

1 Q. **Re: IN-NLH-010**

2 Please:

- 3 • Clarify if the data presented for 2009-2012 are for calendar years or fiscal
4 years and, if the latter, the closing date for the fiscal year; and
5 • Clarify if the last column ("2013 Forecast to March 31") represents a partial
6 year and, if so, please include a full-year forecast for 2013, comparable to
7 the data presented for 2009-2012.

8

9

10 A. The data presented in IN-NLH-010 is for calendar year which aligns with Hydro's
11 fiscal year end of December 31st.

12

13 The last column "2013 Forecast to March 31" did reflect a partial year. The full year
14 forecast of CDM costs by program can be found in Table 4: Program Costs from
15 Deferral Account Activity (\$000) on p.8 of the 2013 Conservation Cost Deferral and
16 Program Expansion Report, as filed with the Board in January 2013 and refiled in
17 November 2013. A copy of the January 2013 report (as refiled) is provided as IN-
18 NLH-164 Attachment 1. A copy of the 2014 Conservation Cost Deferral and
19 Program Expansion Report as filed with the Board in October 2014 is attached as IN-
20 NLH-164 Attachment 2.

A REPORT TO
THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

2013 CONSERVATION COST DEFERRAL AND PROGRAM EXPANSION REPORT

Newfoundland and Labrador

December 2012

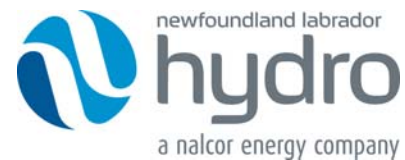


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1.0 Introduction

Newfoundland and Labrador Hydro (Hydro) has applied for approval from the Board of Commissioners of Public Utilities (the Board) for the deferral of the costs to be incurred by Hydro that are associated with the 2013 implementation of the Conservation and Demand Management (CDM) Programs and approach as outlined in the Five-Year Energy Conservation Plan: 2012-2016 (the Plan)¹. The purpose of this report is to provide the details of the 2013 CDM Program costs and an update of activities undertaken in 2012. The report also provides an overview of the new programs proposed to be launched in 2013.

The Plan outlines the joint utility approach undertaken in partnership with Newfoundland Power. This report describes the provincial approach but focuses on the costs and reach of initiatives for Hydro's portion of program implementation that are addressed by the deferral request.

Hydro is requesting a deferral of an estimated \$1,951,000 to be incurred in 2013, which was not included in Hydro's 2007 Test Year approved expenses for rates set by Board Order No. P.U. 8 (2007).

2.0 Background

Energy Conservation Initiatives were a topic of discussion during Hydro's 2006 General Rate Application (GRA). Since that time, Marbek Resource Consultants Limited (Marbek) was commissioned and completed a CDM Potential study in 2008 that provided information to assist in identifying cost-effective conservation programs and the potential contribution of specific technologies and measures in reducing forecast electricity consumption. From the potential study a five-year strategic plan was completed which outlined proposed energy conservation initiatives to be implemented jointly by Newfoundland Power and Hydro, including technologies, programs, support elements and cost estimates that promote a long-term goal of an established conservation culture with sustained reductions in electricity consumption. The potential study was filed with the Board on March 20, 2008 and the 2008-2012 Plan was filed with the Board on June 27, 2008.

In September 2012, the Five-Year Energy Conservation Plan: 2012-2016 was filed with the Board. This updated Plan outlined additional programs to be launched to complement the existing portfolio of programs. The focus for joint utility conservation continues to be energy savings through the development of a culture of conservation. The activities in the Plan include rebate programs for each sector (residential, commercial and industrial) and

¹ The Five-Year Energy Conservation Plan: 2012-2016 was filed with the Board on September 14, 2012 as part of Newfoundland Power's General Rate Application.

supporting activities for awareness, education and community engagement to stimulate attitude change.

An application to defer the recovery of actual 2009 costs to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on November 21, 2008. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2009. The Board approved the application in Order No. P.U. 14 (2009), and ordered Hydro to file a definition of a Conservation Deferral Account. A definition for this deferral account was submitted to the Board on April 22, 2009 and is attached as Appendix B to this report.

An application to defer the recovery of actual 2010 costs estimated at \$2.3 million to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on January 26, 2010. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2010. The Board approved the application in Order No. P.U. 13 (2010).

An application to defer the recovery of actuals 2011 costs estimated at \$840,000 to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on March 10, 2011. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2011. The Board approved the application in Order No. P.U. 4 (2011).

An application to defer the recovery of actuals 2012 costs estimated at \$1,673,000 to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on December 22, 2011. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2012. The Board approved the application in Order No. P.U. 3 (2012).

Hydro is forecasting a total of \$2,409,000 to be accumulated in the deferral account to the end of 2012.

3.0 Five-Year Plan Update

2012 has been a very active year with respect to Hydro's conservation efforts, with significant residential and commercial programming launched in Hydro's isolated communities. Program profiles for the Isolated Systems Community Program and Isolated Systems Business Efficiency Program are found in Appendix A. There has been more than 86% participation in the residential component and there are four commercial capital project agreements expected to be in place by the end of 2012.

The Five-Year Energy Conservation Plan 2012-2016 was completed in partnership with Newfoundland Power and filed with the Board in the third quarter. This plan outlines new programs to be offered provincially to address key areas of energy use for commercial and

residential customers as well as outlines new efforts for outreach and education to continue the move towards a culture of conservation. Hydro expanded its program reach and complexity in 2012 with significant new offerings for residential and commercial customers in isolated systems and in the Labrador Interconnected region. 2013 is expected to include an expansion for the provincial CDM portfolio with the implementation of a custom approach for commercial customers. Heat Recovery Ventilation System (HRV) efficiency is also addressed for the residential market.

4.0 Program Portfolio

The existing Energy Savers Rebate programs offered through the takeCHARGE program launched in June 2009 will continue to be offered in 2013. These programs have shown energy savings and continue to prompt consumers to consider energy efficiency in their purchases. These programs target the highest end uses for the residential and commercial markets of heating and lighting, respectively. These programs are:

- Residential Windows;
- Residential Thermostats;
- Residential Insulation; and
- Commercial Lighting.

The customized Industrial Energy Efficiency Program (IEEP) will also continue to be available to transmission level Industrial Customers.

The Energy Savers Rebate Programs are offered provincially, however the costs associated with delivery in the Labrador Interconnected System are recorded differently than those in other systems. Outside the Labrador Interconnected System, the dominant economic driver is the avoided fuel cost. In the Labrador Interconnected System the dominant economic driver is export market sales. To ensure the costs of conservation are associated with those who receive the primary benefits, the costs of conservation and efficiency on the Labrador Interconnected System are considered non-regulated.

In addition to the existing Energy Savers programs, there are three programs currently being delivered in Hydro's service area. The Isolated Systems Community Program and Isolated Systems Business Efficiency Program were launched in June 2012 and provide rebates, information and technical support to home and business owners in isolated communities. These costs are included in the current application. An additional program addressing Block Heater Timers, being offered only to customers on the Labrador Interconnected System, is launching in November 2012 and the associated program costs will not be included in the deferral request. The use of block heaters for vehicles is very common in the Labrador Interconnected System due to the climate. There is not a high usage of block heaters elsewhere so that program is targeting the highest users.

2013 Conservation Cost Deferral and Program Expansion Application

The following tables show Hydro's total CDM expenses and energy savings from 2009 to 2013 across all of Hydro's systems including the Labrador Interconnected System. This report will provide further detail and breakdown of those costs that will be recovered through the deferral account and the associated energy reductions.

The additional programs outlined in the Plan for launch in 2013 include residential and commercial incentives. These program concepts are outlined in the Appendix B and their costs are included in the tables below.

Table 1: Hydro CDM Portfolio Spending (\$'000's)					
	2009	2010	2011	2012	2013
Windows	44	48	140	101	103
Insulation	40	60	80	110	108
Thermostats	13	19	31	42	34
Coupon Program	-	140	135	-	-
Commercial Lighting	13	12	59	19	49
Industrial	57	221	103	180	402
Block Heater Timer				19	82
Isolated Systems Community				823	1,076
ISBEP				91	146
Heat Recovery Ventilator				-	30
Business Efficiency Program				-	88
Small Technologies				-	28
Total Portfolio	167	500	548	1,385	2,146

Table 2: Hydro's CDM New Annual Energy Savings 2009-2013 (MWh)					
	2009	2010	2011	2012	2013
Windows	12	27	61	70	84
Insulation	31	84	407	318	193
Thermostats	6	25	27	35	39
Coupon Program	-	64	256	-	-
Commercial Lighting	3	10	227	89	175
Industrial	0	0	165	3,500	1952
Block Heater Timer				144	648
Isolated Systems Community				2,170	1884
ISBEP				3	145
HE HRV					22
Business Efficiency Program					228
Small Technologies					-
Total	52	210	1,143	6,329	5,370

The expanded and existing programs have passed the standard utility economic screening tests². The descriptions of the program concepts for the new programs are found in Appendix A.

The concept descriptions include a feasibility level assessment of the program, estimated costs and savings, and the implementation strategies. Once the concepts have been approved, further detailed work is required to bring it to market.

4.1 takeCHARGE Approach

The takeCHARGE approach was described in detail in Hydro's 2010 Conservation Cost deferral report submitted in January 2011. The joint utility effort allows for economies of scale to be achieved where possible in areas such as marketing and outreach efforts. The technologies selected for rebate programs address large energy use opportunities and have been verified as cost effective through standard utility economic screening. In addition, a range of education efforts around general energy efficiency messaging have also been implemented to develop a culture of conservation.

The utilities continue to receive positive response to the existing programs that address a wide provincial customer base. However, there have been opportunities identified that address different needs within each utilities' customer base. For example, rural customers respond positively to community engagement efforts as demonstrated by the newly launched Isolated Systems Community Program which includes home visits, coupons and technology exchanges held by Hydro. The utilities will continue to work together to create additional provincial scope programs, but there are also projects and programs that would be of benefit if implemented in a system-targeted program.

Technology selection continues to follow the same process of focusing on the significant end uses and identifying niche opportunities where the market can be moved to a more efficient choice. For example, residential home heating is a large end use but the technology portfolio will also include a wider range of savings options for customers to reduce their electricity consumption across more end uses. This is reflected in the proposed expansion to include a small technology program that would provide incentives to homeowners for smaller technologies such as lighting options, timers and water conservation items opening new ways to save energy.

The utilities will continue to use traditional methods of advertising and promotion, participate in community events, work with community leaders and utilize social media opportunities. This holistic approach to addressing technology, the end user and their

² The primary test for economic viability is the Total Resource Cost (TRC) test which includes both the participants' and Utility's costs and benefits as factors in the net value of the program. As outlined in the Plan, each program has a positive TRC, which means the total program benefits exceed the total costs of the program.

community is the most effective option for fostering sustainable behaviour and attitude change.

4.2 Program Highlights and Next Steps

Participation continues to increase through Hydro's service area. Retailers continue to be key partners in reaching customers, and a pilot project undertaken in 2011-2012 with retailers to promote Energy Star Window purchases and rebate submission demonstrated this role. Retailers with strong numbers of applications to the takeCHARGE program signed up to complete applications on behalf of customers and receive a small financial incentive for every eligible rebate submitted. This effort was both to increase the sales for Energy Star Windows but also to reduce the barriers of the application process for the customer. Hydro rebate participation numbers are low enough that it is challenging to determine the exact impact of such an initiative, but it does seem to have had an impact. Building these relationships will continue to be a focus for Hydro in the coming year.

Outreach and non-traditional promotions and awareness building have also shown to have impact in reaching this diverse market. For example, the takeCHARGE program has been represented through community events, product exchanges and giveaways to reach customers in a variety of ways. The direct install approach in isolated communities provides technologies to homeowners and businesses as well as the free installation of the technologies. This program is nearing 90% penetration, and clearly shows the value of community engagement and creating an interest around the program at community launch events. Retailer events have been hosted in each of these communities.

Participation in the commercial lighting program has been challenged in 2012 due to an increase in the cost of the more efficient lighting that is eligible for incentive. This is expected to continue as one basic component of the manufacturing of the bulbs continues to rise in price. Hydro continues to work with the distributors to gain insight into the impacts this is having on the market. In the summer of 2011, the Isolated Systems Business Efficiency Program (ISBEP) was launched, providing rebates and technical assistance for commercial customers in the isolated diesel communities and L'Anse au Loup. This custom approach is similar to the Industrial Energy Efficiency Program (IEEP) and Hydro technical staff work with customers one on one to address their energy efficiency needs. This will continue in 2013.

Industrial Customer participation continues to be a challenge as customers focus on their own operation and processing, and energy efficiency does not appear to be a primary driver for resource allocation. Projects continue to be submitted for Corner Brook Pulp and Paper Limited and Teck Resources Limited submitted its first feasibility assessment in 2012. It has taken significant effort to provide support to the Industrial Customers to get them ready to participate in the program. There is still a great need for strong, hands-on support to enable customers to manage their daily operational priorities while examining energy efficiency and developing efficiency plans.

The updated Plan outlines additional program concepts that, once approved, will be launched in 2013 and 2014. The programs planned for launch in 2013 provide incentives for High Efficiency Heat Recovery Ventilation System (HRVs) to further address home heating energy, expansions into additional commercial lighting applications and a provincial custom incentive for commercial customers, similar to the program offered in Hydro's Isolated Systems Business Efficiency Program (ISBEP). These programs are a strong expansion to the growing CDM portfolio offered by the utilities.

Hydro will also continue to work with Newfoundland Power and other partners to determine emerging opportunities for CDM programming and develop appropriate strategies for developing a conservation culture in the province.

5.0 Program and Support Costs

The energy savings from Hydro customers in relation to programming associated with the annual CDM deferral requests to date and forecast in 2013 are shown in Table 3. It should be noted that while there are costs associated with the Small Technologies program in 2013 there are no associated savings. This is because the program will begin detailed design stage in 2013, but the program launch date is anticipated to be in 2014.

Table 3: Energy Savings from Deferral Account Activity (MWh)					
	2009	2010	2011	2012	2013
Windows	31	50	38	41	47
Insulation	12	16	229	116	111
Thermostats	6	15	16	22	26
Coupon Program	0	47	166	-	-
Commercial Lighting	3	0	92	20	41
Industrial	0	0	165	3,500	1952
Block Heater Timer				0	0
Isolated Systems Community				2,170	1884
ISBEP				3	145
Heat Recovery Ventilator				-	22
Business Efficiency Program				-	228
Small Technologies				-	0
Total	52	128	706	5,872	4,456

Forecast 2012 savings for insulation are higher than budgeted, likely due to the impact of continued awareness of the program after aggressive promotions and increased incentives offered in 2011. The savings for the commercial lighting program are higher than expected due to the unpredictable nature of the commercial lighting incentive and the wide range of rebates. Commercial lighting is currently offered solely through the distributors and as such there is little to no direct customer contact for promotions and information, so this program remains somewhat unpredictable for savings estimates.

The savings for IEEP continue to lag well behind forecast savings. There are continued efforts to support customers and although there has been a strong relationship built and there are additional projects in the system, the decrease to 3,400 MWh per year reflects the expectations of projects that will be installed and energy savings verified in 2012. Similarly, there are a number of additional projects forecast, but only three MWh per year are expected to be realized by the ISBEP by the end of the year.

Program costs associated with this deferral request for 2013³ are shown in Table 4. The table outlines the programs currently in the market as well as those with an anticipated 2013 launch date.

Table 4: Program Costs from Deferral Account Activity (\$000's)					
	2009	2010	2011	2012	2013
Windows	44	41	140	87	88
Insulation	40	53	80	92	90
Thermostats	13	18	31	38	32
Coupon Program	-	113	135	-	-
Commercial Lighting	13	-	59	10	33
Industrial	57	190	221	178	375
Block Heater Timer				-	-
Isolated Systems Community				823	1,076
ISBEP				91	146
Heat Recovery Ventilator				-	26
Business Efficiency Program					61
Small Technologies				-	24
Total Portfolio	167	415	666	1,319	1,951

The costs associated with the delivery of the CDM program portfolio include direct costs for advertising, salaries, rebates and other expenses directly associated with a specific rebate program. These costs vary depending on the uptake of the program and the number of programs offered.

There are two components of the costs associated with the conservation and efficiency function. In addition to direct program costs which are charged to the deferral account, there are costs associated with general energy efficiency awareness and education, strategic planning and program development. These costs remain relatively stable regardless of the number of rebate programs currently offered in the portfolio.

These support costs are outlined in Table 5 below. While these costs were in line with expectations for education and support, there was a decrease in planning costs as a result of reduced consultant support for new program development or Five-Year plan development. The focus was on the Five-Year Plan and implementing new programming, therefore no new

³ Proposed definition of the deferral account was submitted to the Board on April 22, 2009.

programs were in design stage. As well, the Five-Year Plan was driven by the utilities' internal efficiency teams rather than external consultants.

Table 5: Hydro's Support Costs 2009-2013 (\$000's)					
	2009	2010	2011	2012	2013
Education	262	106	212	204	241
Support	53	48	43	47	48
Planning	176	180	304	93	193
Total	491	334	559	344	482

6.0 Justification

Hydro is seeking approval to defer the CDM program costs it will incur in 2013 and for the recovery of these amounts in a manner to be determined by the Board at a later date. Hydro's total program costs to be deferred are forecast to be \$1,951,000. These costs were not forecast in Hydro's 2007 Test Year to be recovered in rates as set by Board Order No. P.U. 8 (2007). Hydro is not seeking approval to defer non-program costs for 2013, estimated to be \$344,000.

If the 2013 CDM program costs are not deferred they must be recognized as expenses incurred in 2013. This will have significant impact on Hydro's income in that year. The CDM costs incurred provide ongoing system benefits through energy reductions and associated fuel savings. The appropriate regulatory treatment of these costs will be the subject of further applications by Hydro.

7.0 Conclusion

Hydro has estimated that it will incur \$1,951,000 in CDM Program expenses in 2013 associated with the Deferral Account. These expenses are in excess of Hydro's forecast costs used to set rates by Board Order P.U. 8 (2007). Therefore, Hydro is requesting approval from the Board for the deferral of the costs to be incurred by Hydro that are associated with the implementation of the joint utility CDM approach as outlined in the Plan and further described in this report.

Appendix A: NLH Program Profiles

Insulation Program

Program Description

The objective of this program is to increase the insulation level in residential basements, crawl spaces and attics. Increasing the insulation R-value in a home will result in space heating energy savings. The program components include rebates and financing, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

This program targets residential customers. Changes to the National Building Code of Canada that are expected to be implemented in December 2012 will mandate that all new homes install basement insulation. As a result, this program will be offered to new and existing homes through 2012 but will be modified in 2013 to exclude minimum building code compliance in new homes. Eligibility will continue to be limited to electrically-heated homes.

Eligible Measures

Eligible measures in this program include insulation upgrades to basements, crawl spaces and attics. Rebates for new homes are limited to basement insulation beyond building code compliance. Technical requirements will be aligned with National Building Code of Canada.

Delivery Strategy

The delivery strategy for this program remains unchanged. Delivery of this program will continue to be bundled with the *ENERGY STAR* window, thermostat and HRV programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers and trade allies in the home building and renovation industry, and target both do-it-yourself and professional installers. Tools and tactics will include retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed through customer application.

Insulation Program

Market Considerations

Barriers to increased market penetration include initial cost, awareness of the impact on space heating energy, and the practical difficulties of renovating an existing living space. Experience with the existing program has shown participation to be responsive to awareness-building marketing activities. With the implementation of the new building standards, market penetration of basement insulation in new homes is expected to increase.

Incentive Strategy

Incentives for this program include rebates and financing. The rebate value is unchanged at two cents per R-value per square foot of insulation added to basement walls or ceilings, and one cent per square foot of insulation added to the attic. A time limit will be implemented for incentive redemption.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$90,000

Associated Savings – 111 MWh/yr

Thermostat Program

Program Description

The objective of this program is to encourage installation of programmable and high performance electronic thermostats in homes. Programmable and high performance electronic thermostats allow customers to better control the temperature of their homes and to set back the temperature during the night or while away. The program components consist of rebates, financing options, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

This program targets residential customers, including home retrofit and new home construction. Eligibility will continue to be limited to electrically-heated homes.

Eligible Measures

Eligible measures in this program include both programmable and high performance electronic thermostats (those which control within +/- 0.5°C.)

Delivery Strategy

The delivery strategy for this program remains unchanged. Delivery of this program will continue to be bundled with the insulation, windows and Heat Recovery Ventilation (HRV) programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers, electrical contractors, homebuilders and real estate professionals, to educate consumers regarding the energy savings and comfort benefits of programmable and high performance thermostats. Tools and tactics include retail and model home point-of-sale materials, website, tradeshow, community outreach and trade ally activities. Rebates will be processed through customer-submitted coupons.

Thermostat Program

Market Considerations

Market penetration of programmable and high performance electronic thermostats has increased in the past two years, but continues to represent a small portion of the overall sales volume. Minimum quality thermostats continue to be widely used in new home construction. The St. John's Energy Reduction Strategy that was implemented in September 2011 requires all new homes in the city to have electronic thermostats installed. This is expected to create increased participation in the program for customers residing in the city and may have some spillover effects. Thermostat requirements are not expected to be affected by National Building Code changes.

Incentive Strategy

Incentives for this program include rebates and financing. The rebate value is \$5 per electronic thermostat and \$10 per programmable thermostat. This continues to reflect incremental cost of the more efficient options. A time limit will be implemented for incentive redemption.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during program operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:
 Deferral Cost - \$32,000
 Associated Savings – 26 MWh/yr

ENERGY STAR Window Program**Program Description**

The objective of this program is to increase the installation of *ENERGY STAR* windows instead of standard windows. *ENERGY STAR* windows improve the efficiency of the home's building envelope and provide savings in space heating energy. The program components consist of rebates, financing options, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

This program targets residential customers. Changes to the National Building Code that are expected to be implemented in December 2012 will mandate that all new homes install more energy efficient windows. As a result, this program will be offered to new and existing homes through 2012 but will be modified in 2013 to exclude new homes. Eligibility will continue to be limited to electrically-heated homes.

Eligible Measures

Eligible measures in this program are *ENERGY STAR* qualified windows.

Delivery Strategy

The delivery strategy for this program remains unchanged. Delivery of this program will continue to be bundled with the insulation, thermostat and HRV programs part of the takeCHARGE residential portfolio.

Marketing initiatives will continue to include partnering with retailers and trade allies in the home building and renovation industry, and will target both do-it-yourself and professional installers. Communications will incorporate the *ENERGY STAR* brand and related marketing support. Tools and tactics will include retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed primarily through customer application.

ENERGY STAR Window Program**Market Considerations**

ENERGY STAR qualified windows currently comprise approximately 50% - 60% of window sales in the province, compared to 10% - 15% in 2008. With the implementation of National Building Code changes in 2013, market penetration is expected to increase in new homes. Understanding of the product is improving among customers and retailers. Eligible windows are widely available.

Incentive Strategy

Incentives for this program include rebates and financing. A rebate of \$2 per square foot of window installed will be offered. This rebate level will be assessed to ensure it continues to reflect incremental cost of the more efficient option. A time limit will be implemented for incentive redemption.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, market penetration and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during program operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$88,000

Associated Savings - 47 MWh/yr

Isolated Systems Community Program

Program Description

The objective of this program is to provide a portfolio of technologies and opportunities to save energy that will move the residential and commercial isolated system customers along an energy efficiency continuum during 2012-2014.

Target Market

This program targets both residential and commercial customers in Hydro's isolated systems. This includes Isolated Diesel systems on the Island and in Labrador and the L'Anse au Loup system. Eligibility for specific components of the program will be determined on a per customer basis and may be limited by primary heating source.

Eligible Measures

Measures will be wide ranging, from smaller items such as CFLs, showerheads and hot water pipe insulation, to high efficiency appliances, and cross promotions for the existing takeCHARGE Energy Savers Rebate programs.

Delivery Strategy

Hydro has engaged Summerhill Group to deliver this program, using a number of delivery strategies to engage residential and commercial customers. These include direct install efforts, whereby the customer receives the technology in their home or business at no cost. During the direct install visit, customers also receive information on energy usage and efficiency options. Mail-in rebates are provided for eligible purchases, such as appliances. Local retailers are engaged to provide additional coupons and price reductions on other products as well as exchange events for products such as LED holiday lighting. The existing takeCHARGE programs are being promoted to increase participation in those programs within the isolated systems.

A small group of residential customers will participate in a domestic drain water heat recovery system pilot, using this technology and providing data and feedback to Hydro. While a common and tested technology in other jurisdictions, their install rates remain very low in this jurisdiction.

Isolated Systems Community Program

Market Considerations

Availability and awareness of energy efficient technologies continues to be an issue in rural communities and often technologies available are at a higher price than in urban markets. This program will address the barriers of availability and as the avoided costs in isolated markets are higher than the Island Interconnected system, programming can be more aggressive. The customer base has been primarily non-electric heat, but electric heat load has been growing. There is a heavy electric hot water heating penetration and opportunities exist in plug load and behavior based areas.

Commercial customers tend to be smaller businesses and as such find it challenging to find the time and resources to address energy consumption issues and this program will provide the one on one interaction needed to assist these customers.

Incentive Strategy

The technologies used in the direct install component of the program will be installed at no cost to participating homes and businesses. Additional incentives will be dependent on the technology and the resulting savings.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and a representative sample of direct installs will be surveyed for confirmation of continued installation and use.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$1,076,000

Associated Savings -1,884 MWh/yr

Small Technologies Program

Program Description

The objective of this new program is to increase the efficiency levels in homes and increase energy efficiency awareness by offering instant rebate coupons on a list of energy efficient technologies. There will also be promotional events to raise awareness of the technologies and to engage the public.

Target Market: Residential

The small technology program will be marketed toward residential customers province wide. All customers will be eligible to participate regardless of age of home or heat source.

Eligible Measures

Eligible measures in this program will vary over time and will be selected based on cost effectiveness, energy saving potential and market conditions.

Delivery Strategy

Partnerships will be made with both chain and independent retailers to offer instant rebates to customers on a number of energy efficient products. The intent is to update the list each year, encouraging customers to purchase more products over time.

Coupon campaigns will be offered each year. These campaigns will include the delivery of public engagement events held at retailers. These events will consist of exchanges and giveaways that will promote the technologies offered through the coupons.

Small Technologies Program

Market Considerations

The technologies included in the program do not involve a major renovation. This program will allow the Utilities to reach customers that may not have been able to participate in the other incentive programs.

Incentive Strategy

Incentives for this program include instant rebates that will vary by year and campaign. The rebate value will be different for each technology offered, and will reflect incremental cost of the more efficient options.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness. Exit interviews will be conducted during selected retail events. Formal evaluations will be conducted after the first year of implementation, and biannually during operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$24,000

Associated Savings - 0 MWh/yr due to anticipated launch in 2014

HE HRV Program

Program Description

The objective of this new program is to increase the installation of higher efficiency HRVs (those with a sensible heat recovery efficiency, or SRE, level of 70% or more). In 2013, the National Building Code is expected to require all new home HRV installations to have an SRE level of at least 60%. The program components include rebates and financing, and a variety of education and marketing tools.

Target Market: Residential

This program targets all residential customers regardless of heat source or age of home. Eligibility is available to all homes that install or replace an HRV.

Eligible Measures

Eligible measures in this program include all HRV models that have an SRE of 70% or more.

Delivery Strategy

Delivery of this program will be bundled with the insulation, window and thermostat programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers and trade allies in the home building and renovation industry, particularly certified HRV installers. Tools and tactics will include retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed through customer application.

HE HRV Program

Market Considerations

The market includes new construction and existing HRV replacement. HRVs are widely used in new home construction in the province. Early HRV installations of the 1990s are at or near the end of their useful life, so many of these will require replacement in the planning period. Initial cost is a barrier to increased market penetration, as is awareness of the benefits of selecting more efficient HRVs.

Incentive Strategy

Incentives for this program include rebates and financing. The rebate value is estimated to be \$100 for qualifying HRV units. This will reflect incremental cost of the more efficient options.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted after the first year of implementation, and every two years during operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:
 Deferral Cost - \$26,000
 Associated Savings -22 MWh/yr

Block Heater Timers Program

Program Description

This program encourages the use of block heater timers by residential vehicle owners in the Labrador West and Central regions. Vehicle owners regularly plug in their block heaters overnight but three hours is enough for the safe operation of the vehicle to warm the coolant and the engine. The timers are available through giveaway and incented through at cash retail coupons.

Target Market: Residential

The program targets residential vehicle owners in the Labrador West and Central regions that do not currently use timers for their block heaters. It is estimated there is a potential market of nearly 10,000 residential vehicles in the region.

Eligible Measures

Eligible timers are 120 volt heavy duty outdoor timers with either manual or digital programming options. Timers provided through Hydro's giveaways are pre-programmed for a three hour operation whereas those available at retailers may be pre-programmed or require set up.

Delivery Strategy

The Block Heater Timer Program will run during the winter months with active promotions and giveaways to highlight the technology. The program will be launched with giveaway events happening at partner retailers in both Labrador West and Central and follow with the introduction of the \$10 at cash rebate on pre-approved models of timers. Marketing and promotions include print and radio and efforts are made to engage local employers and find champions to be advocates of the product.

The launch event giveaway provides a limited number of pre-programmed timers to customers. These customers are required to participate in survey research to determine their attitudes towards and use of the timers for future verification of savings and to adjust marketing and promotional efforts.

Hydro will also explore partnerships with other groups and businesses in the region regarding further promotions and awareness of the product.

Block Heater Timers Program

Market Considerations

Initial research indicates that while block heaters are used extensively, timers are rarely used. It is common perception that a block heaters need to be plugged in overnight, rather than for limited time before start up. As well, due to lack of demand, retailers do not regularly carry the product and efforts need to be made with partner retailers to ensure on-going access to the timers. The average retail price for an eligible timer is approximately \$23. Promotions and delivery strategies address both the customer perception and retail access components.

Incentive Strategy

The program provides giveaway of the technology initially to create awareness of the product and a \$10 at cash rebate is provided through partner retailers, covering more than 40% of the cost of the product.

Program Monitoring & Evaluation

Contact information is collected for those redeeming at cash rebates and participating in the giveaways. Phone surveys will be conducted to validate usage and attitudes towards the product. The program will also be monitored for participation level and cost effectiveness.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$0

Associated Savings -0

Lighting Program

Program Description

The objective of this program is to reduce energy use through more efficient lighting technologies in commercial buildings. The program components include rebates on a specific list of qualifying technologies, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Commercial

This program targets the owners of commercial buildings, encouraging these customers to install more efficient lighting equipment in new construction and retrofit of existing buildings.

Eligible Measures

The eligible measures for this program have included high performance T8 lamps and ballasts, and LED exit signs. Beginning in 2013, additional measures will be eligible, including T8 and T5 fluorescent fixtures used in areas with high ceilings, such as warehouses, gymnasiums, arenas and garages.

Delivery Strategy

Delivery will be integrated with other takeCHARGE commercial sector programming. Marketing for this program will include partnering with lighting manufacturers, distributors, electrical contractors and lighting service providers as key market influencers and allies. The program will create business opportunities for trade allies to sell more efficient lighting products.

The program will also target commercial property owners through direct marketing and through industry associations such as the Building Owners and Managers Association.

Tools and tactics will include trade ally and business association activities, such as workshops for distributors, contractors and building operators, retail point-of-sale materials, website and advertising in trade publications. Demonstration projects will be selected from program participants. Rebates will be processed both through distributor point-of-sale and through customer application, depending on the lighting measure.

Lighting Program

Market Considerations

Use of high performance T8 fluorescent lighting has increased since the program was introduced. Approximately 60% of fluorescent ballasts sold annually are now high performance T8, rather than less efficient T12 or standard T8. However, less than 25% of fluorescent lamps are a high performance type. Some high efficiency technologies, such as T5 fluorescent high bay lighting, are now widely used in new commercial construction, but are used less frequently in existing buildings.

High performance fluorescent lighting systems use 25% to 40% less energy than standard fluorescent systems. LED technologies, such as LED exit signs, use 80-90% less energy than fixtures with incandescent lamps. The eligible technologies are widely available through existing channels. The primary market barriers include higher initial cost and lack of understanding of appropriate lighting technologies and savings potential.

Incentive Strategy

Program incentives reduce the cost differential for higher efficiency products and also provide a sales incentive to participating lighting distributors to sell high performance T8 lighting, ballasts and lamps to their customers. The incentives offered are \$2.25 for lamps and \$4.25 for ballasts. The incentive for exit signs is \$21.00 per unit. The incentive for T8 and T5 fluorescent fixtures is estimated to be \$60 per unit for replacement of 400 watt and 250 watt metal halide fixtures in high bay (and medium bay) applications. Pricing of some eligible measures has increased materially in the past 12 to 18 months. This largely reflects international supply dynamics. As a result, incentive levels will be reviewed annually to ensure consistency with incremental costs.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$33,000

Associated Savings -41 MWh/yr

Isolated Systems Business Efficiency Program

Program Description

The objective of the program is to improve electrical energy efficiency across a variety of end uses. The program components include financial incentives based on energy savings, and other supports to assist in opportunity identification and evaluation. This program provides a custom approach that will allow larger commercial customers to explore a wide range of technologies suitable to their own operations, as well as an engineered track that allows for smaller customers to assess opportunities for common end uses.

Target Market

Non-residential customers in Hydro's isolated diesel and L'Anse au Loup systems are eligible.

Eligible Measures

Eligibility of the measure is based on engineering analysis of the savings. Technologies would include, but not be limited to, lighting, (heating ventilation air conditioning) HVAC, compressed air and others.

Delivery Strategy

For the engineered track, customers are able to utilize spreadsheets to assess their savings and potential rebates for common end uses, including:

- Commercial lighting – Interior, High bay or Directional
- Unitary A/C equipment (i.e. roof top units)
- Variable speed drives for fans or pumps
- Compressed air

The engineered track allows customers' progress to be incented based on their actual savings and baselines, unlike the traditional prescriptive incentive. Hydro staff will work with customers to determine baselines and estimates of savings based on the suggested retrofit. The custom track involves a walkthrough audit and feasibility analysis to determine savings and eligible incentive. This allows for a wide range of eligible technologies and projects.

The program is managed internally with some external engineering verification of projects. The Utility facilitates customers through the appropriate processes to evaluate and implement approved projects. This model has been used successfully in other jurisdictions.

Isolated Systems Business Efficiency Program

Market Considerations

Barriers to efficiency in the commercial market include financial and human resource concerns. Incentives will assist in making energy efficiency upgrades more accessible. Human resource concerns are around awareness and knowledge of the technology options as well as time to develop the business case for retrofit projects.

The isolated systems have additional challenges with access to product and access to specific technical skill sets in the evaluation of projects and technology. Hydro's program staff will assist in addressing those gaps.

Incentive Strategy

Incentives will include rebates based on energy savings, as well as funding assistance for feasibility and engineering analysis of opportunities. Rebate levels and available engineering assistance will vary based on forecasted savings and scale of the project.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and include site visits, engineering reviews and other methods of verifying savings.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$146,000

Associated Savings -145 MWh/yr

Business Efficiency Program

Program Description

The objective of this program is to improve electrical energy efficiency in a variety of commercial facilities and equipment types. The program components include financial incentives based on energy savings, and other financial and educational supports to enable commercial facility owners to identify and implement energy efficiency projects.

Target Market: Commercial

This program targets existing commercial facilities that can save energy by installing more efficient equipment and systems. The program will include a custom projects approach which will appeal primarily to large commercial customers with annual energy consumption of 1,000,000 kWhs or greater. The program will also include rebates for specific measures on a per unit basis, which will appeal to small to medium commercial customers as well.

Eligible Measures

Custom projects' eligibility will be based on engineering review and verification of estimated energy savings impacts. Specific measures eligible for per unit rebates will include HVAC equipment, refrigeration, motors and variable speed drives. It is expected that the initial list of eligible technologies will be expanded as the program matures based on program experience and market opportunities.

Delivery Strategy

For this program, the utility will manage the delivery and take the role of facilitator and consultant, supporting commercial customers to complete project proposals and implement approved projects. The program will utilize external engineering consultants for evaluation of larger project proposals and for monitoring and verification of energy savings.

The program will target equipment suppliers, service providers and consultants as key market influencers and allies in the promotion of energy efficient equipment. Rebates which reduce the cost of efficiency upgrade projects also provide a sales opportunity for these trade allies. Direct marketing to commercial facility owners and to industry associations will support the sales efforts of equipment and service providers.

Business Efficiency Program

Market Considerations

The custom project approach requires one-on-one support for project design and delivery at larger commercial facilities. The lifecycle for each custom project will be measured in months rather than weeks due to project planning and implementation timelines as well as post-installation verification and evaluation. This type of program requires that facilities have business and financial stability to continue operations for a time period appropriate to achieve cost effective savings.

Rebates for specific measures will appeal to a broad range of customers, providing a simpler approach for program participation.

Incentive Strategy

Incentives for this program include rebates based on \$0.10 per kWh of energy savings in the first year of implementation. Financial support will also be available for facility energy audits and feasibility studies, if required, based on 50% cost sharing. Guidelines for maximum incentive per project and for scheduling incentive payments for custom projects will be determined in the program detailed design phase. A list of rebates will be developed to reflect incremental cost for specific measures on a per unit basis or based on energy use and hours of operation (for example, lighting controls or thermostats).

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality and cost effectiveness, including engineering review and inspection of all custom projects and assessment of long-term impact on customer processes. Formal program evaluations will be conducted within the first year of implementation and every two years during operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:
 Deferral Cost - \$61,000
 Associated Savings -228 MWh/yr

Industrial Energy Efficiency Program

Program Description

The objective of this program is to improve electrical energy efficiency in a variety of industrial processes. The program components include financial incentives based on energy savings, and other supports to enable industrial facilities to identify and implement efficiency and conservation opportunities. This program is a custom program to respond to the unique needs of the industrial market, rather than a prescriptive technology approach.

Target Market: Industrial

This program targets new and existing industrial process equipment in the transmission level customers served by Newfoundland and Labrador Hydro.

Eligible Measures

Eligibility of projects is based on engineering review and confirmation of estimated energy savings impact. Technologies include, but are not limited to, compressed air, pump systems, process equipment and process controls.

Delivery Strategy

The program is managed internally with external engineering verification of projects and monitoring and evaluation of energy savings. The utility takes the role of facilitator and consultant in providing methods for industrial customers to complete project proposals and implement approved projects.

This program model has been used successfully in other jurisdictions. To ensure the cost effectiveness of this model with the unique nature and size of the industrial market in Newfoundland and Labrador, this program was launched as a three-year program in 2009. With the first project applications being submitted in 2011, the pilot has been revised to close to new applications in 2013.

Industrial Energy Efficiency Program

Market Considerations

This market requires a one-on-one approach to project design and delivery. The program builds on the work already completed by the industrial customers, and addresses their unique barriers to improved efficiency, which include, but are not limited to, access to capital and human resources.

The lifecycle for each program transaction will be measured in months rather than weeks because of the need for review, contract development, implementation timelines and post-installation monitoring and evaluation. This type of program requires that facilities have financial and business stability to continue operations for a time period appropriate to achieve cost effective savings.

Incentive Strategy

Incentives for this program include rebates based on energy savings, as well as funding assistance for additional enabling mechanisms.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, including engineering review and inspection of all projects and assessment of long-term impact on customer processes. Formal program evaluations will be conducted every two years during program operation.

Estimated Costs & Energy Savings

2013 Hydro Estimated:

Deferral Cost - \$375,000

Associated Savings -1,952 MWh/yr

Appendix B: Deferral Account Definition

Appendix B: Deferral Account Definition**Conservation and Demand Management (CDM) Cost Deferral Account
Proposed Definition**

The account shall be charged with the costs incurred in implementing the CDM Program Portfolio. The costs will include such items as detailed program development, promotional materials, advertising, pre and post customer installation checks, application and incentive processing, incentives, trade ally training, employee training, and program evaluation costs associated with programs in the CDM Program Portfolio.

The account will exclude any expenditure properly chargeable to plant accounts. The account shall also exclude conservation expenditures that are general in nature, such as costs associated with providing energy conservation awareness, responding to customer inquiries, planning, research and general supervision that are not associated with a specific program in the CDM Program Portfolio.

The account will exclude any expenditure related to programs or incentives that are fully recoverable from other parties, including government. Where a program or initiative is partially funded by other parties, the amount funded will be used to reduce the appropriate expenditures.

Costs associated with Labrador Interconnected customers will be tracked separately from costs associated with the other customers, as programs for the latter are based upon a cost structure which is significantly different from the Labrador Interconnected System and future disposition may be treated separately.

Transfers to, and from, the proposed account will be tax effected.

The disposition of any balance in this account will be subject to a future Order of the Board.

A REPORT TO
THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

2014 CONSERVATION COST DEFERRAL AND PROGRAM EXPANSION REPORT

Newfoundland and Labrador

October 2014



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1.0 Introduction

Newfoundland and Labrador Hydro (Hydro) has applied for approval from the Board of Commissioners of Public Utilities (the Board) for the deferral of the costs to be incurred by Hydro that are associated with the 2014 implementation of the Conservation and Demand Management (CDM) Programs and approach as outlined in the Five-Year Energy Conservation Plan: 2012-2016 (the Plan)¹. The purpose of this report is to provide the details of the 2014 CDM Program costs and an update of activities undertaken in 2014. The report also provides an overview of the new programs proposed to be launched in 2015.

The Plan outlines the joint utility approach undertaken in partnership with Newfoundland Power. This report describes the provincial approach but focuses on the costs and reach of initiatives for Hydro's portion of program implementation that are addressed by the deferral request.

Hydro is requesting a deferral of an estimated \$2,520,000 to be incurred in 2014, which was not included in Hydro's 2007 Test Year approved expenses for rates set by Board Order No. P.U. 8 (2007).

2.0 Background

Energy Conservation Initiatives were a topic of discussion during Hydro's 2006 General Rate Application (GRA). Since that time, Marbek Resource Consultants Limited (MARBek) was commissioned and completed a CDM Potential study in 2008 that provided information to assist in identifying cost-effective conservation programs and the potential contribution of specific technologies and measures in reducing forecast electricity consumption. From the potential study a five-year strategic plan was completed which outlined proposed energy conservation initiatives to be implemented jointly by Newfoundland Power and Hydro, including technologies, programs, support elements and cost estimates that promote a long-term goal of an established conservation culture with sustained reductions in electricity consumption. The potential study was filed with the Board on March 20, 2008 and the 2008-2012 Plan was filed with the Board on June 27, 2008.

In September 2012, the Five-Year Energy Conservation Plan: 2012-2016 was filed with the Board. This updated Plan outlined additional programs to be launched to complement the existing portfolio of programs. The focus for joint utility conservation continues to be energy savings through the development of a culture of conservation. The activities in the Plan include rebate programs for each sector (residential, commercial and industrial) and

¹ The Five-Year Energy Conservation Plan: 2012-2016 was filed with the Board on September 14, 2012 as part of Newfoundland Power's General Rate Application.

supporting activities for awareness, education and community engagement to stimulate attitude change.

An application to defer the recovery of 2009 costs to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on November 21, 2008. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2009. The Board approved the application in Order No. P.U. 14 (2009), and ordered Hydro to file a definition of a Conservation Deferral Account. A definition for this deferral account was submitted to the Board on April 22, 2009 and is attached as Appendix B to this report.

An application to defer the recovery of 2010 costs estimated at \$2.3 million to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on January 26, 2010. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2010. The Board approved the application in Order No. P.U. 13 (2010).

An application to defer the recovery of 2011 costs estimated at \$840,000 to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on March 10, 2011. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2011. The Board approved the application in Order No. P.U. 4 (2011).

An application to defer the recovery of 2012 costs estimated at \$1,673,000 to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on December 22, 2011. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2012. The Board approved the application in Order No. P.U. 3 (2012).

An application to defer the recovery of 2013 costs estimated at \$1,950,000 to be incurred by Hydro in association with the implementation of the Energy Conservation Program was filed on November 1, 2013. This filing addressed forecasted costs for delivering the programs to Hydro customers in 2013. The Board approved the application in Order No. P.U. 35 (2013).

Hydro is forecasting a total of \$2,520,000 to be accumulated in the deferral account to the end of 2014.

3.0 Five-Year Plan Update

2014 was another active year with respect to Hydro's conservation efforts, with significant residential and commercial energy efficiency activity occurring in Hydro's isolated communities. Program profiles for the Isolated Systems Community Program and Isolated Systems Business Efficiency Program are found in Appendix A. This year also included an expansion to the provincial CDM portfolio with the implementation of an Instant Rebates (small technologies) program for customers.

Of particular note, significant energy savings were achieved in the industrial customer class as result of three projects undertaken and completed in 2014. Hydro will continue to work with the industrial customers in 2015 on energy efficiency improvements.

4.0 Program Portfolio

The existing Energy Savers Rebate programs offered through the takeCHARGE program launched in June 2009 continued to be offered in 2014. These programs have shown energy savings and continue to prompt consumers to consider energy efficiency in their purchases. These programs target the highest end uses for the residential and commercial markets of heating and lighting, respectively. These programs are:

- Residential Windows;
- Residential Thermostats;
- Residential Insulation;
- Commercial Lighting;
- Heat Recovery Ventilator;
- Business Efficiency; and
- Small Technologies.

The customized Industrial Energy Efficiency Program (IEEP) was also available to transmission level Industrial Customers.

The Energy Savers Rebate Programs are offered provincially, however the costs associated with delivery in the Labrador Interconnected System are recorded separately than those for the Island Interconnected and the Isolated Diesel systems. Outside the Labrador Interconnected System, the dominant economic driver is the avoided fuel cost. In the Labrador Interconnected System the dominant economic driver is export market sales. To ensure the costs of conservation are associated with those who receive the primary benefits, the costs of conservation and efficiency on the Labrador Interconnected System are considered non-regulated.

In addition to the existing Energy Savers programs, there are three programs currently being delivered in Hydro's service area. The Isolated Systems Community Program and Isolated Systems Business Efficiency Program were launched in June 2012 and provide rebates, information and technical support to home and business owners in isolated communities. These costs are included in the current application. An additional program addressing Block Heater Timers, being offered only to customers on the Labrador Interconnected System, was launched in November 2012 and the associated program costs will not be included in the deferral request. The use of block heaters for vehicles is very common in the Labrador Interconnected System due to the cold climate. There is not a high usage of block heaters elsewhere so this program is targeting the highest users.

2014 Conservation Cost Deferral and Program Expansion Report

The following tables show Hydro's total CDM expenses and energy savings from 2009 to 2014 across all of Hydro's systems including the Labrador Interconnected System. This report will provide further detail and breakdown of those costs that will be recovered through the deferral account and the associated energy reductions.

The additional program outlined in the Plan for launch in 2014 includes residential and commercial incentives. These program concepts are outlined in the Appendix B and their costs are included in the tables below.

Table 1: Hydro CDM Portfolio Spending (\$000s)						
	2009	2010	2011	2012	2013	2014(F)
Windows	44	48	140	101	169	89
Insulation	40	60	80	110	157	92
Thermostats	13	19	31	42	51	32
Coupon Program	-	140	135	-	-	-
Commercial Lighting	13	12	59	19	29	43
Industrial	57	221	103	180	89	1,288
Block Heater Timer				19	8	19
Isolated Systems						
Community				823	871	620
ISBEP				91	115	120
Heat Recovery Ventilator				-	11	30
Business Efficiency Program				-	45	103
Small Technologies				-	1	280
Total Portfolio	167	500	548	1,385	1,546	2,716

Table 2: Hydro's CDM New Annual Energy Savings (MWh)						
	2009	2010	2011	2012	2013	2014(F)
Windows	13	37	61	136	99	75
Insulation	35	126	404	382	794	114
Thermostats	9	35	30	53	24	13
Coupon Program	-	64	256	-	-	-
Commercial Lighting	3	10	227	95	99	73
Industrial	-	-	165	3,172	-	15,000
Block Heater Timer				-	288	-
Isolated Systems						
Community				1,676	1,096	600
ISBEP				3	27	50
HE HRV					1	6
Business Efficiency Program					-	64
Small Technologies					-	65
Total	60	272	1,143	5,517	2,428	16,060

The expanded and existing programs have passed the standard utility economic screening tests². The descriptions of the program concepts for the new programs are found in Appendix A. The concept descriptions include a feasibility level assessment of the program, estimated costs and savings, and the implementation strategies. Once the concepts have been approved, further detailed work is required to bring it to market.

4.1 takeCHARGE Approach

The takeCHARGE approach was described in detail in Hydro's 2010 Conservation Cost deferral report submitted in January 2011. The joint utility effort allows for economies of scale to be achieved where possible in areas such as marketing and outreach efforts. The technologies selected for rebate programs address large energy use opportunities and have been verified as cost effective through standard utility economic screening. In addition, a range of education efforts around general energy efficiency messaging have also been implemented to develop a culture of conservation.

The utilities continue to receive positive response to the existing programs that address a wide provincial customer base. However, there have been opportunities identified that address different needs within each utilities' customer base. For example, rural customers respond positively to community engagement efforts as demonstrated by the newly launched Isolated Systems Community Program which includes home visits, coupons and technology exchanges held by Hydro. The utilities will continue to work together to create additional provincial scope programs, but there are also projects and programs that would be of benefit if implemented in a system-targeted program.

Technology selection continues to follow the same process of focusing on the significant end uses and identifying niche opportunities where the market can be moved to a more efficient choice. For example, residential home heating is a large end use but the technology portfolio will also include a wider range of savings options for customers to reduce their electricity consumption across more end uses. This is reflected in the portfolio expansion to include a small technology program that provides incentives to homeowners for smaller technologies such as lighting options, timers and water conservation items opening new ways to save energy.

The utilities will continue to use traditional methods of advertising and promotion, participate in community events, work with community leaders and utilize social media opportunities. This holistic approach to addressing technology, the end user and their

² The primary test for economic viability is the Total Resource Cost (TRC) test which includes both the participants' and Utility's costs and benefits as factors in the net value of the program. As outlined in the Plan, each program has a positive TRC, which means the total program benefits exceed the total costs of the program.

community is the most effective option for fostering sustainable behaviour and attitude change.

4.2 Program Highlights and Next Steps

Participation continues to increase through Hydro's service area. Retailers continue to be key partners in reaching customers, and a pilot project undertaken in 2011-2012 with retailers to promote Energy Star Window purchases and rebate submission demonstrated this role. Hydro continued to partner with retailers in 2014 for the Small Technologies program that enables customers to receive cash rebates on a number of energy efficient products. Also under this program Hydro implemented an appliance and electronics mail-in rebate program that is available on select ENERGY STAR products. Building relationships with retailers will continue to be a focus as part of the energy efficiency promotion.

Outreach and non-traditional promotions and awareness building have also shown to have impact in reaching Hydro's diverse market. For example, the takeCHARGE program has been represented through community events, product exchanges and giveaways to reach customers in a variety of ways. The direct install approach involves training and using local representatives in isolated communities to provide technologies to homeowners and businesses as well as the free installation of the technologies. This program clearly shows the value of community engagement and creating an interest around the program at community launch events.

Much of Hydro's customer base for high performance commercial lighting consists of government facilities and we continue to work with government to identify lighting improvement opportunities when facility renovations and construction are planned. Hydro also continues to work with lighting distributors to promote sale and installation of high performance lighting products.

In the summer of 2011, the Isolated Systems Business Efficiency Program (ISBEP) was launched, providing rebates and technical assistance for commercial customers in the isolated diesel communities and L'Anse au Loup. This custom approach is similar to the Industrial Energy Efficiency Program (IEEP) and Hydro technical staff work with customers one on one to address their energy efficiency needs. The Business Efficiency Program has seen steady activity and commercial customers have been engaged in the Central, Northern, and Labrador Regions that resulted in several projects to be completed in 2014. Three significant projects were completed at Corner Brook Pulp and Paper under the Industrial Energy Efficiency program in 2014. These projects are expected to result in a combined annual savings of 15 GWh. Hydro continues to encourage its commercial and industrial customers to identify opportunities to produce energy savings and will increase the effort in 2015 by more direct engagement with these customers.

The utilities will initiate a new CDM Potential Study in late 2014 with a final report expected to be completed in twelve months. Hydro will continue to work with Newfoundland Power

and other partners to determine emerging opportunities for CDM programming and develop appropriate strategies for developing a conservation culture in the province.

5.0 Program and Support Costs

The energy savings from Hydro customers in relation to programming associated with the annual CDM deferral requests to date and forecast in 2014 are shown in Table 3. It should be noted that while there are costs associated with the Small Technologies program in 2013 there are no associated savings. This is because the program detailed design stage began in 2013, and the program was launched 2014.

Table 3: Energy Savings from Deferral Account Activity (MWh)						
	2009	2010	2011	2012	2013	2014(F)
Windows	8	14	38	50	43	27
Insulation	29	63	229	126	123	39
Thermostats	2	16	16	28	14	7
Coupon Program	-	47	166	-	-	-
Commercial Lighting	3	-	92	25	19	25
Industrial	-	-	165	3,172	-	15,000
Block Heater Timer				-	-	-
Isolated Systems						
Community				1,676	1,096	600
ISBEP				3	27	50
Heat Recovery Ventilator				-	-	3
Business Efficiency Program				-	-	24
Small Technologies				-	-	39
Total	42	140	706	5,080	1,322	15,814

Commercial lighting continues to be offered solely through the distributors and as such there is little to no direct customer contact for promotions and information, so this program remains somewhat unpredictable for savings estimates. The Block Heater Timer program is offered only in the Labrador Interconnected area therefore no savings are associated with the deferral account. The savings for IEEP were significant in 2014 as mentioned previously.

Program costs associated with this deferral request for 2014³ are shown in Table 4.

³ Proposed definition of the deferral account was submitted to the Board on April 22, 2009.

Table 4: Program Costs from Deferral Account Activity (\$000s)						
	2009	2010	2011	2012	2013	2014(F)
Windows	44	41	140	87	88	74
Insulation	40	53	80	92	90	74
Thermostats	13	18	31	38	32	29
Coupon Program	-	113	135	-	-	-
Commercial Lighting	13	-	59	10	33	30
Industrial	57	190	221	178	375	1,230
Block Heater Timer				-	-	-
Isolated Systems						
Community				823	1,076	620
ISBEP				91	146	120
Heat Recovery Ventilator				-	26	23
Business Efficiency Program				-	61	81
Small Technologies				-	24	239
Total Portfolio	167	415	666	1,319	1,951	2,520

The costs associated with the delivery of the CDM program portfolio include direct costs for advertising, salaries, rebates and other expenses directly associated with a specific rebate program. These costs vary depending on the uptake of the program and the number of programs offered.

There are two components of the costs associated with the conservation and efficiency function. In addition to direct program costs which are charged to the deferral account, there are costs associated with general energy efficiency awareness and education, strategic planning and program development. These costs remain relatively stable regardless of the number of rebate programs currently offered in the portfolio.

These support costs are outlined in Table 5 below. While these costs were in line with expectations for education and support, there was a decrease in planning costs as a result of reduced consultant support for new program development or Five-Year plan development. The focus was on the Five-Year Plan and implementing new programming, therefore no new programs were in design stage. As well, the Five-Year Plan was driven by the utilities' internal efficiency teams rather than external consultants.

Table 5: Hydro's Support Costs (\$000s)						
	2009	2010	2011	2012	2013	2014(F)
Education	262	106	212	204	157	241
Support	53	48	43	47	31	48
Planning	176	180	304	93	126	193
Total	491	334	559	344	314	482

6.0 Justification

Hydro is seeking approval to defer the CDM program costs it will incur in 2014 and for the recovery of these amounts in a manner to be determined by the Board at a later date. Hydro's total program costs to be deferred are forecast to be \$2,520,000. These costs were not forecast in Hydro's 2007 Test Year to be recovered in rates as set by Board Order No. P.U. 8 (2007). Hydro is not seeking approval to defer non-program costs for 2014, estimated to be \$482,000.

If the 2014 CDM program costs are not deferred they must be recognized as expenses incurred in 2014. This will have significant impact on Hydro's income in that year. The CDM costs incurred provide ongoing system benefits through energy reductions and associated fuel savings. The appropriate regulatory treatment of these costs will be the subject of further applications by Hydro.

7.0 Conclusion

Hydro has estimated that it will incur \$2,520,000 in CDM Program expenses in 2014 associated with the Deferral Account. These expenses are in excess of Hydro's forecast costs used to set rates by Board Order P.U. 8 (2007). Therefore, Hydro is requesting approval from the Board for the deferral of the costs to be incurred by Hydro that are associated with the implementation of the joint utility CDM approach as outlined in the Plan and further described in this report.

Appendix A: NLH Program Profiles

Insulation Program

Program Description

The objective of this program is to increase the insulation level in residential basements, crawl spaces and attics. Increasing the insulation R-value in a home will result in space heating energy savings. The program components include rebates and financing, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

This program targets residential customers. Changes to the National Building Code of Canada mandates that all new homes install basement insulation. As a result, this program was modified in 2013 to exclude minimum building code compliance in new homes. Eligibility will continue to be limited to electrically-heated homes.

Eligible Measures

Eligible measures in this program include insulation upgrades to basements, crawl spaces and attics. Technical requirements will be aligned with National Building Code of Canada.

Delivery Strategy

The delivery strategy for this program remains unchanged. Delivery of this program will continue to be bundled with the *ENERGY STAR* window, thermostat and HRV programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers and trade allies in the home building and renovation industry, and target both do-it-yourself and professional installers. Tools and tactics will include retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed through customer application.

Insulation Program

Market Considerations

Barriers to increased market penetration include initial cost, awareness of the impact on space heating energy, and the practical difficulties of renovating an existing living space. Experience with the existing program has shown participation to be responsive to awareness-building marketing activities. With the implementation of the new building standards, market penetration of basement insulation in new homes is expected to increase.

Incentive Strategy

Incentives for this program include rebates. The rebate amount changed in 2014 to 75% of the cost for basement insulation and 50% of the cost for attic insulation up to \$1,000.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$74,000

Associated Savings – 39 MWh/yr

Thermostat Program

Program Description

The objective of this program is to encourage installation of programmable and high performance electronic thermostats in homes. Programmable and high performance electronic thermostats allow customers to better control the temperature of their homes and to set back the temperature during the night or while away. The program components consist of rebates, financing options, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

This program targets residential customers, including home retrofit and new home construction. Eligibility will continue to be limited to electrically-heated homes.

Eligible Measures

Eligible measures in this program include both programmable and high performance electronic thermostats (those which control within +/- 0.5°C.)

Delivery Strategy

The delivery strategy for this program remains unchanged. Delivery of this program will continue to be bundled with the insulation, windows and Heat Recovery Ventilation (HRV) programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers, electrical contractors, homebuilders and real estate professionals, to educate consumers regarding the energy savings and comfort benefits of programmable and high performance thermostats. Tools and tactics include retail and model home point-of-sale materials, website, tradeshow, community outreach and trade ally activities. Rebates will be processed through customer-submitted coupons.

Thermostat Program

Market Considerations

Market penetration of programmable and high performance electronic thermostats has increased in the past two years, but continues to represent a small portion of the overall sales volume. Minimum quality thermostats continue to be widely used in new home construction. The St. John's Energy Reduction Strategy that was implemented in September 2011 requires all new homes in the city to have electronic thermostats installed. This is expected to create increased participation in the program for customers residing in the city and may have some spillover effects. Thermostat requirements are not expected to be affected by National Building Code changes.

Incentive Strategy

Incentives for this program include rebates and financing. The rebate value is \$5 per electronic thermostat and \$10 per programmable thermostat. This continues to reflect incremental cost of the more efficient options. A time limit will be implemented for incentive redemption.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during program operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:
 Deferral Cost - \$29,000
 Associated Savings – 7 MWh/yr

ENERGY STAR Window Program

Program Description

The objective of this program is to increase the installation of *ENERGY STAR* windows instead of standard windows. *ENERGY STAR* windows improve the efficiency of the home's building envelope and provide savings in space heating energy. The program components consist of rebates, financing options, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Residential

In 2014 this program continued to target new and existing residential home owners to install more energy efficient windows. Eligibility was limited to electrically-heated homes. This program will be closing at the end of 2014.

Eligible Measures

Eligible measures in this program are *ENERGY STAR* qualified windows.

Delivery Strategy

The delivery strategy for this program remained unchanged in 2014. Delivery of the program continued to be bundled with the insulation, thermostat and HRV programs as part of the takeCHARGE residential portfolio.

Marketing initiatives included partnering with retailers and trade allies in the home building and renovation industry, and targeted both do-it-yourself and professional installers. Communications incorporated the *ENERGY STAR* brand and related marketing support. Tools and tactics included retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed primarily through customer application.

ENERGY STAR Window Program**Market Considerations**

ENERGY STAR qualified windows currently comprise approximately 50% - 60% of window sales in the province, compared to 10% - 15% in 2008. With the implementation of National Building Code changes in 2013, market penetration is expected to increase in new homes. Understanding of the product is improving among customers and retailers. Eligible windows are widely available.

Incentive Strategy

Incentives for this program include rebates and financing. A rebate of \$2 per square foot of window installed will be offered. This rebate level will be assessed to ensure it continues to reflect incremental cost of the more efficient option. A time limit will be implemented for incentive redemption.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, market penetration and a representative sample of installations will be inspected.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$74,000

Associated Savings - 27 MWh/yr

Isolated Systems Community Program

Program Description

The objective of this program is to provide a portfolio of technologies and opportunities to save energy that will move the residential and commercial isolated system customers along an energy efficiency continuum during 2012-2014.

Target Market

This program targets both residential and commercial customers in Hydro's isolated systems. This includes Isolated Diesel systems on the Island and in Labrador and the L'Anse au Loup system. Eligibility for specific components of the program will be determined on a per customer basis and may be limited by primary heating source.

Eligible Measures

Measures will be wide ranging, from smaller items such as CFLs, showerheads and hot water pipe insulation, to high efficiency appliances, and cross promotions for the existing takeCHARGE Energy Savers Rebate programs.

Delivery Strategy

Hydro has engaged Summerhill Group to deliver this program, using a number of delivery strategies to engage residential and commercial customers. These include direct install efforts, whereby the customer receives the technology in their home or business at no cost. During the direct install visit, customers also receive information on energy usage and efficiency options. Mail-in rebates are provided for eligible purchases, such as appliances. Local retailers are engaged to provide additional coupons and price reductions on other products as well as exchange events for products such as LED holiday lighting. The existing takeCHARGE programs are being promoted to increase participation in those programs within the isolated systems.

A small group of residential customers will participate in a domestic drain water heat recovery system pilot, using this technology and providing data and feedback to Hydro. While a common and tested technology in other jurisdictions, their install rates remain very low in this jurisdiction.

Isolated Systems Community Program

Market Considerations

Availability and awareness of energy efficient technologies continues to be an issue in rural communities and often technologies available are at a higher price than in urban markets. This program will address the barriers of availability and as the avoided costs in isolated markets are higher than the Island Interconnected system, programming can be more aggressive. The customer base has been primarily non-electric heat, but electric heat load has been growing. There is a heavy electric hot water heating penetration and opportunities exist in plug load and behavior based areas.

Commercial customers tend to be smaller businesses and as such find it challenging to find the time and resources to address energy consumption issues and this program will provide the one on one interaction needed to assist these customers.

Incentive Strategy

The technologies used in the direct install component of the program will be installed at no cost to participating homes and businesses. Additional incentives will be dependent on the technology and the resulting savings.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and a representative sample of direct installs will be surveyed for confirmation of continued installation and use.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$620,000

Associated Savings -600 MWh/yr

Small Technologies Program

Program Description

The objective of this program is to increase the efficiency levels in homes and increase energy efficiency awareness by offering instant rebate coupons on a list of energy efficient technologies. There will also be promotional events to raise awareness of the technologies and to engage the public.

Target Market: Residential

The small technology program will be marketed toward residential customers province wide. All customers will be eligible to participate regardless of age of home or heat source.

Eligible Measures

Eligible measures in this program will vary over time and will be selected based on cost effectiveness, energy saving potential and market conditions.

Delivery Strategy

Partnerships will be made with both chain and independent retailers to offer instant rebates to customers on a number of energy efficient products. The intent is to update the list each year, encouraging customers to purchase more products over time.

Coupon campaigns will be offered each year. These campaigns will include the delivery of public engagement events held at retailers. These events will consist of exchanges and giveaways that will promote the technologies offered through the coupons.

Small Technologies Program

Market Considerations

The technologies included in the program do not involve a major renovation. This program will allow the Utilities to reach customers that may not have been able to participate in the other incentive programs.

Incentive Strategy

Incentives for this program include instant rebates that will vary by year and campaign. The rebate value will be different for each technology offered, and will reflect incremental cost of the more efficient options.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness. Exit interviews will be conducted during selected retail events. Formal evaluations will be conducted after the first year of implementation, and biannually during operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$239,000 (launched in 2014)

Associated Savings -39 MWh/yr (launched in 2014)

HE HRV Program

Program Description

The objective of this program is to increase the installation of higher efficiency HRVs (those with a sensible heat recovery efficiency, or SRE, level of 70% or more). In 2013, the National Building Code is expected to require all new home HRV installations to have an SRE level of at least 60%. The program components include rebates and financing, and a variety of education and marketing tools.

Target Market: Residential

This program targets all residential customers regardless of heat source or age of home. Eligibility is available to all homes that install or replace an HRV.

Eligible Measures

Eligible measures in this program include all HRV models that have an SRE of 70% or more.

Delivery Strategy

Delivery of this program will be bundled with the insulation, window and thermostat programs as part of the takeCHARGE residential portfolio.

Marketing initiatives include partnering with retailers and trade allies in the home building and renovation industry, particularly certified HRV installers. Tools and tactics will include retail and model home point-of-sale materials, advertising, website, tradeshow, community outreach and trade ally activities. Rebates and financing will be processed through customer application.

HE HRV Program

Market Considerations

The market includes new construction and existing HRV replacement. HRVs are widely used in new home construction in the province. Early HRV installations of the 1990s are at or near the end of their useful life, so many of these will require replacement in the planning period. Initial cost is a barrier to increased market penetration, as is awareness of the benefits of selecting more efficient HRVs.

Incentive Strategy

Incentives for this program include rebates and financing. The rebate value is estimated to be \$175 for qualifying HRV units. This will reflect incremental cost of the more efficient options.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted after the first year of implementation, and every two years during operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:
 Deferral Cost - \$23,000
 Associated Savings -3 MWh/yr

Block Heater Timers Program

Program Description

This program encourages the use of block heater timers by residential vehicle owners in the Labrador West and Central regions. Vehicle owners regularly plug in their block heaters overnight but three hours is enough for the safe operation of the vehicle to warm the coolant and the engine. The timers are available through giveaway and incented through at cash retail coupons.

Target Market: Residential

The program targets residential vehicle owners in the Labrador West and Central regions that do not currently use timers for their block heaters. It is estimated there is a potential market of nearly 10,000 residential vehicles in the region.

Eligible Measures

Eligible timers are 120 volt heavy duty outdoor timers with either manual or digital programming options. Timers provided through Hydro's giveaways are pre-programmed for a three hour operation whereas those available at retailers may be pre-programmed or require set up.

Delivery Strategy

The Block Heater Timer Program will run during the winter months with active promotions and giveaways to highlight the technology. The program will be launched with giveaway events happening at partner retailers in both Labrador West and Central and follow with the introduction of the \$10 at cash rebate on pre-approved models of timers. Marketing and promotions include print and radio and efforts are made to engage local employers and find champions to be advocates of the product.

The launch event giveaway provides a limited number of pre-programmed timers to customers. These customers are required to participate in survey research to determine their attitudes towards and use of the timers for future verification of savings and to adjust marketing and promotional efforts.

Hydro will also explore partnerships with other groups and businesses in the region regarding further promotions and awareness of the product.

Block Heater Timers Program

Market Considerations

Initial research indicates that while block heaters are used extensively, timers are rarely used. It is common perception that a block heaters need to be plugged in overnight, rather than for limited time before start up. As well, due to lack of demand, retailers do not regularly carry the product and efforts need to be made with partner retailers to ensure on-going access to the timers. The average retail price for an eligible timer is approximately \$23. Promotions and delivery strategies address both the customer perception and retail access components.

Incentive Strategy

The program provides giveaway of the technology initially to create awareness of the product and a \$10 at cash rebate is provided through partner retailers, covering more than 40% of the cost of the product.

Program Monitoring & Evaluation

Contact information is collected for those redeeming at cash rebates and participating in the giveaways. Phone surveys will be conducted to validate usage and attitudes towards the product. The program will also be monitored for participation level and cost effectiveness.

Estimated Costs & Energy Savings

This program was closed in 2014 due to lack of participation.

2014 Hydro Estimated:

Deferral Cost - \$0

Associated Savings -0

Lighting Program

Program Description

The objective of this program is to reduce energy use through more efficient lighting technologies in commercial buildings. The program components include rebates on a specific list of qualifying technologies, and a variety of education and marketing tools. This program has been offered through takeCHARGE since 2009.

Target Market: Commercial

This program targets the owners of commercial buildings, encouraging these customers to install more efficient lighting equipment in new construction and retrofit of existing buildings.

Eligible Measures

The eligible measures for this program have included high performance T8 lamps and ballasts, and LED exit signs. Beginning in 2013, additional measures will be eligible, including T8 and T5 fluorescent fixtures used in areas with high ceilings, such as warehouses, gymnasiums, arenas and garages.

Delivery Strategy

Delivery will be integrated with other takeCHARGE commercial sector programming. Marketing for this program will include partnering with lighting manufacturers, distributors, electrical contractors and lighting service providers as key market influencers and allies. The program will create business opportunities for trade allies to sell more efficient lighting products.

The program will also target commercial property owners through direct marketing and through industry associations such as the Building Owners and Managers Association.

Tools and tactics will include trade ally and business association activities, such as workshops for distributors, contractors and building operators, retail point-of-sale materials, website and advertising in trade publications. Demonstration projects will be selected from program participants. Rebates will be processed both through distributor point-of-sale and through customer application, depending on the lighting measure.

Lighting Program

Market Considerations

Use of high performance T8 fluorescent lighting has increased since the program was introduced. Approximately 60% of fluorescent ballasts sold annually are now high performance T8, rather than less efficient T12 or standard T8. However, less than 25% of fluorescent lamps are a high performance type. Some high efficiency technologies, such as T5 fluorescent high bay lighting, are now widely used in new commercial construction, but are used less frequently in existing buildings.

High performance fluorescent lighting systems use 25% to 40% less energy than standard fluorescent systems. LED technologies, such as LED exit signs, use 80-90% less energy than fixtures with incandescent lamps. The eligible technologies are widely available through existing channels. The primary market barriers include higher initial cost and lack of understanding of appropriate lighting technologies and savings potential.

Incentive Strategy

Program incentives reduce the cost differential for higher efficiency products and also provide a sales incentive to participating lighting distributors to sell high performance T8 lighting, ballasts and lamps to their customers. The incentives offered are \$1.25 for lamps and \$4.25 for ballasts. The incentive for exit signs is \$21.00 per unit. The incentive for T8 and T5 fluorescent fixtures is estimated to be \$60 per T5 fixture for replacement of 400 watt and 250 watt metal halide fixtures in high bay and \$55 per T8 fixture for medium bay applications. Pricing of some eligible measures has increased materially in the past 12 to 18 months. This largely reflects international supply dynamics. As a result, incentive levels will be reviewed annually to ensure consistency with incremental costs.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness and a representative sample of installations will be inspected. Formal evaluations will be conducted every two years during operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$30,000

Associated Savings -25 MWh/yr

Isolated Systems Business Efficiency Program

Program Description

The objective of the program is to improve electrical energy efficiency across a variety of end uses. The program components include financial incentives based on energy savings, and other supports to assist in opportunity identification and evaluation. This program provides a custom approach that will allow larger commercial customers to explore a wide range of technologies suitable to their own operations, as well as an engineered track that allows for smaller customers to assess opportunities for common end uses.

Target Market

Non-residential customers in Hydro's isolated diesel and L'Anse au Loup systems are eligible.

Eligible Measures

Eligibility of the measure is based on engineering analysis of the savings. Technologies would include, but not be limited to, lighting, (heating ventilation air conditioning) HVAC, compressed air and others.

Delivery Strategy

For the engineered track, customers are able to utilize spreadsheets to assess their savings and potential rebates for common end uses, including:

- Commercial lighting – Interior, High bay or Directional
- Unitary A/C equipment (i.e. roof top units)
- Variable speed drives for fans or pumps
- Compressed air

The engineered track allows customers' progress to be incented based on their actual savings and baselines, unlike the traditional prescriptive incentive. Hydro staff will work with customers to determine baselines and estimates of savings based on the suggested retrofit. The custom track involves a walkthrough audit and feasibility analysis to determine savings and eligible incentive. This allows for a wide range of eligible technologies and projects.

The program is managed internally with some external engineering verification of projects. The Utility facilitates customers through the appropriate processes to evaluate and implement approved projects. This model has been used successfully in other jurisdictions.

Isolated Systems Business Efficiency Program

Market Considerations

Barriers to efficiency in the commercial market include financial and human resource concerns. Incentives will assist in making energy efficiency upgrades more accessible. Human resource concerns are around awareness and knowledge of the technology options as well as time to develop the business case for retrofit projects.

The isolated systems have additional challenges with access to product and access to specific technical skill sets in the evaluation of projects and technology. Hydro's program staff will assist in addressing those gaps.

Incentive Strategy

Incentives will include rebates based on energy savings, as well as funding assistance for feasibility and engineering analysis of opportunities. Rebate levels and available engineering assistance will vary based on forecasted savings and scale of the project.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, and include site visits, engineering reviews and other methods of verifying savings.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$120,000

Associated Savings -50 MWh/yr

Business Efficiency Program

Program Description

The objective of this program is to improve electrical energy efficiency in a variety of commercial facilities and equipment types. The program components include financial incentives based on energy savings, and other financial and educational supports to enable commercial facility owners to identify and implement energy efficiency projects.

Target Market: Commercial

This program targets existing commercial facilities that can save energy by installing more efficient equipment and systems. The program will include a custom projects approach which will appeal primarily to large commercial customers with annual energy consumption of 1,000,000 kWhs or greater. The program will also include rebates for specific measures on a per unit basis, which will appeal to small to medium commercial customers as well.

Eligible Measures

Custom projects' eligibility will be based on engineering review and verification of estimated energy savings impacts. Specific measures eligible for per unit rebates will include HVAC equipment, refrigeration, motors and variable speed drives. It is expected that the initial list of eligible technologies will be expanded as the program matures based on program experience and market opportunities.

Delivery Strategy

For this program, the utility will manage the delivery and take the role of facilitator and consultant, supporting commercial customers to complete project proposals and implement approved projects. The program will utilize external engineering consultants for evaluation of larger project proposals and for monitoring and verification of energy savings.

The program will target equipment suppliers, service providers and consultants as key market influencers and allies in the promotion of energy efficient equipment. Rebates which reduce the cost of efficiency upgrade projects also provide a sales opportunity for these trade allies. Direct marketing to commercial facility owners and to industry associations will support the sales efforts of equipment and service providers.

Business Efficiency Program

Market Considerations

The custom project approach requires one-on-one support for project design and delivery at larger commercial facilities. The lifecycle for each custom project will be measured in months rather than weeks due to project planning and implementation timelines as well as post-installation verification and evaluation. This type of program requires that facilities have business and financial stability to continue operations for a time period appropriate to achieve cost effective savings.

Rebates for specific measures will appeal to a broad range of customers, providing a simpler approach for program participation.

Incentive Strategy

Incentives for this program include rebates based on \$0.10 per kWh of energy savings in the first year of implementation. Financial support will also be available for facility energy audits and feasibility studies, if required, based on 50% cost sharing. Guidelines for maximum incentive per project and for scheduling incentive payments for custom projects will be determined in the program detailed design phase. A list of rebates will be developed to reflect incremental cost for specific measures on a per unit basis or based on energy use and hours of operation (for example, lighting controls or thermostats).

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality and cost effectiveness, including engineering review and inspection of all custom projects and assessment of long-term impact on customer processes. Formal program evaluations will be conducted within the first year of implementation and every two years during operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:
 Deferral Cost - \$81,000
 Associated Savings -24 MWh/yr

Industrial Energy Efficiency Program

Program Description

The objective of this program is to improve electrical energy efficiency in a variety of industrial processes. The program components include financial incentives based on energy savings, and other supports to enable industrial facilities to identify and implement efficiency and conservation opportunities. This program is a custom program to respond to the unique needs of the industrial market, rather than a prescriptive technology approach.

Target Market: Industrial

This program targets new and existing industrial process equipment in the transmission level customers served by Newfoundland and Labrador Hydro.

Eligible Measures

Eligibility of projects is based on engineering review and confirmation of estimated energy savings impact. Technologies include, but are not limited to, compressed air, pump systems, process equipment and process controls.

Delivery Strategy

The program is managed internally with external engineering verification of projects and monitoring and evaluation of energy savings. The utility takes the role of facilitator and consultant in providing methods for industrial customers to complete project proposals and implement approved projects. This program model has been used successfully in other jurisdictions.

This program was launched as a pilot program in 2009. With the first project applications being submitted in 2011, the pilot was closed to new projects at the end of 2013. A review of the pilot was conducted by CLEAResult to assess opportunities for moving forward. Findings indicate there continues to be a strong interest from Industrial Customers in participating. CLEAResult's recommendations will be used to develop a continued plan to ensure relevant programming is available to the industrial sector.

Industrial Energy Efficiency Program

Market Considerations

This market requires a one-on-one approach to project design and delivery. The program builds on the work already completed by the industrial customers, and addresses their unique barriers to improved efficiency, which include, but are not limited to, access to capital and human resources.

The lifecycle for each program transaction will be measured in months rather than weeks because of the need for review, contract development, implementation timelines and post-installation monitoring and evaluation. This type of program requires that facilities have financial and business stability to continue operations for a time period appropriate to achieve cost effective savings.

Incentive Strategy

Incentives for this program include rebates based on energy savings, as well as funding assistance for additional enabling mechanisms.

Program Monitoring & Evaluation

The program will be monitored for participation level, service quality, and cost effectiveness, including engineering review and inspection of all projects and assessment of long-term impact on customer processes. Formal program evaluations will be conducted every two years during program operation.

Estimated Costs & Energy Savings

2014 Hydro Estimated:

Deferral Cost - \$1,230,000

Associated Savings -15,000 MWh/yr

Appendix B: Deferral Account Definition

Appendix B: Deferral Account Definition**Conservation and Demand Management (CDM) Cost Deferral Account
Proposed Definition**

The account shall be charged with the costs incurred in implementing the CDM Program Portfolio. The costs will include such items as detailed program development, promotional materials, advertising, pre and post customer installation checks, application and incentive processing, incentives, trade ally training, employee training, and program evaluation costs associated with programs in the CDM Program Portfolio.

The account will exclude any expenditure properly chargeable to plant accounts. The account shall also exclude conservation expenditures that are general in nature, such as costs associated with providing energy conservation awareness, responding to customer inquiries, planning, research and general supervision that are not associated with a specific program in the CDM Program Portfolio.

The account will exclude any expenditure related to programs or incentives that are fully recoverable from other parties, including government. Where a program or initiative is partially funded by other parties, the amount funded will be used to reduce the appropriate expenditures.

Costs associated with Labrador Interconnected customers will be tracked separately from costs associated with the other customers, as programs for the latter are based upon a cost structure which is significantly different from the Labrador Interconnected System and future disposition may be treated separately.

Transfers to, and from, the proposed account will be tax effected.

The disposition of any balance in this account will be subject to a future Order of the Board.