staff hours were also invested in revisiting customers who had kits left behind to re-offer to install them.

Overall expenses were under the budget estimate for 2012.

1.5 Community Comments & Feedback

Anecdotal feedback from town managers, residents, and staff was extremely positive. In conversation, town offices expressed appreciation for a local NLH program and voiced a desire for future NLH programs targeted at local communities. All DI communities were helpful in aiding the representatives and accommodating requests for space or information.

In close-out calls, the representatives stated they had great experiences on the program and had increased their knowledge and awareness of energy efficiency. Several asked to be considered for future programs and stated they enjoyed working on this type of program.

From the DI surveys and audits, customers remarked positively and provided suggestions about the program. Comments about the program include:

- Keep them going and the education is great and the free aspect of it was great (Cartwright);
- Wonderful program, wish it was available sooner, a little disappointed that basement didn't qualify as it is a half basement (Makkovik);

- This is a tiny start – diesel generation should be extinct and Labrador coastal communities MUST be connected to the grid! (Cartwright);
- Found it a really good program, something that needs to be out in the community more, very good to know that there are programs out there to assist with things that are sometimes out of reach (Cartwright);
- [Auditor summary] Customer indicated it was a good program and very educational. There was a lot more people educated she feels that cannot get out and learn about energy, but with this program, she feels more of her community is now more knowledgeable (Forteau); and
- Good program and it should be done every two or three years (St. Lewis).

Additional comments focused on additional incentives for windows, insulation, and fuel costs, interest in testing products and seeing on-bill savings, and desire for more programs and cost savings.

2 DETAILED RESULTS BY COMPONENT

2.1 Direct Install

The Direct Install component was an extremely successful way to secure savings and engage customers in person. This approach ensures that products are installed and customers can immediately begin saving energy. At the same time, customer awareness and understanding of energy efficiency was developed through the in-person education opportunity that an in-home/in-business visit offers.

This component was promoted through pre-launch direct mail postcards, posters around town, and bag-stuffers in stores. Customers were invited to sign-up for installation appointments during the Canada Day launch events in their local communities. To encourage sign-ups, two prize draws were created: a $200 pre-paid Visa gift card for those who signed up at the launch event and had their installation completed by July 31; and a big screen TV to those who had their installation completed by the representative during the program. If a customer preferred to install the kit themselves, they were ineligible for the prize draws. NLH provided small prizes and takeaways for the launch events; these items, particularly the hats, jackets, and shirts, were attractive to many customers. Drinks and snacks were offered at the launch event tables as another method of drawing interest in the program.

For breakdowns of installations by community and by product types, refer to *Appendix A: Direct Install Results by Community* and *Appendix B: Direct Install Results by Product Type*.

Appendix A indicates a preference for certain products over others in residential versus commercial locations. Customer preferences in percent are listed below for the installed products, factoring in the quantity of each product per kit:

Table 2.1 Product Preference

Product	Residential		Commercial	
	High Interest	Low Interest	High Interest	Low Interest
13W CFL**	85.34%		70.57%	
23W CFL	74.06%			50.48%
23W Dimmable CFL		68.81%		55.7%
Pipe Insulation*		54%		34.18%
Low Flow Showerhead**	79.7%			39.24%
Faucet Aerator**	95.38%		82.28%	
Electric Hot Water Heater Tank Wrap		4%		0%
Weatherstripping		33.54%		15.82%
Smart Power Strip	80.33%		72.15%	
LED Exit Sign		N/A		46.2%
Shrink Wrap Window Kit		67.91%		66.46%

*Based on 2011 uptake, 450 pieces of pipe insulation were ordered. However, need for this product was higher in 2012. A lower supply order therefore impacted pipe insulation rates.
**The commercial percentages for the 13W CFLs, showerhead, and aerator do not include the quantity installed at Northern Light Inn (150, 75, and 75 respectively) in order to reflect a typical commercial customer's preference.

The Visa gift card and TV prizes were delivered to the winning customers in November 2012. Winners were verified against survey and audit data. Winners lists were posted on the program website and in town offices. The Samsung LCD HDTV 46" model from Cohen's Furniture in Forteau was selected as the TV prize due its Tier 5 energy efficiency rating.

Overall, representative and customer survey feedback indicates a high level of satisfaction with the products and this program component (see *Section 3. Quality Assurance*).

Anecdotal feedback highlights the potential for immediate cost savings to customers, especially those with high energy bills. For instance, one Cartwright representative and the Cartwright town manager indicated their bills had decreased substantially after installing the kit, despite the July 1 rate increase. It is expected that NLH's pre- and post-Direct Install comparison will identify energy savings congruent with this feedback.

2.2 Retail Discount Coupon

The Retail Discount Coupon component was initially launched in all Direct Install communities, where it was promoted on posters, bag stuffers, and during local events and installation visits. In July, with NLH's approval, the Port Hope Simpson and Mary's Harbour systems were also included to "close the loop" along the southern Labrador coast. Customers in these areas were invited to participate via posters and launch events during which coupons were distributed.

Twelve retailers are participating in the program. The majority (9) support CFL 2-packs but do not have the capacity or demand to carry the other products in their small stores. Only two participating retailers, Home Hardware and TimbrMart, carry the bulk of the product offerings.

Coupon use has been minimal so far in the program, and retailers prefer to wait until more coupons are received before submitting any claims to NLH. The provision of similar items in the energy saving kit has likely impacted uptake, as has product availability.

Mid-stream incentives were offered to all participating retailers and to potential new partners. The incentives were specifically geared towards securing end-of-aisle shelf displays, an in-store champion (i.e. a non-manager who oversees coupon set-up, cashier awareness, and promotion), or in-store events. Retailers appreciated the offer but cited lack of space and staff as barriers to this level of participation. Representatives were available to help retailers with store promotion and set-up, but managers had little time to accommodate this offer.

Moving into 2013, Summerhill anticipates there to be very few eligible partners in the Island communities (based on community size) but that the general stores in Nain and Hopedale may be interested. New approaches to engaging customers will be explored in 2013.

2.3 Appliance Mail-in Rebate

The Appliance Mail-in Rebate was originally planned as an online rebate. However, a review of several big-box retailers' online models indicated that only instant rebates and manufacturer rebates were supported. Online retailers do not have the capacity to filter out program-specific customers from their sales data and therefore could not support a rebate available only to diesel system communities. Therefore, NLH and Summerhill agreed that a mail-in model would be best for the purposes of this program.

In installation communities, the Appliance Mail-in Rebate was marketed together with other components on posters, bag stuffers, and during local events and installation visits. In the non-installation communities, customers were sent direct mail envelopes containing rebate applications.

The following rebates have been processed by NLH as of December 4, 2012:

Table 2.2 Appliance Mail-in Rebate

Category	Approved	Declined	Energy Savings (MWh)
Refrigerator	5	6	0.313
Clothes Washer	1	5	0.091
Television	1	4	0.126
TOTAL	7	15	0.53

Applications were declined for unqualified, incorrect Tier products, and for applications received on existing products (i.e. no new purchase was made). The majority of declined rebates are from Island systems where no educational events have taken place yet.

2.4 Basement Insulation Mail-in Rebate

The Basement Insulation Mail-in Rebate was offered to customers in the Direct Install communities. When combined with NLH's existing basement insulation rebate, the customer was eligible for up to $0.03 per added R-value per square foot of insulation.

The DI surveys identified 245 potential applicants to this component. Representatives noted on surveys when 8 customers already had insulation even though they qualified according to survey questions. To be eligible, customers had to answer "Yes" to each of the following:

- Have a built basement with a ceiling height of 6 feet minimum (i.e. not a crawl space, dirt floor, or risers)?
- Home is all-electric heating, or if a supplementary heating system is in place, then the home has a minimum annual electricity usage of 15,000 kWh? The Representative can help verify your usage on your Hydro bill.
- Own your home AND have an active Hydro electricity account?

When customers met the survey qualifications, they received a rebate application from their installer. NLH received 2 applications, both of which were declined since the applicants had not yet purchased insulation.

Possible reasons for the low customer response include:

- While the insulation cost is covered by the rebate, the cost of installation is not and may be prohibitive for many customers;
- The customer already has adequate insulation;
- The customer does not want to install insulation at this time; or
- The customer did not fully understand the rebate.

To ensure customer understanding, Summerhill worked closely with representatives throughout the program to ensure they properly educated customers about the rebate.

2.5 Seasonal LED Lighting Exchange

Seasonal LED (SLED) lightstrings were sourced through the Home Depot in Halifax. They were the only supplier, local or otherwise, that was able to supply the quantities required for the exchange and deliver in a timely fashion. Multi-coloured C6 LED lightstrings with 35 bulbs per string were provided in exchange for incandescent holiday lightstrings, with a maximum number of 3 LED lightstrings allowed per household. Residents were invited to bring in more than the 3 incandescent lightstrings required for the exchange for free recycling. The events took place between November 3 and November 17, 2012.

With NLH's approval, the original 20 SLED locations (identified in the Design) were reduced to 5 areas. This reduction ensured that existing staff could be used to run the events, rather than hire new, less-experienced representatives. Follow-up events were internally scheduled for neighbouring communities if lightstrings were still available and by using existing staff. No events were held in Black Tickle or north of Cartwright due to representative availability and logistical concerns about shipping lights into and out of those communities in November and December.

Prior to the events, postcards were mailed to each residence and business advertising the event and directing customers to see local posters for details. The postcards were mailed as follows:

- Cartwright, Paradise River
- Charlottetown, William's Harbour, Norman Bay, Pinsent's Arm
- Port Hope Simpson, Mary's Harbour, Lodge Bay, St. Lewis
- Labrador Straits (L'Anse au Clair to Red Bay inclusive)

Event location and dates were not included on the postcards in case of shipment delays. Posters were put up in public spaces in all invited towns, except William's Harbour and Norman Bay due to distance. The program's toll-free number received calls from interested customers, and NLH reported calls to its customer service number. Some representatives and town managers also reported calls from local customers.

Representatives facilitated exchanges in Cartwright, Charlottetown, L'Anse au Clair, L'Anse au Loup, and Port Hope Simpson on November 3, 2012. Response was strong, with approximately two-thirds of the SLED lightstrings exchanged in these 5 locations. Due to the geography of this area as well as a strong desire from residents, follow-up events were held in Mary's Harbour, Pinsent's Arm, Red Bay, St. Lewis, and Pinware/West St. Modeste between November 4 and November 17 inclusive. Feedback from all events indicated that participants were excited, thought it was a great program, and were pleased to have an event in their community. The only negative feedback involved the fact that the new LED lightstrings were on average shorter overall than the incandescent lightsstrings being exchanged. Anecdotal feedback also indicated that many participants would buy more LED lightstrings, but that the cost of them could be a deterrent.

It should be noted that, other than the hardware stores, few retailers carry LED lightstrings in their stores and, if they do, in very small quantities.

In total, 679 customers participated in the events and, on average, brought in 3 incandescent lightstrings to exchange. The number and type of lightstrings collected and distributed are as follows:

Table 2.3 SLED Event Totals

Lightstring Type	Bulb Type	Event Totals	Non-event Totals	Total
Collected Incandescent Lightstrings	**C-9**	978	0	2,016
	C-7	209	0	
	Mini	776	0	
	Other	53	0	
Distributed LED Lightstrings	**C-6**	2,117	55	2,172

In total, 2,172 lightstrings were distributed. Of these, 2,016 were counted towards energy savings of 35.15 MWh (i.e. only those LED lightstrings for which an incandescent lightstrings was collected were counted in the energy savings). The difference of 156 between collected and distributed lightstrings is due to:

- 10 total strings provided to 2 retailers as incentives in the Retail component;
- 5 strings given to the St. Lewis School for providing free event space;
- 101 strings given above collected amount in Charlottetown due to representative misunderstanding on the exchange process; and
- 40 strings exchanged with town offices and churches outside of event times. These were not tracked.

There are 328 lightstrings remaining in storage to be incorporated into 2013 event planning.

Representatives in all locations rated customer interest as very high (9 or 10 out of 10, 10 being highly interested). They educated almost 100% of customers about how the product worked and its energy and cost savings and reminded customers about the Retail Discount Coupons and Appliance Rebates. While attendants were generally local, the L'Anse au Clair and L'Anse au Loup events saw a mix of customers from other Straits towns.

The collected lightstrings have been shipped to Aevitas, an Ontario-based recycler. This recycler was selected based on cost per kilogram, quality assurance, and strong track record.

2.6 Block Heater Timer Giveaway

The Block Heater Timer Giveaway took place on November 17 in 3 communities. Fifty timers were handed out in L'Anse au Clair and Port Hope Simpson, and 60 were distributed in

L'Anse au Loup. The events were extremely popular, with timers being distributed within 1 hour of the event start.

In summer 2012, NLH approved expanding the program to the Port Hope Simpson location, bringing the total timers to 150. However, as the supplier ships in sets of 20, a total of 160 timers were available for distribution. The energy savings results are:

Table 2.4 Block Heater Timer Energy Savings

Event Location	Quantity	Energy Savings (MWh)
L'Anse au Clair	50	32.625
L'Anse au Loup	60	39.15
Port Hope Simpson	50	32.625
TOTAL	160	104.4

Direct mail postcards were sent to residences and businesses in the event regions. Due to a concern about graphic use, NLH approved the reprinting of the postcards and posters. This change provided an opportunity to include event locations and dates on the postcard since shipping was on track. Packaging was consistent with the giveaways conducted by NLH in Goose Bay and Labrador City. Posters were put up in public spaces in event towns and neighbouring communities to further advertise the events. As with the SLED events, several customers called the program and NLH toll-free lines, representatives, and town managers, which indicated that the postcards and posters were useful marketing tools in the areas. In total, 142 of the 160 recipients (88.8%) brought in their postcards to exchange for a timer, proving this is a useful marketing tool.

2.7 Drain Water Heat Recovery Pilot

There are a total of 210 potential candidates according to the Direct Install survey data. This number includes only customers for whom electricity is their primary home heating source. If we include all home heating sources, there are 232 potential candidates. To determine potential candidates, the following questions were asked:

- Is your basement insulated? *Answer: Yes*
- How is your water heater fueled? *Answer: Electricity*
- How many members of the household shower each day? *Answer: Various*
- Is there an accessible vertical drainstack of 3.5 feet or longer to install a drain water heat recovery system? The Representative must verify the height of the drainstack is 3.5 feet or longer (with the permission of the homeowner). *Answer: Yes*

As a next step, Summerhill will design in-depth audit surveys to determine a final pool of interested and eligible candidates for the 2013 Pilot installation.

3 TOTAL RESOURCE COST

Achieving a positive Total Resource Cost (TRC) was important to ensuring the program activities were cost effective and beneficial to the communities relevant to the investment.

TRC for the 2012 program is positive at 2.80 and includes the following:

- Fixed management costs to December 31st;
- Final recycling costs based on shipping weights; and
- Final payroll and delivery costs as of December 31st.

The following is not included in the TRC number:

- Appliance and Retail components as claims are processed by NLH. TRC Ratio is not impacted when those components are added due to their minimal uptake.

Table 4.1 Summary and TRC Results – Actual

Summary and TRC Results	2012
Benefits	$2,406,043.63
Measures TRC Costs	$149,347.41
Program Costs	$709,595.50
Program TRC (Net Present Value)	**$1,547,100.72**
Program TRC (Ratio)	**2.8**

No additional expenses are anticipated for the 2012 program year.

4 QUALITY ASSURANCE

4.1 Survey Results

Every Direct Install customer was asked to complete a survey to verify products installed, confirm basement insulation rebate and drain water pilot eligibility, and answer marketing questions.

Including customers who had kits left behind, customer surveys total 1,563, of which 1,543 were signed by the customer. For some questions, customers did not provide answers. See *Appendix C: Direct Install Survey Summary* for a summary of customer responses to marketing and attitude questions.

From the survey results, the strongest motivation for customers to participate in the program was to save money by saving energy (79.79%). Face-to-face and phone promotion

of the program were more successful in reaching customers than print or online marketing tactics; this result emphasizes the importance of in-community representatives in reaching and engaging customers at the local level. Attitudes towards energy saving products were very positive, although cost has a moderate impact of a customer's willingness to purchase an energy saving product over a conventional product. Low- or no-cost energy saving actions, such as turning off lights or turning down heat, are being implemented by a majority of customers. Comparatively fewer customers have completed higher-cost actions involving large purchases but these customers still represent a significant level of uptake (e.g. windows, appliance, and insulation).

According to survey results, customers were extremely satisfied with their program experience with nearly 55% rating the program experience as excellent and nearly 29% as very good. Less than 2% of customers rated their experience as fair or poor.

4.2 Audit Results

To ensure program quality, audits were completed with 318 customers, representing 20.35% of the 1,563 Direct Install participants. Of these, 46 were in-home audits conducted by the area coordinator in communities from Cartwright to L'Anse au Clair. An independent call centre conducted calls to all customers who either had an installation or had a kit left behind to self-install, to a maximum of 3 attempts. In total, 272 phone audits were completed by the call centre. In addition to verifying product installation, the audits included marketing and satisfaction questions. The audits also provided an opportunity to follow up with customers who preferred to install their kit themselves; specifically, audits confirmed if those customers had installed their kits and, if they had not, operators offered to have the representative come back to install it. Refer to *Appendix D: Summary of Audit Results* for a breakdown of customer responses by question.

All efforts were made to address any negative feedback from the quality control audits and to get input from town offices about community response to the program. Anecdotal feedback was generally very positive.

5 2013 PLANNING & DESIGN

Summerhill reviewed the 2012 results and conducted two internal brainstorming meetings as part of the 2013 planning. Dunsky Environment Consulting was engaged to review the 2013 product mix and provide input on new opportunities beyond the original Design. Their review indicated that the program was on track for product choices. Achieving deeper savings would require an approach outside the current scope, such as hiring contractors for deeper-measure installations.

Based on these discussions, 2012 results, and lessons learned, we recommend:

5.1 Direct Install

The housing and business counts for 2013 were updated to reflect town and Canada Post information. In particular, there are far fewer commercial locations than anticipated in the original Design, which was based on NLH customer numbers. The updated product mix is:

Table 5.1 2013 Energy Saving Kit Product Mix

Product Type	ISLAND		REFRESH COMMUNITIES	
	Residential	Commercial	Residential	Commercial
13W CFL: *A-Shape*	2 (↓)	2 (↓)	0	0
8W LED bulb (60W incandescent equivalent)	2 (↑)	2 (↑)	1 (↑)	1 (↑)
23W CFL	1 (↓)	1 (↓)	0	0
23W CFL Dimmable	2	2	2 (↑)	2 (↑)
Pipe Insulation	1	1	0	0
Low Flow Showerhead	1	1*	0	0
Faucet Aerator	2 (↑)	2 (↑)	0	0
Electric Hot Water Heater Tank Wrap *(as needed)*	1	1	1	1
Weatherstripping	1	1	0	0
Shrink Wrap Window Kit	2	2	0	0
Smart Power Strip	1	2 (↑)	1	2 (↑)
LED Exit Signs *(Bulb Replacement Only)*	0	2	0	2

↑↓ *indicates if the amount is increased or decreased from the 2012 kit.*
** Included in all kits to facilitate kitting and accommodate population count variances.*

The main update is in Island lighting. The 13W CFLs will decrease from 4 to 2, and two 8W LED bulbs will be introduced to compensate for that reduction. The introduction of LED bulbs is an opportunity to educate homeowners on newer technologies and move them beyond CFLs. The 23W Regular CFL was decreased from 2 to 1, with the potential for one of the two 23W Dimmables to be used as a regular bulb for customers who have no dimmer switch. The tank wrap and LED exit signs leftover from 2012 will be used in 2013.

Other items, such as occupancy sensors, would be valuable energy saving options, but require installation by contractor-level staff. Such staff is scarce in program communities and sensor installation would not secure enough savings for the time invested. Indoor clothing racks or clotheslines would also be beneficial, but, because it is difficult to estimate savings, they have not been included in the product mix.

Additionally, each representative will be provided with a hand-held wattage meter. It will be used as an educational tool to demonstrate energy consumption to customers at educational events and during installation visits.

5.2 Retail Discount Coupon

The main challenge to this component is retailers' capacity to carry products for the small populations they serve. Based on what can realistically be expected in 2013 and on customer and retailer feedback in 2012, the following additions are recommended for this component:

- Programmable thermostats: requested by several customers;
- Heavy duty outdoor timers: this item was popular during giveaways and is a potential rebate option where carried by hardware stores;
- Buy one, get one free: A-shape or other specialty CFL bulbs, where carried;
- LED lightstring coupons are scoped for 2013 but are not expected to attract customer participation until the November/December holiday season and only where carried.

To improve their capacity for timely response, retailers will be provided with quarterly reporting packages, including prepaid claim envelopes and store-specific claim forms. Mid-stream incentives will continue to be explored as methods for encouraging promotional activities and retailer participation. Promotions will also be incorporated into educational events at various times.

There are fewer retailers on the Island and in northern Labrador than anticipated in the original Design. Some retailers will not have the capacity or product to participate. For these reasons, we expect 10 or less new retailers to be available to join the 2013 program.

The pop up shop is an emerging trend within the retail industry and can be an effective way to create some buzz around new products and raise awareness. This approach can provide options to customers in communities where no retail partner exists or where a certain product is not carried by a retail partner. Pop up shops can be set up at community events and/or during set hours at a public space. In its most simplistic form, pop up shops can be venues for demonstrating efficiency products and providing information on retail partners that carry the products. There are challenges to this approach, which will be explored in depth with a final outline provided in early 2013.

5.3 Appliance Mail-in Rebate

To improve customer response in 2013, Summerhill will approach appliance retailers in Goose Bay, Labrador City, and the Island who sell to diesel system customers. We will work with them to create store-specific rebated product lists and provide them with information on eligible communities, rebate forms, and posters. Our goal is to ensure those retailers are well-equipped to promote the right products to the right customers who call or visit their stores.

Anecdotal feedback from the 2012 program indicates an interest in freezers in various communities and dehumidifiers in southern Labrador. In addition to the existing appliance products available for rebate, we recommend the following appliances for the 2013 program:

- Freezers: As EnergySTAR® freezers are 10% more efficient than non-qualified models, it is recommended that a rebate apply only to those models that carry the EnergySTAR® rating. The Consortium for Energy Efficiency has not established a Tier rating for freezers.
- Dehumidifiers: anecdotal feedback indicates this product has high usage in Labrador Straits and is run continuously. As EnergySTAR® rated dehumidifiers are 15% more efficient than older models, it is recommended that a rebate apply to only those models that carry the EnergySTAR® rating.

5.4 Events

Rather than launch DI immediately, the plan is to introduce the 2013 program to the Island communities through educational events in early spring. These events will educate residents about the rebate and coupon components, and lead up to a late spring/early summer Direct Install launch. This approach will allow time to find and train qualified staff, give them experience speaking about energy efficiency, and allow a long lead time for kit shipments. In the “Refresh” communities, where the shipping window is far tighter, this approach is especially appropriate. Events can also be held in Labrador communities served in 2012 to refresh their knowledge about the rebate and coupon components.

Seasonal LED lighting exchanges are recommended for select Island communities and in Nunatsiavut. Up to 2,000 lightstrings would be available for exchange, including the 2012 leftover strings. Events will be held in fall 2013 using local representatives.

5.5 Drain Water Heat Recovery Pilot

Determining customer eligibility and interest is the first step for this 2013 component and will involve a detailed phone audit. If needed, 2012 program representatives can be used to conduct the surveys. The resulting list will be used to plan the installation locations. To

ensure program efficiency, communities with the most candidates will be focal points for this initiative but will not necessarily be a determining factor in a candidate's final eligibility.

The complexity of installation – as compared to kit installation – requires more qualified staff than have previously been needed. It is likely that travelling representatives will be necessary, with local representatives working to set up appointments and ensure customer availability.

5.6 Additional Options

As part of the 2012 review process, several options were considered with a focus towards both 2013 and 2014. In-depth cost and savings estimates can be determined based on NLH's interest in the following proposed options:

Basement Insulation Installation:

Dunsky had indicated that deeper savings would typically require installation by skilled contractors. A basement insulation installation pilot can be conducted in select communities in 2013, with the possibility of expanding to all diesel systems in 2014. From the 2012 Direct Install surveys, there are up to 245 customers who are eligible for the basement insulation rebate and have either no insulation or partial insulation. Time and cost to install are barriers for many of these customers. Hiring installers in one to two pilot communities would achieve high savings for the participating customers and determine the viability of expanding to more communities in 2014.

The basement insulation incentive cost is not currently included in the 2013 budget. Based on 2012 budgeted costs, it is not expected to be higher than $5,000. Total costs, including incentives, labour, shipping, and other delivery costs, would need to be reviewed against potential savings to determine this option's feasibility.

Fridge recycling:

Refrigerator collection and recycling is currently supported by several utilities. Given the remoteness of the diesel communities and low populations, it would be very challenging to implement. However, while only a small number of refrigerators can potentially be collected, there are several benefits to consider. Individual customers would benefit from the savings potential for recycling old or secondary refrigerators. Diverting fridges from town landfills is a secondary impact that would have a very positive impact locally by safeguarding against ground and water contamination and reducing community waste. This option could be conducted in partnership with volunteer or conservation/environmental organizations, such as Riverkeepers, women's groups, or Junior Rangers. Partners may also be found among appliance retailers and/or recyclers.

Community Freezer Program:

Community freezer programs are operating in Nain, Hopedale, and Makkovik. These programs act as food banks where community members can access traditional or local food sources at various times of the year. Local donors, typically hunters, provide meat and other foods, based on seasonal availability. These programs benefit several community members, especially seniors and single parents who are not able to access local foods.

There are several different opportunities for working with these and other interested communities on this type of program. Examples include: providing a rebate for communities purchasing a community freezer; assisting them in purchasing EnergySTAR® freezers; and conducting community education sessions to promote energy efficient freezer use. While potential energy savings may not be considerable, there is significant opportunity for relationship building between the communities and NLH.

A significant barrier exists in the long-term maintenance of this type of program in terms of human resources, food sources, and equipment. This barrier offers the opportunity to provide administrative tools, education, and/or funding specifically geared to helping communities create and maintain local programs.

5.7 Approach to Delivery Challenges

Based on the challenges experienced in 2012, the following approaches will be explored:

- **Shipping:** It is expected that 2013 shipments of product and marketing materials will be smoother given that there is an established network of shipping companies. Summerhill will continue to take a hands-on approach to managing shippers and their local subcontractors.

- **Human resources:** For 2013, we expect the much smaller Island communities to be a staffing challenge and will look into various staffing models, including travelling representatives. Summerhill will be conducting community research and will work with Employment Assistance Services contacts to determine the best approach for that region.

- **Product Needs and Quantity:** The data collected in 2012 and town office input will inform product orders for 2013.

In summary, Direct Install will continue to be the main program component. Existing components will be enhanced with events and grassroots product delivery approaches, and new components can be piloted to enhance the 2013-2014 offerings. We can review and discuss this outline with NLH in early January 2013 to determine the 2013 scope and finalize a workplan for the year.

6 FINAL THOUGHTS ON 2012 PROGRAM DELIVERY

Residents of participating diesel communities in Labrador were ready to take action and participate in a combination of the installation of energy efficient products, exchanges, giveaways, instant rebates, and education. Programs such as these have lasting positive implications, and it is important to sustain these programs year after year.

There is a continued opportunity to engage diesel communities to make better choices and foster a culture of conservation in the province. With the choices of consumers evolving beyond CFLs, there is an increased opportunity to focus more strongly on Specialty CFLs and their benefits and on the adoption of the next generation of energy efficient products, such as LED bulbs.

7 APPENDIX A: DIRECT INSTALL RESULTS BY COMMUNITY

Total products installed by the representatives by community are as follows:

Table A Direct Install Results by Community (as of January 16, 2013)

	TOTAL PARTICIPANTS			INSTALLED KITS			LEFT-BEHIND KITS
COMMUNITY	TOTAL PARTICIPANTS	Total Installed Kits	Total Left-Behind Kits	TOTAL MWh SAVINGS	TOTAL kWh SAVINGS	TOTAL INSTALLED PRODUCTS	TOTAL LEFT-BEHIND KIT SAVINGS (MWh)
Commercial	**104**	79	25	**193.16**	193155.38	**1099**	85.87
Black Tickle	**6**	1	5	**1.50**	1499.17	**9**	17.17
Capstan Island	**2**	2	0	**4.40**	4403.74	**20**	0.00
Cartwright	**27**	23	4	**55.28**	55279.26	**273**	13.74
Forteau	**17**	5	12	**3.34**	3338.47	**17**	41.22
L'Anse au Clair	**8**	8	0	**52.24**	52238.88	**377**	0.00
L'Anse au Diable	**1**	1	0	**2.41**	2405.71	**10**	0.00
L'Anse au Loup	**11**	10	1	**16.86**	16855.49	**89**	3.43
Makkovik	**4**	4	0	**5.96**	5961.78	**24**	0.00
Pinware	**1**	1	0	**1.50**	1499.24	**5**	0.00
Postville	**1**	1	0	**2.21**	2211.90	**11**	0.00
Red Bay	**8**	8	0	**17.65**	17650.91	**89**	0.00
Rigolet	**8**	6	2	**7.42**	7422.93	**40**	6.87
St. Lewis	**3**	2	1	**4.40**	4398.19	**19**	3.43
West St. Modeste	**7**	7	0	**17.99**	17989.71	**116**	0.00
Residential	**1459**	1276	183	**1962.95**	1962951.77	**14861**	418.95
Black Tickle	**72**	44	28	**60.28**	60275.97	**581**	64.10
Buckle's Point (Forteau)	**4**	4	0	**4.72**	4720.33	**41**	0.00

	TOTAL PARTICIPANTS			INSTALLED KITS			LEFT-BEHIND KITS
COMMUNITY	TOTAL PARTICIPANTS	Total Installed Kits	Total Left-Behind Kits	TOTAL MWh SAVINGS	TOTAL kWh SAVINGS	TOTAL INSTALLED PRODUCTS	TOTAL LEFT-BEHIND KIT SAVINGS (MWh)
Capstan Island	**18**	17	1	**28.49**	28494.73	**194**	2.29
Cartwright	**221**	174	47	**292.06**	292061.71	**2135**	107.60
Charlottetown	**114**	114	0	**230.36**	230358.23	**1732**	0.00
English Point (Forteau)	**36**	35	1	**49.04**	49041.86	**387**	2.29
Forteau	**94**	90	4	**126.37**	126371.70	**1015**	9.16
Fox Cove	**1**	1	0	**2.19**	2192.17	**16**	0.00
L'Anse Amour	**4**	4	0	**4.51**	4506.95	**44**	0.00
L'Anse au Clair	**79**	78	1	**138.39**	138391.51	**990**	2.29
L'Anse au Loup	**212**	201	11	**313.64**	313639.95	**2257**	25.18
Makkovik	**124**	114	10	**133.94**	133939.75	**756**	22.89
Norman Bay	**1**	1	0	**1.23**	1232.17	**14**	0.00
Paradise River	**23**	3	20	**0.98**	982.54	**14**	45.79
Pinsent's Arm	**21**	21	0	**44.13**	44127.82	**321**	0.00
Pinware	**23**	18	5	**13.37**	13373.20	**180**	11.45
Postville	**62**	62	0	**118.41**	118411.07	**864**	0.00
Red Bay	**75**	73	2	**124.58**	124581.26	**914**	4.58
Rigolet	**127**	92	35	**101.78**	101782.09	**974**	80.13
St. Lewis	**69**	56	13	**67.30**	67295.33	**526**	29.76
West St. Modeste	**59**	54	5	**64.02**	64023.15	**605**	11.45
William's Harbour	**20**	20	0	**43.15**	43148.28	**301**	0.00
Total	**1563**	1355	208	**2156.11**	2156107.15	**15960**	504.82

*Table does not include communities where no kits were installed or left behind for customers to install.

8 APPENDIX B: DIRECT INSTALL RESULTS BY PRODUCT TYPE

Total products installed by the representative by product type are as follows:

Table B: Direct Install Results by Product Type

Community	Total Products	13W Regular CFL	23W Regular CFL	23W Specialty CFL (dimmable)	Pipe Insulation	Low Flow Shower heads	Faucet Aerators	Tank Wrap	Weather Stripping	Smart Power Strip	LED Exit Sign	Shrink-wrap Window Kit
Commercial	**1099**	373	105	88	27	106	140	0	25	57	73	105
Black Tickle	**9**	4	2	2	0	0	1	0	0	0	0	0
Capstan Island	**20**	4	4	4	0	0	2	0	0	2	0	4
Cartwright	**273**	69	35	32	14	10	18	0	2	20	35	38
Forteau	**17**	4	1	0	0	0	3	0	0	2	7	0
L'Anse au Clair	**377**	174	12	8	0	75	76	0	7	6	7	12
L'Anse au Diable	**10**	1	0	0	0	0	1	0	2	1	3	2
L'Anse au Loup	**89**	24	13	11	2	4	8	0	7	6	2	12
Makkovik	**24**	7	1	1	2	0	3	0	0	2	0	8
Pinware	**5**	0	1	2	0	0	0	0	0	0	0	2
Postville	**11**	4	2	0	0	0	0	0	2	1	0	2
Red Bay	**89**	28	16	11	1	3	6	0	0	7	5	12
Rigolet	**40**	4	2	3	2	3	6	0	4	4	8	4
St. Lewis	**19**	6	4	2	0	0	1	0	0	1	1	4
West St. Modeste	**116**	44	12	12	6	11	15	0	1	5	5	5
Residential	**14861**	4356	2161	1756	689	1017	1217	51	856	1025	0	1733
Black Tickle	**581**	188	94	89	41	44	45	25	19	9	0	27
Buckle's Point (Forteau)	**41**	14	8	6	1	2	4	0	0	2	0	4
Capstan Island	**194**	57	22	19	6	15	17	0	16	15	0	27

Community	Total Products	13W Regular CFL	23W Regular CFL	23W Specialty CFL (dimmable)	Pipe Insulation	Low Flow Shower heads	Faucet Aerators	Tank Wrap	Weather Stripping	Smart Power Strip	LED Exit Sign	Shrink-wrap Window Kit
Cartwright	**2135**	607	302	267	136	159	171	0	55	163	0	275
Charlottetown	**1732**	454	232	229	86	111	112	0	197	111	0	200
English Point (Forteau)	**387**	127	58	45	16	29	34	2	12	24	0	40
Forteau	**1015**	329	163	110	41	68	87	4	38	69	0	106
Fox Cove	**16**	4	2	2	1	1	1		2	1	0	2
L'Anse Amour	**44**	16	8	4	3	3	3	0	0	4	0	3
L'Anse au Clair	**990**	277	151	124	36	75	76	0	60	63	0	128
L'Anse au Loup	**2257**	681	299	231	112	131	190	2	133	160	0	318
Makkovik	**756**	186	91	36	51	58	103	0	14	58	0	159
Norman Bay	**14**	4	2	2	1	1	1	0	2	1	0	0
Paradise River	**14**	6	4	0	0	1	1	0	0	2	0	0
Pinsent's Arm	**321**	84	42	42	11	20	21	0	40	21	0	40
Pinware	**180**	68	36	32	5	9	14	0	1	14	0	1
Postville	**864**	229	113	74	57	60	60	0	104	61	0	106
Red Bay	**914**	290	145	140	5	70	70	0	11	67	0	116
Rigolet	**974**	291	153	120	42	75	88	16	64	85	0	40
St. Lewis	**526**	160	95	52	17	34	51	2	23	34	0	58
West St. Modeste	**605**	204	99	93	21	31	48	0	25	41	0	43
William's Harbour	**301**	80	42	39	0	20	20	0	40	20	0	40
Total	**15960**	4729	2266	1844	716	1123	1357	51	881	1082	73	1838

9 APPENDIX C: DIRECT INSTALL SURVEY SUMMARY

Table C Direct Install Survey Summary

Survey Question	Responses
Note: product install numbers from surveys are listed in Appendices A and B	
Residential or Commercial?	1. Residential – 93.4% 2. Commercial – 6.6%
How did you FIRST hear about the program?	1. Word of Mouth: 23.54% 2. Door hanger: 1.28% 3. Representative came to my door: 18.11% 4. Representative called me to book an appointment: 22.65% 5. Community event: 21.11% 6. Posters: 5.31% 7. Magnets: 0% 8. Radio: 6.38% 9. Town Bulletin Board: 0.83% 10. Town Council Meeting: 0.13% 11. Town facebook: 0.77% 12. takeCharge! website: 0.32% 13. Bill Insert: 2.04% 14. Other: 2.62% 15. Blank: 6.38%
What is the #1 reason you're participating in the program?	1. Helps the community to reduce our use of Hydro plant: 6.08% 2. It's convenient to have the products installed: 0.96% 3. Receive free products: 1.73% 4. Save money by saving energy: 79.79% 5. Save energy to reduce my environmental impact: 9.09% 6. To enter the contest to win a prize: 0.96% 7. Blank: 1.41%

What best describes your attitude towards energy efficient products?	***Strongly Agree***	***Agree***	***Neutral***	***Disagree***	***Strongly disagree***
They are safe and effective	31.35%	63.08%	4.35%	0.06%	0.06%
I would like to install more of them in my home	30.71%	64.04%	3.77%	3.84%	0.06%

Survey Question	Responses				
I think that the money I save on my electricity or water bill makes up for the higher cost of the energy saving products I've purchased in the past	21.24%	59.56%	17.21%	0.51%	0.12%
It is important to use energy saving products to reduce my environmental impact	36.15%	60.59%	2.18%	0%	0%
I am willing to pay more for an energy saving product	22.33%	55.6%	14.52%	5.44%	0.7%

In the past 12 months, have you taken any of these actions to reduce energy use at home? *(Multiple answers permitted)*	***Yes***	***No***
Insulate new or upgraded insulation	20.28%	79.72%
Turn down heat or air conditioning at night or when not at home	78.37%	21.62%
Turn off lights and/or appliances when not in use	94.11%	5.89%
Wash laundry in cold water	80.49%	9.51%
Bought energy saving appliances or used EnergySTAR® appliances	33.27%	66.73%
Install high performance or programmable thermostats	8.77%	91.23%
Install EnergySTAR® windows	14.27%	85.73%
Used LED Christmas lights	51.25%	48.75%

Survey Question	Responses
Please rate your satisfaction (1=Poor, 5=Excellent) with your experience in Hydro's Isolated Systems Energy Efficiency Program	1. Poor: 0.26% 2. Fair: 1.28% 3. Good: 14.27% 4. Very Good: 28.53% 5. Excellent: 54.7% 6. Blank: 9.6%
Please indicate your gender	1. Female: 49.39% 2. Male: 48.88% 3. Blank: 1.34%
Please indicate your age range	1. 19 or under: 0.13% 2. 20-29: 4.73% 3. 30-39: 12.48% 4. 40-49: 24.12% 5. 50-64: 35.12% 6. 65+: 22.46% 7. Blank: 0.7%

10 APPENDIX D: SUMMARY OF AUDIT RESULTS

Table D Summary of Audit Results

Audit Question	Responses	
Installation verification totals are included in the Direct Install discussion		
Residential or Commercial Customer	1. Residential: 96.54% 2. Commercial: 3.46% 25 audited customers (7.86%) did not have the kit installed by the representative and therefore were offered a return visit by the phone auditor or to have the kit installed by the area coordinator during his in-home visit.	
Are the new items working to your satisfaction?	1. Yes: 97.8% 2. No: 1.57% 3. Blank: 0.63%	
Please rate your energy efficiency knowledge *(1=Low, 5=Very High)*	1. 1.3% 2. 1.6% 3. 25.5% 4. 39.6% 5. 31.1% Blank: 0.9%	
Did you learn any new information on the following during your visit?	**Yes**	**No**
Saving energy through the use of lighting and energy efficient electronics	88.68%	10.38%
How reducing water usage can help save energy	92.77%	6.29%
Saving energy by preventing heat loss	93.08%	5.97%
How energy efficient would you say your home is?	1. Not at all efficient: 2.2% 2. Low efficiency: 4.72% 3. Moderate efficiency but needs improvement: 29.25% 4. Good efficiency: 41.51% 5. Very efficient: 21.38% 6. Blank: 0.94%	

Audit Question	Responses
In what areas do you think your home's energy efficiency needs improvement? *(Multiple answers permitted)*	1. Windows: 43.4% 2. Doors: 43.71% 3. Insulation: 36.16% 4. Light fixtures: 29.87% 5. Energy Efficient Appliances: 36.79% 6. Energy Efficient Electronics: 27.36% 7. Air tightness: 36.79% 8. Electric heating controls and thermostats: 28.62% 9. Electric hot water heating control: 26.73%
If Hydro were to offer other programs or incentives in the future, what incentives would interest you?	The following is a summary highlighting key customer comments: • Appliance rebates, including higher rebates (43) • Home energy audits, including measuring heat loss (8) • Commercial fridge/freezer programs (6) • Roofing (11) and siding (2) • Lower rates (8) • Cash incentive for lowering kWh use (1) • Compare pre- and post-kit installation energy use (1) • Attic, exterior, floor, ceiling, basement, and crawlspace insulation • Assistance to cover window/door installation

In the next 12 months, do you plan to take any of these actions to reduce your energy use at home?	• Install new or upgrade insulation: 25.79%
	• Turn down heat or air conditioning at night or when not at home: 89.31%
	• Turn off lights and/or appliances when not in use: 98.43%
	• Wash laundry in cold water88.36%
	• Buy energy saving appliances or use EnergySTAR® appliances: 50%
	• Install high performance or programmable thermostats: 21.38%
	• Install EnergySTAR® windows: 28.62%
	• Use LED holiday lights: 72.64%
	• Other:
	  ○ Install/replace doors
	  ○ New siding
	  ○ Use clothesline instead of dryer
	  ○ Educate children on energy saving tactics
	  ○ Turn power off to house for the summer
	  ○ Eliminating drafts and going to replace more windows

Audit Question	Responses
Rate your satisfaction with the takeCharge program *(1=Poor, 5=Excellent)*	• Very Dissatisfied: 2.2% • Dissatisfied: 0% • Neutral: 12.26% • Somewhat Satisfied: 22.01% • Very Satisfied: 70.75% • Blank: 0.94%
Rate your level of satisfaction with the representative's service	• Very Dissatisfied: 0.63% • Dissatisfied: 0.31% • Neutral: 2.52% • Somewhat Satisfied: 12.58% • Very Satisfied: 81.45% • Blank: 2.52%

NEWFOUNDLAND POWER
A FORTIS COMPANY

Newfoundland Power Inc.

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HAND DELIVERED

February 26, 2010

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies & Gentlemen:

In accordance with Order No. P.U. Order No. P.U. 7 (1996-97), enclosed are the original and 8 copies of the 2009 Conservation and Demand Management Report.

If you have any questions, please do not hesitate to call me at the number listed below.

Yours very truly,

Peter Alteen
Vice President, Regulation
& Planning

Enclosures

c. Geoff Young
Newfoundland & Labrador Hydro

2009 Conservation and Demand Management Report

February 26, 2010

(filed in compliance with Order No. P.U. 7 (1996-97))

NEWFOUNDLAND POWER
A FORTIS COMPANY

Table of Contents

Page

1.0 Introduction

In Order No. P.U. 7 (1996-97), the Board ordered, in effect, that Newfoundland Power (the "Company") file annual progress reports on its demand management activities, including conservation.

This report is filed in compliance with Order No. P.U. 7 (1996-97) and outlines the Company's ongoing conservation and demand management ("CDM") activities.

During 2009, the Company accelerated its conservation activities under the *takeCHARGE* brand, launched in November 2008, to provide customers with advice and assistance to manage their energy usage.

Jointly with Newfoundland and Labrador Hydro ("Hydro"), the Company introduced four new conservation programs under *takeCHARGE*, while continuing to broaden its community outreach activities and industry partnerships. The *takeCHARGE* conservation programs are available throughout the province of Newfoundland and Labrador as a result of this joint utility action. This report, however, focuses on Newfoundland Power's programs.

In 2009, Newfoundland Power also continued to work with the Provincial Government to coordinate *takeCHARGE* activities with Government initiatives, such as EnerGuide for Houses.

2.0 CDM Planning and Coordination

2.1 Energy Conservation and Efficiency Partnership

The Provincial Government's Energy Plan, released in September 2007, announced the establishment of the Energy Conservation and Efficiency Partnership ("ECEP") to coordinate planning and delivery of energy conservation programs in the province. During 2009, responsibility for ECEP moved to the new Climate Change Office of the Executive Council. The Climate Change Office provides policy development and analysis on climate change, energy efficiency and emissions trading. Newfoundland Power and Hydro will continue to participate in the ECEP advisory group.

During 2009, the Company also continued its relationship with Government in the delivery of conservation programs. For example, the Company coordinates with the Department of Natural Resources and Newfoundland & Labrador Housing regarding the EnerGuide for Houses and low income residential energy efficiency programs.

2.2 Five-Year Energy Conservation Plan

In 2008, Newfoundland Power and Hydro jointly developed the *Five-Year Conservation Plan:2008-2013* (the "Plan"), which was filed with the Board in June 2008. The Plan provides an overview of the conservation marketplace in the province of Newfoundland and Labrador and outlines a strategy to be implemented by the utilities for joint conservation activities.

In 2009, the first four programs outlined in the plan were introduced. Three residential programs were launched in June, followed by the commercial lighting program in August. As outlined below, the Company and Hydro collaborated throughout the year to increase awareness and

participation in these programs as well as provide energy conservation information and advice to their respective customers.

3.0 Energy Conservation Promotion and Education

During 2009, Newfoundland Power expanded its customer education and conservation awareness activities including promotion of its *takeCHARGE* programs. These education and awareness activities involved a mass media marketing campaign, community outreach, and trade ally development. The impacts of these activities are reflected in the level of customer contacts and program participation, as well as in the results of customer surveys.

3.1 Mass Media Advertising

The Company used a range of advertising media, including newspaper, radio and online campaigns to increase awareness of the *takeCHARGE* brand and programs. Three new television advertisements were aired on CBC and NTV province-wide from September to December 2009. These advertisements were also featured in local cinemas and through online video websites. Billboard and ice rink board advertisements were also utilized throughout the year.

Five *takeCHARGE* newsletters were distributed to customers with electricity bills during the year. These newsletters offer energy efficiency information and encourage participation in the Company's incentive programs. The Company also promoted the *takeCHARGE* programs through two customer contests: the "What's Out Your Window" contest during the summer season and the "Warm Up to Win" ENERGY STAR® electronics contest in November.

In November, Hydro and Newfoundland Power jointly hosted Energy Efficiency Week. Mall displays were held in eight communities across the province, and a five part *takeCHARGE* television series highlighted the most common ways to reduce energy usage at home.

3.2 Community Outreach

During 2009, the Company participated in 122 community outreach events across the province, up from 94 events in 2008. Energy efficiency information was presented to diverse groups including the Federal Pensioners Association, Remax, the Armed Forces, the Stephenville Trail Committee and Municipalities Newfoundland and Labrador. *takeCHARGE* information booths were displayed at 55 home shows, shopping malls and trade fairs across the island. Through all of these outreach activities, members of the *takeCHARGE* team assisted customers with their energy questions, and raised awareness of energy conservation and the *takeCHARGE* programs.

3.3 Trade Allies

Newfoundland Power expanded its network of trade allies across the island. For example, *takeCHARGE* team members visited more than 150 retailers on two occasions in 2009 to provide point of purchase display material promoting *takeCHARGE* programs, and educate the retail staff on the particulars of the various programs offered. Retailers and other trade allies play an important role in helping customers make good decisions regarding energy conservation improvements in their homes.

4.0 Customer Interest and Awareness

Customers' interest in energy conservation programs and information increased during 2009 as awareness of the *takeCHARGE* campaign grew.

4.1 Customer Contacts

Table 1 shows the number of customer-initiated contacts with the Company for energy conservation information from 2005 to 2009.

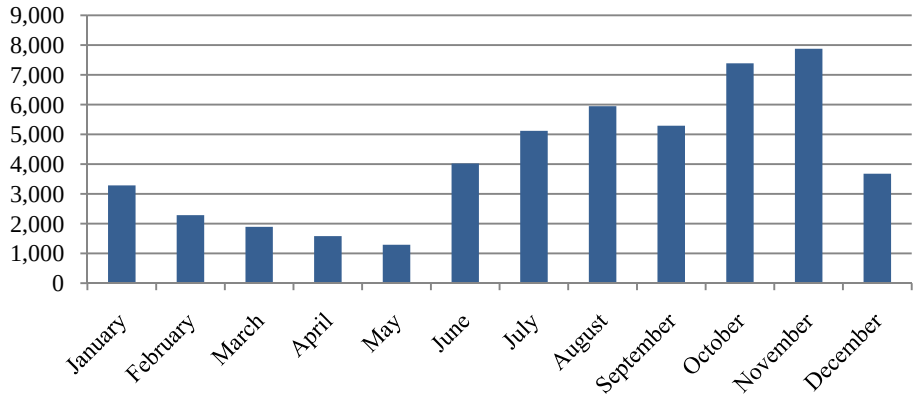
Table 1
Customer Contacts for
Energy Conservation Information

	2005	2006	2007	2008	2009
Contact Centre Inquiries	8,392	9,150	14,207	13,795	14,823
Website Visits[1]	11,078	18,026	31,673	23,444	49,648

During 2009, customer calls to the Company's Contact Centre related to energy conservation were consistent with that experienced over the previous two years. Website visits more than doubled in 2009 over 2008. Over 38,000 individual visitors availed of the website during the year to obtain energy efficiency information and details on how to participate in the *takeCHARGE* rebate programs.[2]

Figure 1 shows the website visits by month during 2009.

Figure 1
***takeCHARGE* Website Visits by Month**
2009



[1] Total includes visits to Newfoundland Power's Bright Ideas website prior to the November 2008 launch of the *take*Charge website.

[2] 38,000 individual visitors accessed the website in 2009 for a total of 49,648 visits.

Figure 1 shows that a significant increase in website visits occurred following the June *takeCHARGE* program launch and also in October and November following the implementation of a province-wide advertising campaign.

4.2 Customer Surveying

The Company conducted its annual customer attitude and awareness survey on energy efficiency in November 2009. Consistent with prior years, the results confirm that customers want to receive information on using electricity more efficiently and that they expect the Company to provide this information.

The survey results also indicate that customers' awareness of *takeCHARGE* is strong, with nearly eight in ten respondents recalling the campaign one year after its inception. The television campaign had the highest level of recall at 79%, followed by bill inserts at 42% and newspapers at 14%. Over 40% of respondents said that they had tried to reduce their electricity usage as a result of the *takeCHARGE* campaign.

Customer interest in participating in the *takeCHARGE* programs within the next 12 months varied from 17% for programmable thermostats to 8% for ENERGY STAR® windows. These results indicate that the Company's advertising and promotions have increased customers' awareness and interest in energy conservation.

5.0 CDM Programs

The Company provides its residential and commercial customers with conservation and demand management programs which result in quantifiable energy and demand savings. The following describes these programs and the results obtained during 2009.

5.1 Residential Energy Conservation

The Company implemented three conservation programs for residential customers in 2009. These programs were bundled for marketing as the *takeCHARGE* "Energy Savers". These programs focus on reducing energy consumption but also provide reductions in peak demand.

Insulation Rebate Program
This program targets efficiencies in home heating by providing customers with incentives to improve insulation levels in basements and attics. Upgrading the insulation of existing homes and insulating foundations in new homes are included. Eligibility is limited to electrically heated homes, based on annual kWh usage. Customers can receive an incentive of two cents per R value per square foot of insulation added to basement walls or ceilings, and one cent per R value per square foot for insulation added to their attics. Rebates and financing are processed through customer applications.

This program replaces the Wrap Up for Savings program which existed until the launch of the new program in June 2009. This program is promoted in partnership with trade allies in the retail, home building and renovation industries.

Thermostat Rebate Program
This program assists customers to better control the temperature of their homes and to set back the temperature during the night and when away from home. This will reduce the heating requirement of their electric heating system. Rebates and financing are available for both the home retrofit market and new homes. Incentives of $10 for each ENERGY STAR® programmable thermostat and $5 for each electronic high performance thermostat are offered. Rebates are issued through authorized dealers and through customer-submitted coupons.

This program replaces the Company's previous thermostat rebate program. This program is promoted in partnership with manufacturers, retailers, electrical contractors and home builders.

ENERGY STAR® Window Rebate Program
This program encourages customers purchasing new or replacement windows to choose ENERGY STAR® rated windows over standard windows. Eligibility is limited to electrically heated homes, based on annual kWh usage. Customers who purchased ENERGY STAR® windows receive a rebate of two dollars per square foot of window installed. Rebates and financing are processed through customer application.

This program is promoted in partnership with trade allies, such as retailers, manufacturers, and home building and renovation contractors.

Residential Program Results
Table 2 shows the 2009 customer participation levels achieved and the energy and peak demand savings results.

Table 2
Residential Program Participation and Savings[3]

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Insulation Rebate Program	607	1,588	488
Thermostat Rebate Program	915	470	145
ENERGY STAR® Window Rebate Program	478	405	125
Total	**2,000**	**2,463**	**758**

Details of residential program cost effectiveness in 2009 are provided in Appendix A.

5.2 Commercial Energy Conservation

The Company implemented one conservation program for commercial customers in 2009. This program focuses on reducing energy consumption but also provides reductions in peak demand.

[3] Estimated savings are those that will accrue to participants on an annual basis. Actual savings during 2009 may have been less depending on when the customer completed their construction / renovation during the year.

Commercial Lighting Incentive Program
The commercial lighting program targets energy reductions through more efficient lighting technologies in commercial buildings. The commercial lighting program offers sales incentives to participating lighting distributors to sell high performance T8 lighting fixtures, ballasts and lamps to their customers, instead of selling standard T8 or T12 lighting systems. The incentive of $1.25 for lamps and $4.25 for ballasts eliminates the cost differential from upgrading to the higher efficiency lighting systems and provides a sales incentive for the distributor. High performance T8 lighting systems use 25% to 40% less energy than standard T8 and T12 systems.

The program is promoted through lighting distributors and through engineering groups who develop building specifications. Participating lighting distributors provide the Company with sales and customer data in exchange for rebates.

Commercial Program Results
Table 3 shows the 2009 customer participation levels achieved and the energy and peak demand savings results.

Table 3
Commercial Programs Participation and Savings[4]

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Commercial Lighting Incentive Program	168	217	85

Details of commercial program cost effectiveness in 2009 are provided in Appendix A.

5.3 Demand Management

The Company has one customer program, the Curtailable Service Option, which is focused on Demand Management.

Curtailable Service Option
The Curtailable Service Option (the "Option") provides an incentive to large customers to reduce electrical demand at the request of the Company during the winter peak season. The Option is available to general service customers billed on Rate 2.3 or 2.4 who can reduce their demand by at least 330 kVA. Participants who curtail their load at the request of the Company receive an annual credit on their electricity bills at the end of the winter season.

Twenty three general service customers participated in the Option during the 2008-2009 winter season providing a load reduction of approximately 10 MW. This load reduction is exercised to reduce demand to manage purchased power costs and to minimize customer outages. Detailed results for the 2008-2009 winter peak season were submitted to the Board in the *2009 Curtailable Service Option Report* dated April 30, 2009.

[4] Estimated savings are those that will accrue to participants on an annual basis. Actual savings during 2009 may have been less depending on when the customer completed their construction / renovation during the year.

6.0 CDM Costs

The Company's CDM costs for 2009 are reflective of its expanded *takeCHARGE* initiative and the introduction of four new customer incentive programs.

Table 4 summarizes Newfoundland Power's costs associated with CDM activities from 2005 to 2009.

Table 4
Conservation and Demand Management Costs
($000s)

	2005	2006	2007	2008	2009
General Conservation Costs					
Education & Outreach	134	121	226	272	404
Support	122	93	93	104	183
Planning	35	64	150	204	225
Total General Conservation Costs	291	278	469	580	812
Conservation Program Costs					
Residential					
Wrap up for Savings	90	97	155	126	12
Thermostat Rebates	5	9	20	44	8
Energy Savers Program					
General[5]	-	-	-	-	750
Insulation	-	-	-	-	138
Thermostats	-	-	-	-	77
Windows	-				254
Commercial					
Lighting	-	-	-	-	117
Total Conservation Program Costs	95	106	175	170	1,356
CDM Capital Expenditures[6]				50	156
Demand Management Program Costs					
Curtailable Service Option	153	269	254	277	225
Total	**539**	**653**	**898**	**1,077**	**2,549**

[5] General costs are those program related costs which cannot be assigned to a single program, such as advertising and retail point-of-purchase materials which include multiple programs.

[6] Capital expenditures associated with takeCHARGEnl.ca, the rebate processing and tracking system and the employee toolkit.

7.0 Outlook

Newfoundland Power will continue to promote and encourage participation in its *takeCHARGE* incentive programs through 2010. As contemplated in the Plan, joint planning has commenced with Hydro for additional program offerings, with potential implementation in late 2010.

The Company will continue joint conservation awareness initiatives with Hydro to provide advice and information for customers on managing their energy usage. Community outreach and industry partnerships will be key components of the Company's customer education approach. The takeCHARGEnl.ca website will be enhanced with additional interactive tools and information to help customers save energy and money.

Newfoundland Power will also continue to work with the Provincial and Federal Governments in promoting awareness of energy conservation programs that benefit customers.

Appendix A

takeCHARGE Programs
2009 Cost Effectiveness Results

takeCHARGE Programs
2009 Cost Effectiveness Results

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] For 2009, the DSM program tests indicated benefit to cost ratios as follows:

	Participants Test [2]	Rate Impact Test [3]	Total Resource Cost Test [4]
Insulation Rebate Program	1.89	1.42	2.13
Thermostat Rebate Program	4.31	0.87	1.44
ENERGY STAR® Window Rebate Program	3.73	0.58	0.89
Total Residential Portfolio	2.29	1.09	1.68
Commercial Lighting Incentive Program	9.16	0.64	1.61
Total Program Portfolio	2.48	1.05	1.68
Provincial Residential Portfolio[5]	2.28	1.08	1.64
Provincial Commercial Portfolio[5]	9.16	0.62	1.50

The *takeCHARGE* program portfolio passes each of these economic cost effectiveness tests based on 2009 program results. Since the programs were implemented mid-year in 2009, cost effectiveness results can be expected to improve in future years.

1 Analysis is based on the Company's 2007 marginal cost study updated with recent fuel cost forecasts. Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect.
2 A *Participants Test* is used to determine if a DSM program minimizes the overall costs for participants.
3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.
4 A *Total Resource Cost Test* is used to determine if a DSM program minimizes the overall cost of supplying energy.
5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. Details regarding costs and benefits of Hydro's 2009 programs were filed with the Board as part of Hydro's 2010 CDM cost deferral application in January 2010.

NEWFOUNDLAND POWER
A FORTIS COMPANY

Newfoundland Power Inc.

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HAND DELIVERED

February 28, 2011

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies & Gentlemen:

In accordance with Order No. P.U. 7 (1996-97), enclosed are the original and 8 copies of the 2010 Conservation and Demand Management Report.

If you have any questions, please do not hesitate to call me at the number listed below.

Yours very truly,

Gerard M. Hayes
Senior Counsel

Enclosures

c. Geoff Young
Newfoundland & Labrador Hydro

2010 Conservation and Demand Management Report

February 28, 2011

(filed in compliance with Order No. P.U. 7 (1996-97))

NEWFOUNDLAND POWER
A FORTIS COMPANY

Table of Contents

1.0 Introduction

In Order No. P.U. 7 (1996-97), the Board ordered, in effect, that Newfoundland Power (the "Company") file annual progress reports on its demand side management activities, including conservation.

This report is filed in compliance with Order No. P.U. 7 (1996-97) and outlines the Company's ongoing conservation and demand management ("CDM") activities.

Newfoundland Power continues to work jointly with Newfoundland and Labrador Hydro ("Hydro") under the *takeCHARGE* brand to provide customers with assistance and advice to manage their energy usage. 2010 was the first full year of offering joint utility customer energy conservation programs under *takeCHARGE.* The utilities also worked together to develop new customer energy conservation programs and commenced a review of program evaluation procedures. Activities to raise customer awareness of energy conservation were extended in 2010 as well, including broadened community outreach and industry partnerships.

The Company and Hydro continued to work with the Provincial Government regarding conservation programs, such as *EnerGuide for Houses* offered through the Department of Natural Resources, as well as policy development through the Office of Climate Change, Energy Efficiency and Emission Trading ("CCEEET").

While conservation initiatives under *takeCHARGE* are available throughout the province of Newfoundland and Labrador as a result of joint utility action, this report focuses on Newfoundland Power's programs.

2.0 CDM Planning and Coordination

2.1 Energy Conservation and Efficiency Partnership

The Provincial Government's Energy Plan, released in September 2007, announced the establishment of the Energy Conservation and Efficiency Partnership ("ECEP") to coordinate planning and delivery of energy conservation programs in the province. During 2009, responsibility for ECEP moved to the new CCEEET within Executive Council. The CCEEET provides policy development and analysis on climate change, energy efficiency and emissions trading.

During 2010, CCEEET formed a Government-Utilities Working Group on Energy Efficiency which includes Newfoundland Power and Hydro. This working group meets on an ongoing basis to exchange views, discuss programs and review methodologies for evaluating the impact of policies and programs.

The Company and Hydro continued their relationship with Government in the delivery of conservation programs in 2010. The Company meets regularly with the Department of Natural Resources and Newfoundland and Labrador Housing to exchange information and provide updates on the progress of their respective programs. Information regarding energy conservation programs offered by both Government and the utilities is shared and promoted to ensure consumers have the opportunity to maximize their savings.

2.2 Five-Year Energy Conservation Plan

In 2008, Newfoundland Power and Hydro jointly developed the *Five-Year Conservation Plan:2008-2013* (the "Plan"), which was filed with the Board in June 2008. The Plan provides an overview of the conservation marketplace in the province of Newfoundland and Labrador and outlines a strategy to be implemented by the utilities for joint conservation activities.

In 2009, the first four programs outlined in the Plan were introduced. The program portfolio included three residential programs and a commercial lighting program. In 2010, the Company and Hydro continued to collaborate to increase awareness and participation in these programs, develop new programs, and provide energy conservation information and advice to their respective customers.

3.0 Energy Conservation Promotion and Education

During 2010, Newfoundland Power continued its customer education and conservation awareness activities including promotion of its *takeCHARGE* rebate programs. These education and awareness activities involved a mass media marketing campaign, community outreach and trade ally development. The impacts of these activities are reflected in the level of program participation and customer contacts, as well as in the results of customer surveys.

3.1 Mass Media Advertising

Throughout 2010, the Company used a range of advertising media, including television, newspaper, radio and online campaigns to increase awareness of the *takeCHARGE* brand and rebate programs. Three new "Get Behind the $avings" television advertisements were produced and aired province-wide on CBC and NTV. These advertisements were also featured in online websites and billboards.

Five *takeCHARGE* newsletters were distributed with electricity bills during the year. These newsletters offered energy efficiency information and encouraged participation in the Company's rebate programs.

The 2nd annual *takeCHARGE* Energy Efficiency Week was held from October 2nd – 8th, with *takeCHARGE* teams hosting events at building supply stores across the province, providing energy efficiency advice to consumers and promoting the *takeCHARGE* Energy Savers rebate programs. A mass media campaign during Energy Efficiency Week promoted these events and encouraged customers to make wise energy choices.

Energy efficiency education and awareness also expanded to include the use of social media with the launch of Facebook and YouTube as new avenues to reach consumers. The *takeCHARGE* Facebook page currently has over 700 fans.

3.2 Community Outreach

During 2010, the Company participated in over 170 community outreach events across the province, up from 122 events in 2009. Energy efficiency information was presented to diverse groups including retailers and suppliers, senior citizens and youth. Interactive *takeCHARGE* information booths were displayed at 106 home shows, shopping malls and trade fairs across the island. Through all of these outreach activities, members of the *takeCHARGE* team assisted customers with their energy questions, and raised awareness of energy conservation and the *takeCHARGE* rebate programs.

At the 2010 Municipalities Newfoundland and Labrador Annual Convention, the first ever *takeCHARGE of Your Town Challenge* was launched to increase energy conservation awareness and practice in homes and businesses, and throughout communities. Over 100 communities pledged to take action to reduce the energy they used.

3.3 Trade Allies

Newfoundland Power expanded its network of trade allies across the island in 2010. Retailers and other trade allies play an integral role in assisting customers make wise energy conservation decisions and home improvements. *takeCHARGE* team members visited more than 150 retailers in 2010. These visits focused on expanding the training provided in 2009 and getting feedback from retailers aimed at improving the effectiveness of point of purchase material. This feedback also helped identify opportunities to increase customer awareness of the rebate programs and visits to the website through new marketing materials.

4.0 Customer Interest and Awareness

Customers' interest in energy conservation programs and information remained strong during 2010 as awareness of the *takeCHARGE* campaign increased.

4.1 Customer Contacts

Table 1 shows the number of customer-initiated contacts with the Company for energy conservation information from 2006 to 2010.

Table 1
Customer Contacts for
Energy Conservation Information

	2006	2007	2008	2009	2010
Contact Centre Inquiries	9,150	14,207	13,795	14,823	11,704
Website Visits	18,026	31,673	23,444	49,648	52,013
Total	**27,176**	**45,880**	**37,239**	**64,471**	**63,717**

The number of customer contacts related to energy conservation in 2010 was comparable to 2009. In each year, there were approximately 64,000 customer contacts through the *takeCHARGE* website and the Company's customer contact centre, which reflects an increase of about 72% over 2008. During 2010, customers increasingly chose electronic means of communication with the Company to obtain energy conservation information and details on how to participate in rebate programs. More than 52,000 visits to the *takeCHARGE* website were recorded throughout the year, a 4.6% increase over 2009. This increase reflects the strategy to promote the website as a primary source for customer information.

4.2 Customer Surveying

Newfoundland Power conducted its annual customer attitude and awareness survey on energy efficiency in November 2010. Results show that the Company's advertising and promotions have influenced customers' awareness and interest in energy conservation. Nearly half of respondents said that they had tried to reduce their electricity usage as a result of the *takeCHARGE* campaign.

The survey results indicate that customers' awareness of *takeCHARGE* remains strong, with seven in ten respondents recalling the campaign. The television campaign had the highest level of recall at 78%, followed by bill inserts at 54%. Customer interest in participating in the *takeCHARGE* programs within the next 12 months varied from 14% for programmable thermostats to 9% for ENERGY STAR® windows.

Newfoundland Power also conducted an energy end use survey. This survey provides the Company with information such as customers' fuel usage, main heating systems and certain aspects of energy efficiency. This customer energy use information supports load forecasting and customer energy conservation program planning and evaluation.

5.0 CDM Programs

The CDM program portfolio provides residential and commercial customers with conservation and demand management incentives which result in quantifiable energy and demand savings. 2010 was the first full year of activity for the *takeCHARGE* conservation programs. The programs substantially increased participation and savings from 2009.

The following describes the *takeCHARGE* rebate programs and the results obtained during 2010.

5.1 Residential Energy Conservation

The Company continued to offer three energy conservation programs for residential customers in 2010. These programs were bundled for marketing as the *takeCHARGE* "Energy Savers". These programs focus on reducing space heating energy consumption, and also provide reductions in peak demand.

Insulation Rebate Program
This program targets efficiencies in home heating by providing customers with incentives to improve insulation levels in basements and attics. Upgrading the insulation of existing homes and insulating foundations in new homes are included. Eligibility is limited to electrically-

heated homes, determined on the basis of annual kWh usage. Customers can receive an incentive of two cents per R-value per square foot of insulation added to basement walls or ceilings, and one cent per R-value per square foot for insulation added to their attics. Rebates and financing are processed through customer applications.

This program replaces the Wrap Up for Savings program which existed until the launch of the new program in June 2009. This program is promoted in partnership with trade allies in the retail, home building and renovation industries.

Thermostat Rebate Program
This program assists customers to better control the temperature of their homes and to set back the temperature during the night and when away from home. This will reduce the heating requirement of their electric heating system. Rebates and financing are available for both the home retrofit market and new homes. Incentives of $10 for each programmable thermostat and $5 for each electronic high performance thermostat are offered. Rebates are issued through authorized dealers and through customer-submitted coupons.

This program replaces the Company's previous thermostat rebate program. This program is promoted in partnership with manufacturers, retailers, electrical contractors and home builders.

ENERGY STAR® Window Rebate Program
This program encourages customers purchasing new or replacement windows to choose ENERGY STAR® rated windows over standard windows. Eligibility is limited to electrically-heated homes, determined on the basis of annual kWh usage. Customers who purchase ENERGY STAR® windows receive a rebate of two dollars per square foot of window installed. Rebates and financing are processed through customer applications.

This program is promoted in partnership with trade allies, such as retailers, manufacturers, and home building and renovation contractors.

Residential Program Results
Table 2 shows the 2010 customer participation levels achieved, and the energy and peak demand savings results.

Table 2
2010 Residential Program Participation and Savings [1]

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Insulation Rebate Program	661	2,177	674
Thermostat Rebate Program	1538	1,186	366
ENERGY STAR® Window Rebate Program	899	989	305
Total	**3,098**	**4,352**	**1,345**

[1] Estimated savings are those that will accrue to participants on an annual basis. Actual savings during 2010 may have been less depending on when the customer completed their construction / renovation during the year.

Residential Program Planning and Evaluation
This year, the Company undertook planning for new residential programs and a review of its processes for evaluating programs.

The Company reviewed a number of technologies for potential new programs. Based on that review, mini-split (ductless) heat pumps will be investigated further through a technology evaluation program. Also a rebate program for high efficiency heat recovery ventilators will be considered for implementation in 2011.[2]

Since the implementation of the residential programs in 2009, there has been strong customer participation in urban markets and weaker participation in rural markets. To address this problem, Hydro implemented a pilot Customer Coupon Program in November 2010. Results of that program will be used to determine if it should be expanded to include other rural areas in the Province.

In December 2010, the CADMUS Group Inc., an energy consultant, was contracted to conduct a process review of the Company's programs and make recommendations for improvement of the Company's program evaluation methods. This review is ongoing.

Details of residential program cost effectiveness in 2010 are provided in Appendix A.

5.2 Commercial Energy Conservation

Newfoundland Power continued to offer a commercial lighting incentive program in 2010. This program focuses on reducing energy consumption, but also provides reductions in peak demand.

Commercial Lighting Incentive Program
The commercial lighting program targets energy reductions through more efficient lighting technologies in commercial buildings. The commercial lighting program offers sales incentives to participating lighting distributors to sell high performance T8 lighting fixtures, ballasts and lamps to their customers, instead of selling standard T8 or T12 lighting systems. The incentive of $1.25 for lamps and $4.25 for ballasts eliminates the cost differential from upgrading to the higher efficiency lighting systems and provides a sales incentive for the distributor. High performance T8 lighting systems use 25% to 40% less energy than standard T8 and T12 systems.

The program is promoted through lighting distributors and through engineering firms who develop building specifications. Participating lighting distributors provide the Company with sales and customer data in exchange for rebates.

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[2] An investigation of the market for ENERGY STAR® dishwashers and clothes washers indicated an already high level of penetration of these products in the province.

Commercial Program Results
Table 3 shows the 2010 customer participation levels achieved, and the energy and peak demand savings results.

Table 3
2010 Commercial Programs Participation and Savings[3]

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Commercial Lighting Incentive Program	232	707	296

Commercial Program Planning and Evaluation
This year, consideration was given to expanding the commercial lighting program. Based on this review, it was decided to proceed with rebates for LED exit signs. This expansion was envisioned during the initial development of the commercial lighting program. It will be implemented during 2011.

The commercial lighting incentive program is also included in the Company's review of its processes for evaluating programs which began in 2010.

Details of commercial program cost effectiveness in 2010 are provided in Appendix A.

5.3 Demand Management

The Company has one customer program, the Curtailable Service Option, which is focused on Demand Management.

Curtailable Service Option
The Curtailable Service Option (the "Option") provides an incentive to large customers to reduce electrical demand at the request of the Company during the winter peak season. The Option is available to general service customers billed on Rate 2.3 or 2.4 who can reduce their demand by at least 330 kVA. Participants who curtail their load at the request of the Company receive an annual credit on their electricity bills at the end of the winter season.

Twenty four general service customers participated in the Option during the 2009-2010 winter season, providing a load reduction of approximately 9.5 MW. This load reduction is exercised to reduce demand to manage purchased power costs and minimize customer outages. Detailed results for the 2009-2010 winter peak season were submitted to the Board in the *2010 Curtailable Service Option Report* dated April 29, 2010.

[3] Estimated savings are those that will accrue to participants on an annual basis. Actual savings during 2010 may have been less depending on when the customer completed their construction / renovation during the year.

6.0 CDM Costs

The Company's CDM costs for 2010 are reflective of its expanded *takeCHARGE* initiative and the four customer energy conservation incentive programs.

Table 4 summarizes Newfoundland Power's costs associated with CDM activities from 2006 to 2010.

Table 4
Conservation and Demand Management Costs
($000s)

	2006	2007	2008	2009[4]	2010
General Conservation Costs					
Education & Outreach	121	226	272	404	380
Support	93	93	104	183	158
Planning	64	150	204	225	249
Total General Conservation Costs	278	469	580	812	787
Conservation Program Costs					
Residential					
Wrap up for Savings	97	155	126	12	0
Thermostat Rebates	9	20	44	8	0
Energy Savers Program					
General[5]	-	-	-	750	1,398
Insulation	-	-	-	157	241
Thermostats	-	-	-	77	100
Windows				285	320
Commercial					
Lighting	-	-	-	67	83
Total Conservation Program Costs	106	175	170	1,356	2,142
CDM Capital Expenditures[6]			50	156	53
Demand Management Program Costs					
Curtailable Service Option	269	254	277	225	278
Total	**653**	**898**	**1,077**	**2,549**	**3,260**

[4] Program costs for 2009 have been updated to better reflect rebate accruals for each program. The 2009 reported costs originally attributed all rebate cost accruals to the commercial lighting program.

[5] General costs are those program related costs which cannot be assigned to a single program, such as advertising and retail point-of-purchase materials that include multiple programs.

[6] Capital expenditures associated with takeCHARGEnl.ca, the rebate processing and tracking system, and the employee toolkit.

7.0 Outlook

In 2011, Newfoundland Power will continue to promote and encourage customer participation in the *takeCHARGE* incentive programs. Newfoundland Power and Hydro also plan to introduce and enhance program offerings in 2011. Incentive programs will be expanded to include LED exit signs for commercial customers and high efficiency heat recovery ventilators for residential customers. The Companies will also begin a pilot study to assess mini-split heat pumps.

Newfoundland Power will continue joint conservation awareness initiatives with Hydro to provide advice and information for customers on managing their energy usage. Community outreach and industry partnerships will be key components of the Company's customer education approach. The takechargenl.ca website will continue to be enhanced with additional interactive tools and information to help customers save energy and money.

Newfoundland Power will also continue to work with the Provincial and Federal Governments in promoting awareness of energy conservation and programs that benefit customers.

Newfoundland Power will also review its customer energy conservation programs, taking into account recommendations of the ongoing process review evaluation.

Appendix A

takeCHARGE Programs
2010 Cost Effectiveness Results

takeCHARGE Programs
2010 Cost Effectiveness Results

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] For 2010, the DSM program tests indicated benefit to cost ratios as follows:

	Participants Test [2]	Rate Impact Test [3]	Total Resource Cost Test [4]
Insulation Rebate Program	2.17	1.12	1.86
Thermostat Rebate Program	5.28	0.98	2.20
ENERGY STAR® Window Rebate Program	3.97	0.64	1.24
Total Residential Portfolio	2.84	0.97	1.79
Commercial Lighting Incentive Program	8.40	1.62	9.78
Total Program Portfolio	3.05	1.02	2.00
Provincial Residential Portfolio[5]	2.85	0.96	1.76
Provincial Commercial Portfolio[5]	8.44	1.59	8.77

The *takeCHARGE* program portfolio passes each of these economic cost effectiveness tests based on 2010 program results.

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1 Analysis is based on the Company's 2007 marginal cost study updated with recent fuel cost forecasts. Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect.

2 A *Participants Test* is used to determine if a DSM program minimizes the overall costs for participants.

3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.

4 A *Total Resource Cost Test* is used to determine if a DSM program minimizes the overall cost of supplying energy.

5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. Details regarding costs and benefits of Hydro's 2010 programs were filed with the Board as part of Hydro's 2011 conservation cost deferral report in February 2011. The Provincial residential portfolio cost tests do not include the pilot Customer Coupon Program.

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HAND DELIVERED

February 29, 2012

Board of Commissioners
of Public Utilities
P.O. Box 21040
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St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies & Gentlemen:

In accordance with Order No. P.U. 7 (1996-97), enclosed are the original and 8 copies of the 2011 Conservation and Demand Management Report.

If you have any questions, please do not hesitate to call me at the number listed below.

Yours very truly,

Gerard M. Hayes
Senior Counsel

Enclosures

c. Geoffrey Young
Newfoundland and Labrador Hydro

2011 Conservation and Demand Management Report

February 29, 2012

(Filed in compliance with Order No. P.U. 7 (1996-97))

NEWFOUNDLAND POWER
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This report is filed in compliance with Order No. P.U. 7 (1996-97) and outlines the Company's ongoing conservation and demand management ("CDM") activities.

Newfoundland Power provides a variety of information and financial supports to its customers to help them manage their energy usage. Since 2009, the Company and Newfoundland and Labrador Hydro ("Hydro") have offered customer energy conservation programs jointly under the *takeCHARGE* brand. Customer participation and resulting energy savings from the *takeCHARGE* programs increased substantially in 2011.

The Company also works with Hydro and the Provincial Government to coordinate energy conservation activities across the province. This includes policy development, primarily through the Province's Office of Climate Change, Energy Efficiency and Emission Trading ("CCEEET"), and program delivery, primarily through the Department of Natural Resources.

While joint utility conservation initiatives under *takeCHARGE* are available throughout the province, this report focuses on Newfoundland Power's initiatives.

2.0 Coordination and Planning

2.1 Provincial Coordination

CCEEET provides policy development and analysis on climate change, energy efficiency and emissions trading for the Province. As follow-up to its 2007 Energy Plan, the Provincial Government through CCEEET released two action plans in August 2011 – *Charting our Course: Climate Change Action Plan 2011* and *Moving Forward: Energy Efficiency Action Plan 2011*. These action plans outline specific goals and commitments over the next five years.

In 2011, the CCEEET also completed several projects, including an assessment of modeling methods for energy efficiency program impacts in the province, as well as a review of Canadian commercial/industrial programs aimed at informing local program development. Through the CCEEET led Government-Utilities Working Group on Energy Efficiency, Newfoundland Power and Hydro contributed to these research projects and other discussions which inform policy.

The Company and Hydro continued their relationship with Government in the delivery of conservation programs in 2011. The Company meets with the Department of Natural Resources and Newfoundland and Labrador Housing to exchange information and provide updates on the progress of their respective programs.

2.2 Five-Year Energy Conservation Plan

In 2008, Newfoundland Power and Hydro jointly developed the *Five-Year Energy Conservation Plan: 2008-2013* (the "Plan"), which was filed with the Board in June 2008. The Plan provided

an overview of the conservation marketplace in the province of Newfoundland and Labrador and outlined a strategy to be implemented by the utilities for joint conservation activities.

The first four programs outlined in the Plan were introduced in 2009. This program portfolio included three residential programs and a commercial lighting program. The Company and Hydro continue to collaborate to increase customer awareness and participation in these programs as well as provide energy conservation information and advice to their respective customers. Participation and energy savings results from these programs continued to grow in 2011, and the commercial lighting program was expanded to include LED exit signs.

In 2011, the utilities began a review and revision of the Plan. This included evaluation of existing programs and assessment of the technical and economic feasibility of technologies for potential program expansion.[1] A revised joint utility conservation plan is expected to be completed in 2012. This plan will address customer education and incentive programs, planning and evaluation processes, and cost recovery and cost sharing arrangements.

2.3 Program Evaluation

Ongoing evaluation of the customer energy conservation program portfolio is based on Canadian utility practice and the Company's experience with program delivery since the 1990s. Programs are evaluated throughout their lifecycle from the perspective of (i) energy savings impacts, (ii) market transformation impacts, and (iii) delivery process effectiveness.

Economic evaluation of programs, based on industry standard test approaches, is undertaken annually.[2] Information is gathered from each customer participating in the programs. This ranges from technical data, such as the model of thermostat, window or lighting product, to the type of heating in the home and its geographic location. In addition, in-person verification audits are performed on a portion of program participants and are used to gather feedback regarding the effectiveness of the program from customers' perspectives. Telephone surveys are also conducted regularly regarding customers' attitudes toward energy conservation and the ways they use electricity.

Routine visits to retailers across the province, as well as relationships with manufacturers, distributors, contractors and other trade allies, enable the Company to gather market data and program delivery insights. This information has, for example, indicated an increase in the market share of ENERGY STAR® windows over the past three years.

The information from these various sources is a primary input to the planning process for program revisions or expansion. It is also used to evaluate and continuously improve the delivery of existing customer energy conservation programs. In addition, the results of a process review conducted in 2011 by CADMUS Group Inc. have been used to improve program delivery and evaluation processes, and are being incorporated into further planning. For example, recommended improvements were recently made to data tracking processes for verification audits of rebate program participants.

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1 Technology evaluation of mini-split (ductless) heat pumps and a potential program for heat recovery ventilators considered for 2011 were deferred and are being included in the ongoing revision of the Plan.

2 The costs and benefits of the *takeCHARGE* programs are analyzed from the perspective of participants, non-participants and total resources. See Appendices B and C.

3.0 Energy Conservation Promotion and Education

During 2011, Newfoundland Power continued its customer education and conservation awareness activities including promotion of its *takeCHARGE* Energy Savers rebate programs. These education and awareness activities involved a mass media marketing campaign, community outreach and trade ally development. The impacts of these activities are reflected in the level of program participation and customer contacts, as well as in the results of customer surveys.

3.1 Mass Media Advertising and Customer Engagement

Throughout 2011, the Company used a range of advertising media, including television, newspaper, radio and online campaigns to increase awareness of the *takeCHARGE* brand and rebate programs. Three "Get Behind the $avings" television advertisements continued to be aired province-wide on CBC and NTV, and were also featured in online websites.

Four *takeCHARGE* newsletters were distributed to customers with electricity bills during 2011. These newsletters offered energy efficiency information and encouraged participation in the Company's rebate programs.

The 3rd annual *takeCHARGE* Energy Efficiency Week was held from October 22nd – 28th, 2011. *takeCHARGE* teams hosted events at building supply stores across the province providing energy efficiency advice to consumers and promoting the *takeCHARGE* Energy Savers rebate programs. A one-day increased rebate promotion was offered for the insulation program on October 22nd. In addition, the first *takeCHARGE* energy efficiency education initiative with children was launched, with more than 25 schools participating.

Customer engagement in energy efficiency education and awareness through the *takeCHARGE* Facebook page increased significantly to over 6,000 fans from about 650 at the end of 2010. The "Battle of the Energy Savers" interactive contest was a primary driver of the increased activity.

3.2 Community Outreach

During 2011, the Company participated in over 100 community outreach events across the island. Energy efficiency information was presented to diverse groups including retailers and suppliers, senior citizens and youth. Interactive *takeCHARGE* information booths were displayed at close to 80 home shows, shopping malls and trade fairs across the island. Through these outreach activities, members of the *takeCHARGE* team assisted customers with their energy questions, and raised awareness of energy conservation and the *takeCHARGE* rebate programs.

A *takeCHARGE of Your Town Challenge* was launched in October 2010 to increase energy conservation awareness and engage communities through pledges to reduce energy usage over a three month period. The winner of the first *takeCHARGE of Your Town Challenge* was announced in March 2011. The residents of the Town of Admiral's Beach, St. Mary's Bay, reduced their energy consumption by approximately 9% compared to the same period of the previous year, the highest percentage reduction of all 106 participating communities. The Town received $10,000 to upgrade insulation and improve energy efficiency of a municipal building.

3.3 Trade Allies

Trade allies play an integral role in assisting customers to make wise decisions regarding energy conservation and home improvements. Newfoundland Power continued to expand partnerships with key retailers, such as Kent, and other trade allies across the province in 2011. These partnerships created opportunities to have an in-store presence as well as being featured in Kent flyers promoting energy efficient products such as programmable thermostats.

takeCHARGE team members visited more than 160 retailers in 2011. Specific outreach activities included presentations and lunch 'n' learns aimed at educating retailer staff on the benefits of energy efficient products as well as increasing awareness of the *takeCHARGE* Energy Savers rebate programs and website.

4.0 Customer Interest and Awareness

Customers' interest in energy conservation programs and information remained strong during 2011 as awareness of the *takeCHARGE* brand and programs increased.

4.1 Customer Contacts

Table 1 shows the number of customer-initiated contacts with the Company for energy conservation information from 2007 through 2011.

Table 1
Customer Contacts for
Energy Conservation Information

	2007	**2008**	**2009**	**2010**	**2011**
Contact Centre Inquiries	14,207	13,795	14,823	11,704	12,624
Website Visits	31,673	23,444	49,648	52,013	72,996
Total	**45,880**	**37,239**	**64,471**	**63,717**	**85,620**

The number of customer-initiated contacts with the Company related to energy conservation increased by 34% from 2010 to 2011, and has nearly doubled over the past 5 years.

The number of customers choosing electronic means of communication with the Company to obtain energy conservation information and details on how to participate in rebate programs increased by 40% over 2010. This is consistent with the broader trend toward electronic communication in recent years, and reflects the *takeCHARGE* strategy to promote the website as the primary resource for customer inquiries and information. Improvements to the website in 2011 included enhanced efficiency tips, videos and incorporation of social media feeds.

4.2 Customer Surveying

Newfoundland Power's annual survey of customer attitudes and awareness of energy efficiency indicates that awareness of *takeCHARGE* rebate programs has increased since 2010. Customer

awareness of the *takeCHARGE* Energy Savers residential rebate programs increased from approximately 30% to 40% of those surveyed.

Customer interest in the *takeCHARGE* rebate programs is also strong. Approximately 20% of those surveyed indicated they would likely take part in one of these programs in the coming year. The survey results also confirm that saving money remains customers' primary motivation for conserving electricity, with over 95% citing this as their primary reason for taking action.

5.0 CDM Programs

Newfoundland Power's CDM program portfolio provides residential and commercial customers with conservation and demand management incentives which result in quantifiable energy and demand savings.

5.1 Residential Energy Conservation

The Company continued to offer three energy conservation programs for residential customers in 2011. These programs are bundled together for marketing as the *takeCHARGE* Energy Savers. These programs focus on reducing space heating energy consumption and provide reductions in peak demand.

The programs include rebates and financing which are processed primarily through customer applications. Eligibility for the programs is limited to electrically heated homes, determined on the basis of annual kWh usage. Both retrofit projects and new home developments are eligible. The programs are promoted in partnership with trade allies in the retail, home building and renovation industries.

Insulation Rebate Program
The objective of this program is to increase the efficiency of home building envelopes by providing customers with incentives to improve insulation levels in basements and attics. Customers can receive an incentive of two cents per R-value per square foot of insulation added to basement walls or ceilings, and one cent per R-value per square foot of insulation added to their attics.

Thermostat Rebate Program
This program allows customers to better control the temperature in their home and to set back the temperature during the night or when they are away. Incentives of $10 for each programmable thermostat and $5 for each electronic high performance thermostat are offered. Rebates are issued both through authorized dealers and customer-submitted coupons.

ENERGY STAR Window Rebate Program
This program encourages customers to purchase ENERGY STAR rated windows over standard windows to improve the efficiency of their home's building envelope. Customers who purchase ENERGY STAR windows can receive a rebate of two dollars per square foot of window installed.

Residential Program Results

Table 2 shows the customer participation levels achieved by the residential program portfolio annually since its implementation in 2009, as well as the estimated energy and peak demand savings resulting from new participants in each year. [3]

Table 2
Residential Portfolio Participation and Savings
2009 through 2011

	2009	2010	2011
Customer Participation	2,000	3,098	6,303
Estimated Annual Energy Savings (MWh)	2,463	4,352	10,836
Estimated Peak Demand Savings (kW)	758	1,345	3,343

Customer participation in the *takeCHARGE* residential programs and resulting energy and peak demand savings have increased substantially in each year since implementation.

Appendix A provides the details of customer participation and energy and demand savings results for each of the *takeCHARGE* programs from 2009 through 2011.

Table 3 shows the customer participation levels achieved and the energy and peak demand savings results from each of the Company's residential programs in 2011.

Table 3
Residential Program Participation and Savings
2011

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Insulation Rebate Program	2,628	7,525	2,322
Thermostat Rebate Program	1,808	1,350	416
ENERGY STAR Window Rebate Program	1,867	1,961	605
Total	**6,303**	**10,836**	**3,343**

Approximately 10,836 MWh of energy savings and 3,343 kW of demand savings resulted from the residential programs in 2011. The majority of these savings were related to the insulation rebate program, which is consistent with previous years. Customer participation and savings related to the insulation rebate program approximately tripled in 2011, compared to 2010. This reflects both the impact of the one-day increased rebate offer during Energy Efficiency Week, as well as the continuing increase in customer awareness of the program.

[3] Unless otherwise noted, estimated savings provided in this report are those that will accrue to participants on an annualized basis. Actual savings during the year of participation will be less, based on when customers complete installation of energy saving measures during the year.

Participation and savings related to the ENERGY STAR window rebate program approximately doubled in 2011, compared to 2010. This reflects a change in the market for windows in the province toward more energy efficient products, including an increase in their use by home construction contractors.

Cost effectiveness assessment of the *takeCHARGE* residential programs indicates positive economic value. The results of cost effectiveness testing for 2011, and for the three years since current programs were implemented, are provided in Appendices B and C, respectively.

The estimated value of savings to the electrical system from the *takeCHARGE* residential programs to the end of 2011 is $2.4 million. The estimated value of savings related to each program annually since implementation is provided in Appendix D.

5.2 Commercial Energy Conservation

Newfoundland Power continued to offer a commercial lighting incentive program in 2011. This program focuses on reducing energy consumption, but also provides reductions in peak demand.

Commercial Lighting Incentive Program

The commercial lighting program targets energy reductions through more efficient lighting technologies in commercial buildings. The commercial lighting program offers sales incentives to participating lighting distributors to sell high performance T8 lighting, ballasts and lamps to their customers, instead of selling standard T8 or T12 lighting systems. The incentives of $1.25 for lamps and $4.25 for ballasts reduce the cost differential for upgrading to the higher efficiency lighting systems and provide a sales incentive for the lighting distributor. High performance T8 lighting systems use 25% to 40% less energy than standard T8 and T12 systems.

The program is primarily promoted through local lighting distributors. Participating lighting distributors provide the Company with sales and customer data in exchange for rebates.

The commercial lighting program was expanded in 2011 to include LED exit signs for retrofit applications. The incentive for exit signs is $21.00 per unit. LED exit signs use 80-90% less energy than fixtures with incandescent lamps.

Commercial Program Results

Table 4 shows the customer participation levels achieved by the commercial lighting program annually since its implementation in 2009, as well as the estimated energy and demand savings resulting from new participants in each year.

Table 4
Commercial Program Participation and Savings
2009 through 2011

	2009	**2010**	**2011**
Customer Participation	168	232	227
Estimated Annual Energy Savings (MWh)	170	707	1,292
Estimated Peak Demand Savings (kW)	69	296	464

The number of customers participating in the commercial lighting program has been consistent through 2010 and 2011. Energy and demand savings have, however, increased substantially. This reflects an increase in the number of higher efficiency ballasts and lamps per participant.

Appendix A provides the details of customer participation and energy and demand savings results for each of the *takeCHARGE* programs from 2009 through 2011.

Table 5 shows the customer participation levels achieved and the energy and peak demand savings results from the commercial lighting program in 2011.

Table 5
Commercial Program Participation and Savings
2011

Program	Customer Participation	Estimated Annual Energy Savings (MWh)	Estimated Peak Demand Savings (kW)
Commercial Lighting Incentive Program	227	1,292	464

Approximately 1,292 MWh of energy savings and 464 kW of demand savings resulted from the commercial lighting program in 2011.

Cost effectiveness assessment of the *takeCHARGE* commercial lighting program indicates positive economic value. The results of cost effectiveness testing for 2011, and for the three years since the current program was implemented, are provided in Appendices B and C, respectively.

The estimated value of savings to the electrical system from the *takeCHARGE* commercial lighting program to the end of 2011 is $350,000. The estimated value of savings related to each *takeCHARGE* program annually since implementation is provided in Appendix D.

5.3 Demand Management

The Company has one customer program, the Curtailable Service Option (the "Option"), which is focused on Demand Management.

Curtailable Service Option
The Option provides an incentive to large customers to reduce electrical demand at the request of the Company during the winter peak season. The Option is available to general service customers billed on Rate 2.3 or 2.4 who can reduce their demand by at least 330 kVA. Participants who curtail their load at the request of the Company receive an annual credit on their electricity bills at the end of the winter season.

Nineteen general service customers participated in the Option during the 2010-2011 winter season, providing a potential load reduction of approximately 11.0 MW. This load reduction is exercised to reduce demand to manage purchased power costs and minimize customer outages.

Detailed results for the 2010-2011 winter peak season were submitted to the Board in the *2011 Curtailable Service Option Report* dated April 29, 2011.

6.0 CDM Costs

Table 6 summarizes Newfoundland Power's costs associated with CDM activities from 2007 to 2011.

Table 6
Conservation and Demand Management Costs
($000s)

	2007	2008	2009	2010	2011
General Conservation Costs					
Education and Outreach	226	272	404	380	216[4]
Support	93	104	183	158	176
Planning	150	204	225	249	205
Total General Conservation Costs	469	580	812	787	597
Conservation Program Costs					
Residential					
Wrap up for Savings	155	126	12	0	0
Thermostat Rebates	20	44	8	0	0
Energy Savers Programs					
General[5]	-	-	750	1,398	861[6]
Insulation	-	-	157	241	1,548[7]
Thermostats	-	-	77	100	101
Windows			285	320	577[8]
Commercial					
Lighting	-	-	67	83	157
Total Conservation Program Costs	175	170	1,356	2,142	3,244
CDM Capital Expenditures[9]		50	156	53	42
Demand Management Program Costs					
Curtailable Service Option	254	277	225	278	326
Total	**898**	**1,077**	**2,549**	**3,260**	**4,209**

[4] The decrease in Education and Outreach costs in 2011 primarily reflects reallocation of staff from outreach activities to verification audits of program participants.

[5] General costs are those program related costs which cannot be assigned to a single program, such as advertising and retail point-of-purchase materials that include multiple programs.

[6] The decrease in General costs related to Energy Savers Programs in 2011 primarily reflects a reduction in mass media advertising activity.

[7] The increase in Insulation program costs in 2011 primarily reflects increased levels of customer participation.

[8] The increase in Windows program costs in 2011 primarily reflects increased levels of customer participation.

[9] Capital expenditures are associated with takeCHARGEnl.ca, the rebate processing and tracking system, and the employee toolkit.

7.0 Outlook

In 2012, Newfoundland Power will continue to promote and encourage customer participation in the existing *takeCHARGE* incentive programs. The Company will continue to offer conservation awareness initiatives jointly with Hydro to provide advice and information for customers on managing their energy usage. The takechargenl.ca website will be enhanced with additional interactive tools and information to help customers save energy and money.

Community outreach and industry partnerships will be key components of the Company's approach to customer education and achievement of energy savings. Newfoundland Power will also work with the Provincial Government to promote awareness of energy conservation and programs that benefit customers.

The Company will evaluate the results of existing customer energy conservation programs from a variety of perspectives. External factors which influence the conservation market will also be monitored. These influences include developments regarding building codes and other standards, such as the City of St. John's Energy Reduction Strategy implemented in September 2011, the revised National Building Code expected to be released in December 2012, and new lighting standards expected to be adopted in Canada by 2013. These influences also include developments regarding government programs, such as the Federal EcoEnergy home retrofit program which was closed to new participants in January 2012, and the Provincial EnerGuide for Homes program which may be extended through 2013.

Through the refresh of the *Five-Year Energy Conservation Plan*, Newfoundland Power and Hydro plan to expand and adapt the *takeCHARGE* program offerings for commercial and residential customers.

Appendix A

takeCHARGE Program Participation and Savings Results

takeCHARGE Program Participation and Savings Results

The following tables provide details of customer participation levels achieved and savings results from each of the existing programs since implementation.

The estimated annual energy and peak demand savings in each year represent the savings resulting from participants in that year. The estimated life to date energy and peak demand savings reflect the energy saving measures installed by all participants in the program. These savings will continue to occur each year for the life of the measures installed.

Table A-1
Insulation Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	Life to Date
Customer Participation	607	661	2,628	3,896
Estimated Annual Energy Savings (MWh)	1,588	2,177	7,525	11,290
Estimated Peak Demand Savings (kW)	488	674	2,322	3,484

Table A-2
Thermostat Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	Life to Date
Customer Participation	915	1,538	1,808	4,261
Estimated Annual Energy Savings (MWh)	470	1,186	1,350	3,006
Estimated Peak Demand Savings (kW)	145	366	416	927

Table A-3
ENERGY STAR Window Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	Life to Date
Customer Participation	478	899	1,867	3,244
Estimated Annual Energy Savings (MWh)	405	989	1,961	3,355
Estimated Peak Demand Savings (kW)	125	305	605	1,035

Table A-4
Commercial Lighting Incentive Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	Life to Date
Customer Participation	168	232	227	627
Estimated Annual Energy Savings (MWh)	170	707	1,292	2,169
Estimated Peak Demand Savings (kW)	69	296	464	829

Appendix B

takeCHARGE Program
Cost Effectiveness Results – 2011

takeCHARGE Program
Cost Effectiveness Results – 2011

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] For 2011, the program tests indicated benefit to cost ratios as follows:

Program	Participants Test [2]	Rate Impact Test [3]	Total Resource Cost Test [4]
Insulation Rebate Program	3.32	1.23	3.61
Thermostat Rebate Program	6.42	1.21	3.92
ENERGY STAR® Window Rebate Program	5.31	1.04	3.77
Total Residential Portfolio	3.75	1.19	3.67
Commercial Lighting Incentive Program	7.33	1.85	10.56
Total Program Portfolio	3.88	1.24	3.91
Provincial Residential Portfolio[5]	3.71	1.17	3.52
Provincial Commercial Portfolio[5]	7.51	1.83	9.94

The *takeCHARGE* program portfolio passes each of these economic cost effectiveness tests based on 2011 program results.

1 Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect. Analysis is based on the Company's 2007 marginal cost study updated with recent fuel cost forecasts.
2 A *Participants Test* is used to determine if a program minimizes the overall costs for participants.
3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.
4 A *Total Resource Cost Test* is used to determine if a program minimizes the overall cost of supplying energy.
5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. Details regarding costs and benefits of Hydro's 2011 programs were filed with the Board as part of Hydro's *2012 Conservation Cost Deferral and Program Expansion Report* in December 2011. The provincial residential portfolio tests do not include Hydro's pilot Coupon Program.

Appendix C

takeCHARGE Program
Cost Effectiveness Results - Life to Date

takeCHARGE Program
Cost Effectiveness Results – Life to Date

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] Based on costs and benefits since the programs were implemented in 2009, these tests indicated benefit to cost ratios as follows:

Program	Participants Test [2]	Rate Impact Test [3]	Total Resource Cost Test [4]
Insulation Rebate Program	3.11	1.20	3.10
Thermostat Rebate Program	5.66	1.08	2.70
ENERGY STAR	5.17	0.86	2.22
Total Residential Portfolio	3.61	1.11	2.85
Commercial Lighting Incentive Program	7.29	1.81	9.33
Total Program Portfolio	3.74	1.16	3.06
Provincial Residential Portfolio[5]	3.60	1.10	2.77
Provincial Commercial Portfolio[5]	7.50	1.76	8.53

The *takeCHARGE* program portfolio passes each of these economic cost effectiveness tests based on life to date program results.

1 Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect. Analysis is based on the Company's 2007 marginal cost study updated with recent fuel cost forecasts.
2 A *Participants Test* is used to determine if a program minimizes the overall costs for participants.
3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.
4 A *Total Resource Cost Test* is used to determine if a program minimizes the overall cost of supplying energy.
5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. Details regarding costs and benefits of Hydro's 2011 programs were filed with the Board as part of Hydro's *2012 Conservation Cost Deferral and Program Expansion Report* in December 2011. The provincial residential portfolio tests do not include Hydro's pilot Coupon Program.

Appendix D

takeCHARGE Program
Value of Savings Results – Life to Date

takeCHARGE Program
Value of Energy Savings – Life to Date

The value of energy and demand savings has been estimated from a utility perspective based on overall cost reductions on the Island Interconnected System.[1] Since their implementation in 2009, the value of savings resulting from Newfoundland Power customer participation in the *takeCHARGE* programs is as follows:

Life to Date Value of Energy Savings
($000s)

Program	**2009**	**2010**	**2011**	**Total**
Insulation Rebate Program	65	295	913	1,273
Thermostat Rebate Program	19	121	325	466
ENERGY STAR	10	70	257	337
Total Residential Portfolio	94	486	1,495	2,076
Commercial Lighting Incentive Program	9	74	267	350
Total Program Portfolio	103	560	1,762	2,426

[1] The value of savings includes Holyrood fuel savings and impacts on transmission and distribution costs including losses. Estimated energy and demand savings are based on when the customer completed installation of energy saving measures during the year, and allow for reductions due to free ridership. This estimate is less than that based on savings accrued to participants on an annual basis, as presented elsewhere in this report.

NEWFOUNDLAND POWER
A FORTIS COMPANY

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HAND DELIVERED

February 27, 2013

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies & Gentlemen:

In accordance with Order No. P.U. 7 (1996-97), enclosed are the original and 8 copies of the 2012 Conservation and Demand Management Report.

If you have any questions, please do not hesitate to call me at the number listed below.

Yours very truly,

Gerard M. Hayes
Senior Counsel

Enclosures

c. Geoffrey Young
Newfoundland and Labrador Hydro

2012 Conservation and Demand Management Report

February 27, 2013

(Filed in compliance with Order No. P.U. 7 (1996-97))

Table of Contents

Page

1.0 Introduction

In Order No. P.U. 7 (1996-97), the Board ordered, in effect, that Newfoundland Power (the "Company") file annual progress reports on its demand side management activities, including conservation.

This report is filed in compliance with Order No. P.U. 7 (1996-97) and outlines the Company's ongoing conservation and demand management ("CDM") activities.

Since 2009, the Company and Newfoundland and Labrador Hydro ("Hydro") have offered customer energy conservation programs on a joint and coordinated basis under the *takeCHARGE* brand. The Company and Hydro (the "Utilities") offer a variety of information and financial supports to their customers to help them manage their energy usage.

The Company and Hydro also work with the Provincial Government to coordinate energy conservation activities throughout the province. This coordination takes place primarily through the Province's Office of Climate Change, Energy Efficiency and Emission Trading ("CCEEET").

While joint utility conservation initiatives under *takeCHARGE* are available throughout the province, this report focuses on Newfoundland Power's initiatives.

2.0 Coordination and Planning

2.1 Provincial Coordination

CCEEET provides policy development and analysis on climate change, energy efficiency and emissions trading for the Province. In 2012, the Provincial Government through CCEEET launched, *Turn Back the Tide*, a public awareness campaign on the effects of climate change and energy efficiency. This campaign offers advice and information on ways to combat climate change, with a focus on energy efficiency. The Company has supported CCEEET in promotion of this website and information campaign. The *Turn Back the Tide* website provides links to *takechargenl.ca* for information on how to save energy and how to participate in the rebate programs.

In 2012, CCEEET partnered with the Utilities to research and develop educational information about the upcoming changes to the *National Building Code of Canada, Part 9*, and the *National Energy Code of Canada for Buildings*. The organizations are working together to develop technical and educational information for municipalities, consumers and builders to smooth the transition into the new building requirements.

The Company and Hydro continued to meet with the Province to exchange information and provide updates on the progress of their respective conservation programs in 2012 and pursue other partnership opportunities.

2.2 Five-Year Energy Conservation Plan

In 2008, Newfoundland Power and Hydro jointly developed the *Five-Year Energy Conservation Plan: 2008-2013* (the "2008 Plan"), which was filed with the Board in June 2008.

The 2008 Plan provided an overview of the conservation marketplace in the province of Newfoundland and Labrador and outlined a strategy to be implemented by the Utilities for joint conservation activities.

On September 14, 2012, the Company filed the *Five-Year Energy Conservation Plan: 2012-2016 (*the "2012 Plan").[1]

The 2012 Plan was also jointly developed by the Utilities. It builds on the outcomes of the 2008 Plan, and addresses customer education and incentive programs, planning and evaluation processes, and cost recovery and cost sharing arrangements.

Table 1 shows the forecast energy savings and costs for the 2012 Plan.

Table 1
Customer Energy Conservation
Five-Year Plan Forecast Results

	2012F	2013F	2014F	2015F	2016F	Total
Energy Savings (GWh)[2]	28.1	36.7	49.5	67.7	86.7	268.7
Total Costs ($ millions)	3.1	4.1	5.5	5.8	5.7	24.2

The primary changes contained in the 2012 Plan relate to: (i) discontinuation of certain residential incentives for new home construction; (ii) introduction of new residential customer programs; and, (iii) expansion of commercial customer programs.

In 2013, Newfoundland Power expects to modify its existing residential programs to reflect the changes to the *National Building Code of Canada, Part 9* that were announced December 21, 2012. These regulation changes mandate that all new homes install basement insulation and energy efficient windows.

As a result, the ENERGY STAR Windows and Insulation Programs will be modified in 2013 to exclude minimum code compliance for new homes. The National Building Code revisions do not impact thermostat requirements for new home construction.

In 2013, the Company plans to expand its residential program offerings to include promotion of high efficiency heat recovery ventilators ("HRVs"). In 2014, a coupon-based program will be

[1] The 2012 Plan was filed as *Volume 2, Exhibit & Supporting Materials, Reports, and Tab 1* in the *Newfoundland Power 2013/2014 General Rate Application.*

[2] These savings reflect the aggregate energy savings for all technologies installed by participating customers since program implementation.

developed to promote small energy efficient technologies such as specialty CFLs, LED lighting and ENERGY STAR televisions.

The Company plans to implement a Business Efficiency Program for commercial customers in 2013. This program will include financial incentives based on energy savings from customer energy efficiency project proposals, as well as rebates for specific measures on a per unit basis. The existing commercial lighting program will be expanded to include efficient lighting technologies for areas with high ceilings such as warehouses and arenas.

2.3 Program Evaluation

Ongoing evaluation of the customer energy conservation program portfolio is based on Canadian utility practice and the Company's experience with program delivery since the 1990s. Programs are evaluated throughout their lifecycle from the perspective of: (i) economic and energy savings impacts, (ii) market transformation impacts; and, (iii) delivery process effectiveness. The results of these evaluations support continuous improvement of the delivery and effectiveness of the customer energy conservation programs and identification of future opportunities.

Economic and energy savings evaluation of the customer energy conservation programs is performed annually.[3] Program participants are required to provide certain information on the program rebate applications. This information ranges from technical data, such as the model of thermostat, lighting product or size of window, to the type of heating in the home and its geographic location. Gathering this data allows the Company to accurately estimate the energy savings for each program and perform the industry standard economic tests.

Market transformation impacts of the customer energy conservation programs are evaluated through routine visits to retailers across the province, as well as relationships with other trade allies. This information enables the Company to gather market data and program delivery insights. Annual customer telephone surveys are also conducted regularly regarding customers' attitudes toward energy conservation, program awareness and their home energy use. The information from these various sources is a primary input to the planning process for program revisions or expansion.

To evaluate delivery process effectiveness, in-person verification audits are performed on a portion of program participants. These audits gather feedback regarding the effectiveness of the program from customers' perspectives and ensure compliance with program guidelines.

3.0 Energy Conservation Promotion and Education

During 2012, Newfoundland Power continued its customer education and conservation awareness activities primarily through promotion of its *takeCHARGE* Energy Saver$ rebate programs. These education and awareness activities involved mass media marketing, community outreach and trade ally development.

[3] The costs and benefits of the *takeCHARGE* programs are analyzed from the perspective of participants, non-participants and total resources. See Appendices B and C.

3.1 Mass Media Advertising and Customer Engagement

Throughout 2012, the Company used a range of advertising media, including television, newspaper, radio and online campaigns to increase awareness of the rebate programs and encourage program participation. Three "Get Behind the $avings" television advertisements continued to be aired province-wide on CBC and NTV, and were also featured in online websites.

Five *takeCHARGE* newsletters were distributed with customers' electricity bills during 2012. These newsletters offered energy efficiency information and encouraged participation in the Company's rebate programs.

The 4th annual *takeCHARGE* Energy Efficiency Week was held from September 29th to October 5th, 2012. *takeCHARGE* teams hosted events at building supply stores across the province providing energy efficiency advice to consumers and promoting the *takeCHARGE* Energy Savers rebate programs. A one-day only programmable thermostat double rebate was offered at select retail partners. A *takeCHARGE* energy efficiency education initiative for children was held, with 23 schools participating. Employee lunch 'n' learns were also held to raise awareness and educate employees on various *takeCHARGE* initiatives that are planned for 2013.

Customer engagement in energy efficiency education and awareness through the *takeCHARGE* Facebook page increased significantly to approximately 7,600 fans from about 6,000 at the end of 2011. The "Savings Game" interactive contest was a primary driver of the increased activity.

3.2 Community Outreach

During 2012, the Company participated in over 110 community outreach events across the island. Energy efficiency information was presented on over 25 occasions to diverse groups including retailers and suppliers, senior citizens and youth. Interactive *takeCHARGE* information booths were displayed at approximately 80 home shows, shopping malls, retail stores and trade fairs across the island. Through these outreach activities, members of the *takeCHARGE* team assisted customers with their energy questions, and raised awareness of energy conservation and the *takeCHARGE* rebate programs.

In 2012, the Company launched a competition to engage municipal governments to increase energy conservation and awareness among their residents. A *takeCHARGE* of Your Town Challenge was launched in October 2012 at the annual Municipalities Newfoundland and Labrador ("MNL") conference in Gander. Each municipality selected a "Town Champion" to engage other members of the community in energy efficient behavior. Participating towns will be awarded points for specific energy efficiency milestones and events. The winner will be announced at the Professional Municipal Administrators ("PMA") conference in May 2013.

3.3 Trade Allies

Trade allies play an integral role in assisting customers to make wise decisions regarding energy conservation and home improvements. Newfoundland Power continued to develop its partnerships with key retailers in the province, such as Kent, Hickeys, Costco, and other trade

allies. These partnerships created opportunities to have an in-store presence and be featured in retailer flyers promoting energy efficient products.

takeCHARGE team members made more than 160 visits to retailers in 2012. These visits included presentations and lunch 'n' learns aimed at educating retailer staff on the benefits of energy efficient products and increasing awareness of the *takeCHARGE* Energy Savers rebate programs and website.

4.0 Customer Interest and Awareness

Customers' interest in energy conservation programs and information remained strong during 2012 and awareness of the *takeCHARGE* brand and programs increased.

4.1 Customer Contacts

Table 2 shows the number of customer-initiated contacts with the Company for energy conservation information from 2007 through 2012.

Table 2
Customer Contacts for
Energy Conservation Information

	2007	2008	2009	2010	2011	2012
Contact Centre Inquiries	14,207	13,795	14,823	11,704	12,624	9,793
Website Visits	31,673	23,444	49,648	52,013	72,996	49,202
Total	**45,880**	**37,239**	**64,471**	**63,717**	**85,620**	**58,995**

In 2011, visits to the website were significantly higher than other years. This is mainly a result of the special insulation event that increased program participation in that year. In 2012, 83% of customers chose electronic means of communication with the Company to obtain energy conservation information and details on how to participate in rebate programs. This is consistent with the *takeCHARGE* strategy of promoting the website as the primary resource for customer inquiries and information. There was an overall decrease in customer contacts in 2012. To increase customer website visits in 2013, the Company plans to update energy efficiency information, expand the commercial portion of the website, and add new program information.

5.0 CDM Programs

Newfoundland Power's CDM program portfolio provides residential and commercial customers with conservation and demand management incentives that result in quantifiable energy and demand savings. The individual residential and commercial *takeCHARGE* rebate programs are described in Appendix A.

5.1 Residential Energy Conservation

The Company continued to offer three energy conservation programs for residential customers in 2012. The residential customer energy conservation programs for ENERGY STAR windows,

insulation and high performance thermostats are bundled for marketing as the *takeCHARGE* Energy Savers. The objectives for these programs are to reduce space heating energy consumption and provide reductions in peak demand.

Residential Program Results

Table 3 shows the customer participation levels achieved by the residential program portfolio annually since its implementation in 2009, as well as the estimated energy and peak demand savings resulting from new participants in each year. [4]

Table 3
Residential Portfolio Participation and Savings
2009 through 2012

	2009	**2010**	**2011**	**2012**
Customer Participation	2,000	3,098	6,303	4,851
Estimated Annual Energy Savings (MWh)	2,463	4,352	10,836	7,642
Estimated Peak Demand Savings (kW)	758	1,345	3,343	2,358

In 2011, the Company offered a special insulation event which significantly increased participation and energy savings in that year. Compared to 2010, participation in 2012 increased by 57% and energy savings increased by 76%.

Appendix B provides the details of customer participation, and energy and demand savings results for each of the *takeCHARGE* programs from 2009 through 2012.

Table 4 shows the customer participation levels achieved and the energy and peak demand savings results for each of the Company's residential programs in 2012.

Table 4
Residential Program Participation and Savings
2012

Program	**Customer Participation**	**Estimated Annual Energy Savings (MWh)**	**Estimated Peak Demand Savings (kW)**
Insulation Rebate Program	1,071	3,725	1,150
Thermostat Rebate Program	1,705	1,380	425
ENERGY STAR Window Rebate Program	2,075	2,537	783
Total	**4,851**	**7,642**	**2,358**

[4] Unless otherwise noted, estimated savings provided in this report are those that will accrue to participants on an annualized basis. Actual savings during the year of participation will be less, based on when customers complete installation of energy saving measures during the year.

Approximately 7,642 MWh of energy savings and 2,358 kW of demand savings resulted from the residential programs in 2012. The majority of these savings were related to the Insulation Rebate Program, which is consistent with previous years.

Energy savings related to the ENERGY STAR Window Rebate Program increased by approximately 23% in 2012, compared to 2011. This reflects a change in the market for windows in the province toward more energy efficient products, including an increase in their use by home construction contractors. This may also reflect the St. John's Energy Reduction Strategy, which requires all new homes in the city to install ENERGY STAR windows.

The results of cost effectiveness testing for 2012, and for the four years since current programs were implemented, are provided in Appendices C and D, respectively.

The estimated value of savings to the electrical system from the *takeCHARGE* residential programs to the end of 2012 is $5.8 million. The estimated value of savings related to each program annually since implementation is provided in Appendix E.

5.2 Commercial Energy Conservation

Newfoundland Power continued to offer a Commercial Lighting Incentive Program in 2012. This program focuses on reducing energy consumption, but also provides reductions in peak demand.

Commercial Program Results

Table 5 shows the annual customer participation levels for the Commercial Lighting Incentive Program annually since its implementation in 2009 and the estimated energy and demand savings resulting from new participants in each year.

Table 5
Commercial Program Participation and Savings
2009 through 2012

	2009	**2010**	**2011**	**2012**
Customer Participation	168	232	227	132
Estimated Annual Energy Savings (MWh)	170	707	1,292	778
Estimated Peak Demand Savings (kW)	69	296	464	262

Approximately 778 MWh of energy savings and 262 kW of demand savings resulted from the Commercial Lighting Incentive Program in 2012.

The number of customers participating in the Commercial Lighting Incentive Program has decreased in 2012. This reflects an increase in the incremental costs for high performance T8 lamps over the past 12-18 months due to international supply dynamics. As a result, the Company intends to evaluate the current incentive level offered for lamps to see if an increase is warranted.

Appendix B provides the details of customer participation and energy and demand savings results for each of the *takeCHARGE* programs from 2009 through 2012.

The results of cost effectiveness testing for 2012, and for the four years since the current program was implemented are provided in Appendices C and D, respectively.

The estimated value of savings to the electrical system from the *takeCHARGE* Commercial Lighting Incentive Program to the end of 2012 is $0.9 million. The estimated value of savings related to each *takeCHARGE* program annually since implementation is provided in Appendix E.

5.3 Demand Management

The Company has one customer program, the Curtailable Service Option (the "Option"), which is focused on Demand Management.

Curtailable Service Option
The Option provides an incentive to large customers to reduce electrical demand at the request of the Company during the winter peak season. The Option is available to general service customers billed on Rate 2.3 or 2.4 who can reduce their demand by at least 330 kVA. Participants who curtail their load at the request of the Company receive an annual credit on their electricity bills at the end of the winter season.

Twenty-one general service customers participated in the Option during the 2011-2012 winter season, providing a potential load reduction of approximately 10.0 MW. This load reduction is exercised to reduce demand to manage purchased power costs and minimize customer outages. Detailed results for the 2011-2012 winter peak season were submitted to the Board in the *2012 Curtailable Service Option Report* dated April 26, 2012.

6.0 CDM Costs

Table 6 summarizes Newfoundland Power's costs associated with CDM activities from 2008 to 2012.

Table 6
Conservation and Demand Management Costs
($000s)

	2008	2009	2010	2011	2012
General Conservation Costs					
Education and Outreach	272	404	380	216[5]	226
Support	104	183	158	176	169
Planning	204	225	249	205	277[6]
Total General Conservation Costs	580	812	787	597	672
Conservation Program Costs					
Residential					
Wrap up for Savings	126	12	0	0	0
Thermostat Rebates	44	8	0	0	0
Energy Savers Programs					
Insulation	-	382	758	2,151[7]	756
Thermostats	-	190	310	144	445[8]
Windows	-	697	991	792	1,056[9]
Commercial					
Lighting	-	67	83	157	101
Total Conservation Program Costs	170	1,356	2,142	3,244	2,358
CDM Capital Expenditures[10]	50	156	53	42	10
Demand Management Program Costs					
Curtailable Service Option	277	225	278	326	357
Total	**1,077**	**2,549**	**3,260**	**4,209**	**3,397**

[5] The decrease in Education and Outreach costs in 2011 primarily reflects reallocation of staff from outreach activities to verification audits of program participants.
[6] The increase in Planning costs in 2012 reflects the planning efforts to develop the 2012 Plan.
[7] The increase in Insulation Program costs in 2011 primarily reflects increased levels of customer participation.
[8] The increase in Thermostat Program costs in 2012 primarily reflects increased levels of customer participation.
[9] The increase in Windows Program costs in 2012 primarily reflects increased levels of customer participation.
[10] Capital expenditures are associated with improvements to the takechargenl.ca website and the Company's system for program tracking and evaluation.

7.0 Outlook

In 2013, Newfoundland Power plans to expand its customer energy conservation programs for residential and commercial customers, modifying its existing programs, and increasing customer education and support activities as a reflected in the 2012 Plan.

The existing *takeCHARGE* Insulation and ENERGY STAR Windows Programs will align with recent building code revisions resulting in the exclusion of new homes from program eligibility. However, the Company will focus its promotion of these programs to retrofitting existing homes.

The Utilities will continue to offer conservation awareness initiatives to provide advice and information for customers on managing their energy usage. The *takechargenl.ca* website will be enhanced with additional interactive tools and information to help customers save energy and money. The commercial portion of the website will be expanded to include new program information and energy efficiency information for the commercial sector.

The Utilities will begin a full assessment of conservation potential in the province in 2013. This assessment will include market research through customer surveys and audits to gather information regarding electricity end uses in the commercial and residential sectors. The information gathered will be used to identify new technologies and assess the potential of electricity savings opportunities.

The Company will evaluate the results of existing customer energy conservation programs from a variety of perspectives. This will include a residential program review by third party evaluators in 2013. Program evaluation findings will be used to enhance program design and delivery methods. This evaluation will also support further program planning and development.

As in the past, community outreach and industry trade ally partnerships will be key components of the Company's approach to customer education and achievement of energy savings. Newfoundland Power will also continue to work with the Provincial Government to promote awareness of energy conservation and programs that benefit customers.

Appendix A

takeCHARGE Program Descriptions

takeCHARGE Program Descriptions

Residential *takeCHARGE* Rebate Programs

Program applications are processed primarily through customer applications. Eligibility for the programs is limited to electrically heated homes, determined on the basis of annual energy usage. Home retrofit projects and new home developments are eligible. The programs are promoted in partnership with trade allies in the retail, home building and renovation industries.

Insulation Rebate Program

The objective of this program is to provide incentives to increase the insulation R-value in residential basements, crawl spaces and attics, thereby increasing the efficiency of the home's building envelope. Customers can receive an incentive of one cent per R-value per square foot of insulation added to their attics and two cents per R-value per square foot of insulation added to basement walls or ceilings.

Thermostat Rebate Program

This program encourages installation of programmable and electronic thermostats to allow customers better control of the temperature in their home and save energy. These high performance thermostats allow customers to set back the temperature during the night or when they are away. Incentives of $10 for each programmable thermostat and $5 for each electronic high performance thermostat are offered.

ENERGY STAR Window Rebate Program

This program encourages customers to purchase ENERGY STAR rated windows over standard windows to improve the efficiency of their home's building envelope and reduce space heating energy. Customers who purchase ENERGY STAR windows can receive a rebate of two dollars per square foot of window installed.

Commercial *takeCHARGE* Rebate Program

The program is primarily promoted through local lighting distributors. It is a requirement of the program that the lighting distributors provide the Company with sales and customer data.

Commercial Lighting Incentive Program

The Commercial Lighting Program targets energy reductions through more efficient lighting technologies in commercial buildings. The Commercial Lighting Program offers sales incentives to participating lighting distributors to sell high performance T8 lighting, ballasts and lamps to their customers, instead of selling standard T8 or T12 lighting systems. Incentives of $1.25 for lamps and $4.25 for ballasts are offered to commercial customers in effort to reduce the cost differential for upgrading to the higher efficiency lighting systems and provide a sales incentive for the lighting distributor. High performance T8 lighting systems use 25% to 40% less energy than standard T8 and T12 systems.

The commercial lighting program also includes a $21.00 per unit incentive for LED exit signs for retrofit applications. LED exit signs use 80-90% less energy than fixtures with incandescent lamps.

Appendix B

takeCHARGE Program Participation and Savings Results

takeCHARGE Program Participation and Savings Results

The following tables provide details of customer participation levels achieved and savings results from each of the existing programs since implementation.

The estimated annual energy and peak demand savings in each year represent the savings resulting from participants in that year. The estimated life to date energy and peak demand savings reflect the energy saving measures installed by all participants in the program. These savings will continue to occur each year for the life of the measures installed.

Table B-1
Insulation Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	2012	Life to Date
Customer Participation	607	661	2,628	1,071	4,967
Estimated Annual Energy Savings (MWh)	1,588	2,177	7,525	3,725	15,015
Estimated Peak Demand Savings (kW)	488	674	2,322	1,150	4,634

Table B-2
Thermostat Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	2012	Life to Date
Customer Participation	915	1,538	1,808	1,705	5,966
Estimated Annual Energy Savings (MWh)	470	1,186	1,350	1,380	4,386
Estimated Peak Demand Savings (kW)	145	366	416	425	1,352

Table B-3
ENERGY STAR Window Rebate Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	2012	Life to Date
Customer Participation	478	899	1,867	2,075	5,319
Estimated Annual Energy Savings (MWh)	405	989	1,961	2,537	5,892
Estimated Peak Demand Savings (kW)	125	305	605	783	1,818

Table B-4
Commercial Lighting Incentive Program
Life to Date Program Participation and Savings

Program	2009	2010	2011	2012	Life to Date
Customer Participation	168	232	227	132	759
Estimated Annual Energy Savings (MWh)	170	707	1,292	778	2,947
Estimated Peak Demand Savings (kW)	69	296	464	262	1,091

Table B-5
***takeCHARGE* Rebate Program**
Life to Date Program Participation and Savings

Program	2009	2010	2011	2012	Life to Date
Customer Participation	2,168	3,330	6,530	4,983	17,011
Estimated Annual Energy Savings (MWh)	2,633	5,059	12,128	8,420	28,240
Estimated Peak Demand Savings (kW)	827	1,641	3,807	2,620	8,895

Appendix C

takeCHARGE Program
Cost Effectiveness Results – 2012

takeCHARGE Program
Cost Effectiveness Results – 2012

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] For 2012, the program tests indicated benefit to cost ratios as follows:

Program	Participants Test[2]	Rate Impact Test[3]	Total Resource Cost Test[4]
Insulation Rebate Program	3.4	0.8	2.3
Thermostat Rebate Program	8.3	0.8	3.2
ENERGY STAR® Window Rebate Program	8.5	0.7	3.8
Total Residential Portfolio	**5.0**	**0.8**	**2.8**
Commercial Lighting Incentive Program	5.2	1.3	5.0
Total Program Portfolio	**5.0**	**0.8**	**2.9**
Provincial Residential Portfolio[5]	**5.0**	**0.8**	**2.7**
Provincial Commercial Portfolio[5]	**5.1**	**1.3**	**4.8**

The *takeCHARGE* program portfolio economic test results have positive economic effects and a slight impact on customer rates.

1 Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect. Analysis is based on the Hydro's 2007 marginal cost study updated with recent forecasts of fuel costs and customer rates. Higher forecast customer rates have caused test results to vary from 2011.

2 A *Participants Test* is used to determine if a program minimizes the overall costs for participants.

3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.

4 A *Total Resource Cost Test* is used to determine if a program minimizes the overall cost of supplying energy. The Company uses the Total Resource Cost Test as its primary measure of cost effectiveness.

5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. The provincial residential portfolio tests do not include Hydro's pilot Coupon Program and the Industrial Energy Efficiency Program.

Appendix D

takeCHARGE Program
Cost Effectiveness Results - Life to Date

takeCHARGE Program
Cost Effectiveness Results – Life to Date

The costs and benefits of the *takeCHARGE* programs were analyzed from the perspective of participants, non-participants and total resources.[1] Based on costs and benefits since the programs were implemented in 2009, these tests indicated benefit to cost ratios as follows:

Program	Participants Test[2]	Rate Impact Test[3]	Total Resource Cost Test[4]
Insulation Rebate Program	4.0	0.9	2.8
Thermostat Rebate Program	7.4	0.8	2.6
ENERGY STAR® Window Rebate Program	7.0	0.7	2.4
Total Residential Portfolio	**4.7**	**0.8**	**2.7**
Commercial Lighting Incentive Program	7.7	1.3	7.5
Total Program Portfolio	**4.9**	**0.9**	**2.8**
Provincial Residential Portfolio[5]	**4.7**	**0.8**	**2.7**
Provincial Commercial Portfolio[5]	**7.8**	**1.3**	**6.9**

The *takeCHARGE* program portfolio economic test results have positive economic effects and a slight impact on customer rates based on life to date program results.

1 Benefit to cost ratio results of greater than 1.0 indicate the program has positive economic effect. Analysis is based on the Hydro's 2007 marginal cost study updated with recent forecasts of fuel costs and customer rates. Higher forecast customer rates have caused test results to vary from 2011.

2 A *Participants Test* is used to determine if a program minimizes the overall costs for participants.

3 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.

4 A *Total Resource Cost Test* is used to determine if a program minimizes the overall cost of supplying energy. The Company uses the Total Resource Cost Test as its primary measure of cost effectiveness.

5 Provincial portfolio cost benefit tests include program results of both Newfoundland Power and Hydro. The provincial residential portfolio tests do not include Hydro's pilot Coupon Program.

Appendix E

takeCHARGE Program
Value of Savings Results – Life to Date

takeCHARGE Program
Value of Energy Savings – Life to Date

The value of energy and demand savings has been estimated from a utility perspective based on overall cost reductions on the Island Interconnected System.[1] Since their implementation in 2009, the value of savings resulting from Newfoundland Power customer participation in the *takeCHARGE* programs is as follows:

Life to Date Value of Energy Savings
($000s)

Program	**2009 - 2011**	**2012**	**Total**
Insulation Rebate Program	1,543	2,200	3,743
Thermostat Rebate Program	465	640	1,105
ENERGY STAR® Window Rebate Program	327	606	933
Total Residential Portfolio	**2,335**	**3,446**	**5,781**
Commercial Lighting Incentive Program	338	524	862
Total Program Portfolio	**2,673**	**3,970**	**6,643**

[1] The value of savings includes Holyrood fuel savings and impacts on transmission and distribution costs including losses on an inflation adjusted basis ($2012). Estimated energy and demand savings are based on when the customer completed installation of energy saving measures during the year, and allow for reductions due to free ridership. This estimate is less than that based on savings accrued to participants on an annual basis, as presented elsewhere in this report.