Q. P.U. 14 Board Order No. 16 requires NLH to submit in conjunction with its annual financial report, an annual report outlining core strategies, corporate goals and achievements; appropriate historic, current and forecast comparisons of reliability, operating, financial and other key targeted outcomes/measures including the additional KPIs accepted in PU 14; and initiatives targeting productivity or efficiency improvements, including status of ongoing projects and improved performance resulting from completed projects. Please provide the most recent version of this report, including:

a. A detailed update of the achievements relating to each strategy listed on pages 1 through 4 of the report entitled *Strategic Goals and Objectives for Newfoundland and Labrador Hydro* dated March 2005.

b. A detailed update of the project to distribute compact fluorescent light bulbs to customers in isolated systems (page 11), including costs, customer take-up, energy savings and benefits, verification, etc.

A. a. Please see the Strategic Goals and Objectives for Newfoundland and Labrador Hydro in Attachment 1.

b. Please see the Second Interim Evaluation of Hydro's Compact Fluorescent Lighting Program For Isolated Diesel Systems In Newfoundland and Labrador in Attachment 2.

Strategic Goals and Objectives

For Newfoundland and Labrador Hydro

Pursuant to Order No. P.U. 14 (2004)

Newfoundland and Labrador Hydro

April 2006

Table of Contents

INTRODUCTION

In Order No. P.U. 14 (2004), the Board of Commissioners of Public Utilities (the "Board") directed Newfoundland and Labrador Hydro ("Hydro") to file with its annual financial report, commencing in 2004, an annual report outlining:

(i) A strategic overview highlighting core strategies, corporate goals and achievements;

(ii) Appropriate historic, current and forecast comparisons of reliability, operating, financial and other key targeted outcomes/measures including the additional KPIs accepted by the Board in Order No. P.U. 14 (2004); and

(iii) Initiatives targeting productivity or efficiency improvements, including status of ongoing projects and improved performance resulting from completed projects.

(i) STRATEGIES, GOALS AND ACHIEVEMENTS

In the fall of 2005, Hydro renewed its strategic planning process and identified high-level goals to focus the Corporation's efforts over the next 3-5 years. The goals reflect the broadened mandate identified for the Corporation by its shareholder, the province.

Goal 1: To be a safety leader.

Hydro intends to provide the safest workplace for employees and contractors compared with the best performers in any industry. In order to support this goal, employees and contractors need to fully understand the importance of safety and be committed to their responsibilities. Safety also goes beyond the workplace. Hydro will work to increase customers' understanding of the hazards of electricity and the public's understanding of the risks of our facilities.

During 2006 Hydro will concentrate on creating a safer work environment for its people and will develop a corporate strategy to reduce medical aid and disabling injuries. As well, a safe observation reporting process will be developed to identify hazards before they can cause accidents.

Goal 2: To be an environmental leader.

As a company and a member of the community, Hydro is committed to protecting the environment. Over the coming years we will improve our environmental performance by reducing the amount of emissions from our generation activities and meet or exceed Hydro internal requirements and external regulatory requirements. In addition, we will increase awareness of Hydro's priority regarding the environment and the role each employee can play.

Over the next three years, Hydro will increase the use of renewable energy and thereby reduce the requirement for oil-fired generation at Holyrood. As well, by using low-sulfur fuel in Holyrood, Hydro will reduce the emissions from power generated there. A continuing focus for the company will be maintaining ISO 14001 certification and continuing to address environmental priorities.

Goal 3: To strengthen our financial and governance structure to enable Hydro's new, expanded mandate.

Hydro will work to ensure its financial and governance structures are aligned to support its expanded mandate and deliver long-term value to the shareholder. This value will be provided through an appropriate rate of return from the regulated business as well as optimized returns from the upper Churchill asset, the lower Churchill project, and new business opportunities.

Efforts in 2006 will focus on determining the financial and governance structures required to support the expanded mandate and to begin implementing the resulting recommendations.

Goal 4: To grow a diversified and viable energy business.

In fulfilling its expanded mandate, Hydro will pursue growth in a number of areas of the energy sector – hydro, wind and other alternative energy sources, services and oil and gas. As the first full year with an expanded mandate, 2006 will mark the development of a business plan to guide Hydro's diversification in the energy sector and the achievement of early growth targets.

Goal 5: Through operational excellence, we will provide exceptional value to all consumers of our energy.

Hydro will work to meet or exceed the expectations of all its electrical customers – rural, Newfoundland Power and industrial. This will require that energy rates remain competitive, the supply of electricity is reliable, and there is an adequate supply of energy to meet future needs.

The generation, transmission and distribution of electricity remain at the core of Hydro's operations. In 2006, efforts will concentrate on increasing the reliability of the power supply and controlling operating costs. To position itself for future demands, Hydro will also focus on maintaining assets and developing a long-term plan for energy.

Goal 6: To achieve sanction for the Lower Churchill project (Gull Island and Muskrat Falls).

Over the 2006-2008 period Hydro will be completing the necessary planning and feasibility work to move this project forward.

Goal 7: To ensure a highly skilled and motivated team of employees who are strongly committed to Hydro's success and future direction.

Hydro's future success requires employees who are skilled, knowledgeable and performance-focused. With a collaborative relationship between union executive and Hydro management and strong leadership at all levels, the company will be positioned to fulfill its expanded mandate. A key issue to address is the increasing number of employees who will be eligible for retirement over the 5-10 years.

Goal 8: To be a valued corporate citizen in Newfoundland and Labrador.

Hydro will be a good corporate citizen and a strong member of the communities in which we operate. In 2006 we will focus on the development of a community relations strategy.

ACHIEVEMENTS - 2005

1. Role and Mandate

- In September of 2005, our shareholder, the Government of Newfoundland and Labrador, announced a new, expanded mandate to grow our business and pursue new energy opportunities. The expanded mandate focuses on new business opportunities in Labrador hydro developments, exploration of alternative energy options and ventures into the oil and gas industry while still maintaining a strong focus on our core utility operations of providing safe, least-cost reliable power to Newfoundlanders and Labradorians.

- The Government of Newfoundland and Labrador announced its intention to develop a comprehensive energy plan. This will undoubtedly provide additional direction on Hydro's future mandate and other electricity industry issues. Hydro continues to participate in this process, assisting in the development of this comprehensive energy plan.

2. Improve Customer Satisfaction

- As a part of Hydro's ongoing commitment to promoting conservation efforts, a Hydrowise Energy Conservation School pilot program was undertaken in the fall of 2005. The program was piloted with the Grade

Two and Three classes at Bay d'Espoir Academy. During the program, the children learned how they and their families can conserve energy in their homes and communities.

- Hydrowise was a sponsor of the new Switch to Cold energy conservation program in partnership with the Canadian Energy Alliance. This program emphasizes the benefits to consumers of washing their clothes in cold water saving money and energy. This initiative is one of many which we are pursuing to promote energy conservation with consumers.

- On December 5th, Hydro issued a Request for Proposals for 25 MW of cost-effective wind generation to add to the Island grid. The addition of wind generation aligns with the company's intent to include alternate energy sources in its generation mix. The company is taking a phased approach to test the technical and economic viability of the projects to ensure consumers receive a cost-effective energy source. The deadline for submission of final proposals is August 31st, 2006.

- Frontier Power Systems Inc. started wind energy production in Ramea late in 2004. In 2005, Frontier produced 418,800 kWh which provided about 10% of the total energy required for Ramea through wind generation. Hydro made a significant contribution to the viability of this pilot project, assisting with technical integration with our diesel system.

- In early December, representatives of Hydro's Customer Services met with residents of Rencontre East. The group discussed issues surrounding the new distribution line that will connect the town to the Island's Interconnected Grid and the associated rate changes.

- Hydro's annual customer service survey shows that results remain essentially unchanged. Overall, 93% of our customers are satisfied with the level of customer service they receive from Hydro.

3. Optimize Corporate Performance

- In the fall of 2005, the organization underwent a corporate reorganization to facilitate the new mandate. The company was reorganized into four separate lines of business: Regulated Operations, Churchill Falls Operations, Lower Churchill and Business Development. As well a layer of senior management was removed from the organization resulting in a streamlining of several divisions and improved communication.

- Hydro's approach to its program of business process review has been amalgamated into a broadened corporate program for organizational effectiveness. In future, there will be a strong focus on benchmarking and best practices, as well as on continuous improvement methodologies and performance measurement.

- While Hydro's controllable unit cost in 2005 increased, it was largely due to increased operations and maintenance expenses associated with a major overhaul on a unit at the Holyrood Generating Station. Increased maintenance costs were also experienced as a result of overhauls on diesel units in our rural operations. These unavoidable increases in maintenance costs, coupled with a decrease in overall energy deliveries caused by lower sales to customers in the pulp and paper industry, led to an increase in our controllable unit cost.

- In 2005, through its various reliability KPIs, Hydro measured an overall improvement in its operating performance over 2004. Hydro recorded an improvement in SAIDI (duration of outages) and SAIFI (number of outages) for the operation of Hydro's transmission and distribution assets.

- For only the fourth time since commissioning, the Holyrood Generating Station operated all three units for the full month of January 2005 (2,232

hours of production). In February, the plant set a new record for plant conversion factor, achieving 683.1 gross, 649.53 net at an average load of 135.93 MW.

- Hydro maintains approximately 2,400 km of wood pole transmission lines and some 26,000 wood poles of varying ages; 34% are over 30 years, 31% are 20-30 years and the remaining poles are less than 20 years old. Many of these poles have reached the end of their useful life. The wood pole management program is designed for early detection and treatment of the wood pole to extend its lifespan before the integrity of the structure is jeopardized. This program is invaluable to ensuring the reliability of Hydro's wood pole transmission lines and ultimately ensuring a secure power supply to customers.

- The replacement of the 302-foot high stack liner on Unit No. 2 at the Holyrood Generating Station took place during the summer months. In addition, industrial equipment at Holyrood was overhauled as both Units 1 and 2 are approaching 35 years of service and Unit 3 is almost 25 years old. The replacement of the steel liner and upgrades to the industrial equipment will increase reliability to customers over the remaining life of the plant.

- A new anti-fouling system for the cooling water systems on the three units at Holyrood was installed in the third quarter of 2005. Holyrood uses over 250,000 litres of seawater per minute for cooling on each unit and 900,000 litres per day of fresh water. The new system uses a copper ion injection method to deter mussels from living in the plant's cooling water pipes. The new system allows for better efficiency of the plant's cooling system and eliminates the cost of manual cleaning and removal of mussels, preventing pipe blockage, resulting in unit outages.

- The replacement of approximately 800 insulators on 355 structures was completed on Fogo Island. The work by the line crews included replacing the insulators, repairing 40 defective cut-outs, installing hardware and transferring conductors to new poles. These upgrades will improve reliability to customers in this area.

- Under the direction of the Department of Business, Government of Newfoundland and Labrador, Hydro has been directed to adhere to the guidelines of the Red Tape Reduction Program. This program is designed to reduce economic, social and environmental burden by 25% over the next three years. Hydro was asked to review its forms, by-laws and statutes to identify areas where it may cause regulatory burden to external parties. The first phase of the review was completed in November.

4. Human Resources

- Hydro continues to face the pressure of retirements throughout the company. In 2005, 46 employees retired. There are significant industry shortages in the trades and technical fields. Hydro is committed to progressive human resource management including recruitment and retention of a qualified workforce, ensuring appropriate and competitive compensation, training and development and succession planning. This will be key to Hydro's continued success as 25% of its workforce is eligible for retirement over the next five years.

- Hydro is facing many of the same challenges, with respect to recruitment and retention of journeyperson trades staff, as the other Atlantic utilities and other industries. The demographics of the utility sector indicate that many current employees will be retiring within the next two or three years. Hydro will be at a competitive disadvantage when recruiting for the same

group of qualified individuals, not only in terms of wage disparity, but also given the remote geographic locations we will be recruiting for. Recommendations and strategies are being developed to address the impact of a loss to the workforce in the next five years.

- A Corporate Learning and Development Strategy was initiated in 2005. Highlights of the strategy included a revised orientation and learning standard for employees and the development of a cross functional skill-set to ensure greater flexibility.

- Succession planning initiatives included a review of the Graduate Development Program guidelines, enhancing the guidelines to include a more comprehensive evaluation process, an extended program duration / extensive experiential cycle, a mentorship component and a review of the Corporate Apprenticeship Program. We also are reviewing the future demand for trades persons and are revising program guidelines to provide for more flexibility to accomplish the goals of Hydro's future trade requirements.

- A Musculoskeletal (MSK) Wellness Program was developed by our Occupational Safety & Health Department to help reduce sick and injury leave as a result of MSK injuries. A pilot project was introduced to improve individual employee's health and in turn reduce the incidence of illness and injury. Pilot groups in Bishop's Falls, Springdale and Holyrood were chosen along with 46 Line Workers and Thermal Plant Operators. Hydro wrapped up its six-month assessment with line workers from Springdale and Bishop's Falls and thermal plant operators from Holyrood. At the end of the six-month project, health and fitness measures have improved significantly by 15% or more, with improvements in areas such as blood pressure, physical activity, leg strength and lifting principles. The

goal is to apply the findings of the pilot project to the wider Hydro employee population. It is expected that this project will decrease overall MSK problems and create a healthier and more productive workplace.

5. Public Awareness

- During 2005 Hydro issued several news releases, as required, to inform the public of issues that impact electricity consumers. All news releases issued in 2005 are available on Hydro's website.

- Hydro continued to make progress on the Human Health Risk Assessment (HHRA) being conducted at the Holyrood Generating Station. The HHRA is being conducted by Cantox Environmental and being peer reviewed by Health Canada in consultation with the Department of Environment and Conservation. This process extended the timeline of the assessment into 2006.

- Hydro once again sponsored Conservation Corp Green Teams. Hydro supported the Central Coast of Bays Green Team which undertook to remove garbage and car parts from the regional dumpsite. This team researched how a car wreck breaks down into elements and returns back to the earth. This information was placed on display panels, which they are designing for future use. They are also teaching children about the importance of energy conservation and issues of climate change.

- In 2005, the Granite Canal Generating Station achieved EcoLogo^{M} certification. Electricity produced by the Granite Canal Hydroelectric Generating Station has been designated as "Electricity - Renewable Low-impact" by TerraChoice Environmental Services Inc. (TES). TES manages and operates the Environmental Choice^{M} Program (ECP) on

behalf of Environment Canada, to certify existing and new green energy supply. Hydro hopes to sell renewable energy credits from Granite Canal to the Federal Government through the PERR (Purchase of Electricity from Renewable Resources) program expected to be launched in a Request for Proposal for green energy in the province this fall. Facilities that successfully meet the ECP standards receive the program's official symbol of certification – the EcoLogo^{M}. This certification mark is internationally recognized as proof of successful evaluation against stringent environmental criteria. As of February 1, 2005, Hydro has been licensed to use the EcoLogo^{M} for electricity sold from Granite Canal.

- The Granite Canal Fish Habitat and Compensation Facility has been recognized by the National Hydropower Association to receive the 2005 Outstanding Stewardship of America's Rivers Award. This North American Environment Award recognizes Hydro for innovative efforts in balancing electricity production with the protection of local fish species and their habitat.

- In December, Hydro was recognized by the Canadian Society of Safety Engineering. The National Award of Recognition was presented for excellence, professionalism and significant contribution to the North American Occupational Health and Safety Association.

6. Expanded Business Opportunities

- Hydro has been given an expanded mandate to pursue new business opportunities in the energy sector. The corporate reorganization supports this new direction by creating four distinct lines of business including a consolidation of the core regulated activities under one

division – regulated operations. The core business of providing safe, reliable and least-cost power to residents of Newfoundland and Labrador will continue to be a strong focus of the corporation and any new business opportunity will be pursued on sound business planning with thorough economic and risk analysis. Hydro intends to be a leader in all aspects of the province's energy sector and a strong economic contributor.

(ii) APPROPRIATE HISTORIC, CURRENT AND FORECAST COMPARISON OF RELIABILITY, OPERATING, FINANCIAL AND OTHER KEY TARGETED OUTCOMES

Details of the information required for this has been included in a separate report entitled “Annual Report on Key Performance Indicators” dated March 31, 2006.

(iii) INITIATIVES TARGETING PRODUCTIVITY OR EFFICIENCY IMPROVEMENTS

Centralized Planning

Centralized planning departments with dedicated maintenance planners have been established at Hydro offices in Bishop's Falls, Port Saunders, Happy Valley / Goose Bay, Holyrood, and Bay d'Espoir. The overall benefit is that front line personnel can now spend more time in the field or at the work location, allowing better utilization of the workforce, and tighter control of the work activities. As well a review of prioritization practices was undertaken in an effort to ensure consistency across the organization. As well, efforts were made to ensure that some number of low priority items were also completed and not left in backlog indefinitely.

Asset Optimization

In our terminal stations Hydro has instituted a program for reclaiming transformer oil with the goal of obtaining increased service life. From 2002 to 2004 Hydro reclaimed 5 power transformers utilizing contractors, at a cost of approximately $55,000 per unit. As a result of this significant cost, Hydro purchased an oil reclamation unit in 2005. Even with the initial up front capital cost of approximately $500,000, the purchase of this unit will save Hydro an estimated $1,150,000 over a ten-year period, assuming 3 power transformers are reclaimed each year.

In 2004 and 2005 the air blast breaker overhaul program to extend the life of aging 230 kV Air Blast Circuit Breakers was continued. Five breaker overhauls were completed in the past two years.

New Digital Fault Recorders were installed at Bottom Brook Terminal Station in 2005. This improves the access to data for our engineering staff to perform post fault analysis, which will provide information to field staff and assist in faster restoration of the affected systems.

Following appropriate analysis, Hydro has modified the frequency for scheduled overhauls on diesel engines from every 15,000 to every 20,000 hours. This is intended to mitigate operating and maintenance cost pressure without compromising reliability.

Helicopter Usage

The average annual usage of the helicopters for the period 2002 to 2004 was 1560 hours. In recognition of the significant increase in the hourly costs for this service, measures were taken to minimize the use of these machines. As a result we were able to reduce our hours flown from the previous average of 1560 hours to 1140 hours in 2005. These reductions are attributable primarily to reduced line patrols consistent with Reliability Centered Maintenance (RCM) principles. In addition, a marked decrease in helicopter use by TRO Labrador was accomplished through a greater reliance on regularly scheduled flights where viable. With better planning particularly with respect to Outage Management, better integration of remote site visits will aid in containing helicopter cost.

Amalgamation of the Systems Operations & Customer Services Groups

The amalgamation of these departments brought together all the Head Office customer service related functions of customer communications, customer billing, meter reading and meter inspection, certification and maintenance. Previously these responsibilities were spread across three divisions. These changes will result in a greater customer service focus and improved delivery of the many services that are provided to all Hydro's customers.

Automatic Meter Reading

In 2004 and 2005 Hydro conducted a pilot project for Automatic Meter Reading (AMR). AMR is a fast growing meter reading technology and can be a very cost effective and efficient means of reading customer meters. The pilot project, conducted on the St. Brendan's Power System, was done using the Hunt Technologies one-way power line carrier system. The project proved to be successful and showed that the technology was workable in Hydro's rural service areas. A draft Business Case was prepared in 2005 to justify the feasibility of expanding AMR. The Business Case is currently being reworked and will include a plan for implementation to some service areas beginning in 2007 subject to the Board's approval of a pending capital budget proposal

Business Process Review

During 2005, the Work Execution and Outage Management processes for routine and project work were implemented throughout the organization. In addition, the JD Edwards system was reconfigured to support the implementation of the Work Execution process and staff was trained in the new functionality. The fixed asset and equipment maintenance databases were combined into a single asset database to better support the Asset Record Management process that was implemented in 2004. Budgeting templates were redesigned to meet the new Work Identification & Prioritization process information standards.

Hydro's approach to its program of business process review has been amalgamated into a broadened corporate program for organizational effectiveness. In future, there will be a strong focus on benchmarking and best practices, as well as on continuous improvement methodologies.

CONCLUSION

In accordance with Order No. P.U. 14 (2004), this report provides an overview of Hydro's core strategies, corporate goals and achievements in 2005.

These strategies and goals will continue to be reviewed annually and refined as required as part of Hydro's corporate strategic planning process.

Second Interim Evaluation Of
Hydro's Compact Fluorescent Lighting Program
For Isolated Diesel Systems
In Newfoundland and Labrador

Prepared By

Economic Analysis Section, System Planning

Newfoundland and Labrador Hydro

February 2006

This second interim evaluation report includes the explanatory program material contained in the January 2005 interim report along with additional information to reflect the most current status of Hydro's CFL efforts on isolated diesel systems.

Background

In the spring of 2004 Newfoundland and Labrador hydro (Hydro) approved a compact fluorescent lighting (CFL) program for its domestic customers on isolated diesel systems. This followed an internal analysis of the cost and benefits associated with offering free CFLs to Hydro's domestic diesel customers[1]. Such an undertaking would be financially justified since Hydro's short run marginal costs on its diesel systems (i.e. diesel fuel costs per kWh generated) are greater than Hydro's domestic marginal revenue (revenue received for an incremental kWh sold). Accordingly, the reductions in electricity production on isolated systems associated with a CFL initiative will reduce financial losses so long as CFL program costs are modest. The scope of the program was expanded through 2005 to include all general service customers receiving the preferential domestic rate, including schools. This was possible owing to the rise of marginal fuel costs without any changes in expected marginal revenue[2].

Setting Up The CFL Program

During the late spring of 2004 Hydro purchased approximately 16,000 CFLs which represented an amount sufficient to provide every domestic diesel customer with 6 CFLs. The supplier prepared packages of 6 CFLs consisting of 1-10 watt, 1-15 watt, 2-20 watt, and 2-26 watt CFLs. **HydroWise** stickers were affixed to the CFL packages to help associate energy efficiency with Hydro's corporate initiative. The supplier arranged for the shipment of CFLs directly to each diesel community. Concurrently, Hydro had contacted a retailer in each diesel system and entered into an agreement wherein the retailer would take delivery of the CFLs on behalf of Hydro, provide storage, and

[1] For a more complete program background see *Proposal for a Compact Fluorescent Lighting Program for Isolated Diesel Systems*, NLH, April 2004.

[2] As of February 2006 isolated diesel fuel costs are slightly higher than non-government general service marginal revenue.

distribute a CFL package to each customer who redeemed a CFL coupon with the retailer[3]. For this service Hydro paid each retailer a set fee for each CFL bulb distributed to customers on its behalf. At the end of the summer period, when all CFLs were delivered to the retailers on diesel systems, Hydro mailed to virtually its entire domestic diesel customer base a CFL brochure explaining the energy efficient lighting product and the overall program[4]. The brochure included a detachable coupon for the customer to redeem at the identified local retail store in order to obtain the CFLs. For Nunatsiavut communities in Labrador, the mail out included an additional page of information in Inuttitut mirroring the basic information contained in the brochure.

CFL Initial Program Activity Through 2004 and early 2005

Hydro delivered more CFLs to each retailer than it mailed coupons to any given community to allow for an inventory cushion to cover unforeseen requirements such as CFL breakage and manufacturing defects. At the end of 2004 Hydro had experienced a lower uptake for CFL in Labrador than on the Island. The coupon program was subsequently extended in key Labrador communities until March 31, 2005. Additional information mail-outs were undertaken and there were radio advertisements placed on some community based radio stations. In addition, a CFL promotional message was printed on diesel customer bills. Across theses various efforts, Hydro was able to increase the CFL coupon redemption rate in Labrador by 21 percent.

As of December 31, 2005 the number of CFLs distributed to domestic customers under the initial project scope was 12,498 bulbs, representing an overall coupon redemption rate of 87 percent. The CFL distributed on each diesel system is detailed in Table 1.

[3] TRO staff delivered CFLs in St Brendan's and Norman Bay due to constraints with retailers. TRO also provides program assistance and CFL inventory management going forward. Customer Services provided support throughout the CFL promotion through its CSR interface with customers.
[4] Excluding L'Anse au Loup and Natuashish.

Table 1: CFL Distribution to Domestic Customers As of Dec 31, 2005		
Diesel System	CFL Distributed	Coupon Redemption Rate
Ramea	1,584	94%
Cartwright/Paradise River	1,278	85%
Nain	1,188	67%
Mary's Harbour	1,038	95%
Port Hope Simpson	978	94%
Charlottetown/Norman Bay	768	86%
Hopedale	768	75%
Rigolet	666	100%
St Brendan's	570	92%
Makkovik	564	79%
St. Lewis	480	90%
Little Bay Islands	456	85%
Postville	390	84%
Rencontre East	384	98%
Black Tickle	366	91%
McCallum	318	100%
Grey River	306	96%
Francois	270	85%
Williams Harbour	126	95%
Total Labrador	8,610	85%
Total Island	3,888	93%
Total CFL	12,498	87%

CFL Program Activity During 2005

Hydro's original CFL program with retailers in diesel systems fully concluded at the end of the first quarter 2005. Any remaining CFL inventory on retailer premises was then returned to Hydro's various diesel plants or area office.

On isolated diesel systems there are a number of general service customers who receive a preferential rate in the form of the lower priced domestic rate structure. These customers are churches, community halls, recreational buildings, and public schools. Thus the economics of CFL for theses customers plays out the same as for domestic customers with the additional observation that high consumption for schools means that the marginal revenue loss is at the third block rate. During 2005, Hydro initially offered CFLs to all preferential diesel accounts excluding schools[5]. The persistence of high market prices for diesel fuel meant there was no risk of marginal cost being less than the third block marginal revenue and Hydro subsequently offered CFLs to all schools located on isolated diesel systems. In terms of process, a mail-out was undertaken to all preferential general service accounts offering free CFLs and requesting an inventory of incandescent lighting by wattage. Up to 18 CFLs were provided for each preferential account that participated in Hydro's offer. Similarly, all schools were sent correspondence with program information and a request for a lighting inventory. Up to 50 CFLs were provided to participating schools.

Also during 2005, Hydro commenced identifying new domestic diesel service connections and then arranging for local front-line staff to deliver a package of 6 CFLs to the account location. To the end of 2005, deliveries of CFLs have been made to an additional 16 new domestic customer connections on isolated systems.

Hydro also requested TRO staff to ensure where possible that all incandescent lighting in diesel plants and facilities be replaced with CFLs from remaining inventory.

[5] Some initial promotion to preferential general service accounts actually commenced in late 2004 but is treated here as 2005 activity for presentation purposes only.

The following table summarizes Hydro distribution of free CFLs to preferential and new domestic diesel accounts to the end of 2005.

Table 2: CFL Distribution for Preferential and New Domestic Accounts
As of Dec 31, 2005

	Number of Eligible Accounts	Participation Percentage	Number of CFL Distributed
Preferential Accts	49	31%	185
Schools	21	43%	181
New Accounts	16	100%	102
Diesel Plants	21	19%*	66
Total	70	NA	534

* Confirmed. Opportunities will vary with the age of the plant.

Table 3 below summarizes Hydro's total CFL distribution and the reported inventory remaining. Hydro has now distributed just over 14,000 CFLs across its diesel systems, which represents some 88% of the bulbs originally acquired for the program.

Table 3: Total CFL Distribution In NLH Isolated Systems
As of December 31, 2005

	CFL Domestic	Non-Domestic Accounts[1]	Non-Coupon CFL[2]	Estimated Breakage	Inventory	Total CFL
Labrador	8,610	370	769	55	1,290	11,094
Island	3,888	164	333	25	492	4,902
Total	12,498	534	1102	80	1,782	15,996

1. General service customers with preferential rates and NLH plant.
2. CFLs distributed without retailer reimbursement (e.g. mislaid coupons), unreported use, etc.
3. Allowance for breakage based on manufacturers suggested rate.

An Evaluation of CFL

During 2005 Hydro undertook a sample survey of diesel customers who had redeemed CFL coupons to estimate the actual installation of the distributed CFLs, the reasons why any CFLs were not being used, their receptiveness to purchasing CFLs in the future, and any other general comments on the program. A total of 66 survey returns were sent back to Hydro out of a sample survey of 195 representing a response rate of 34%. The results of the customer survey indicated a 10% non-installation rate (for various reasons) and a 3% CFL malfunction rate. This information would be integrated into the program's economic analysis. Most of the general comments on the program indicated that customers were appreciative of Hydro's CFL initiative.

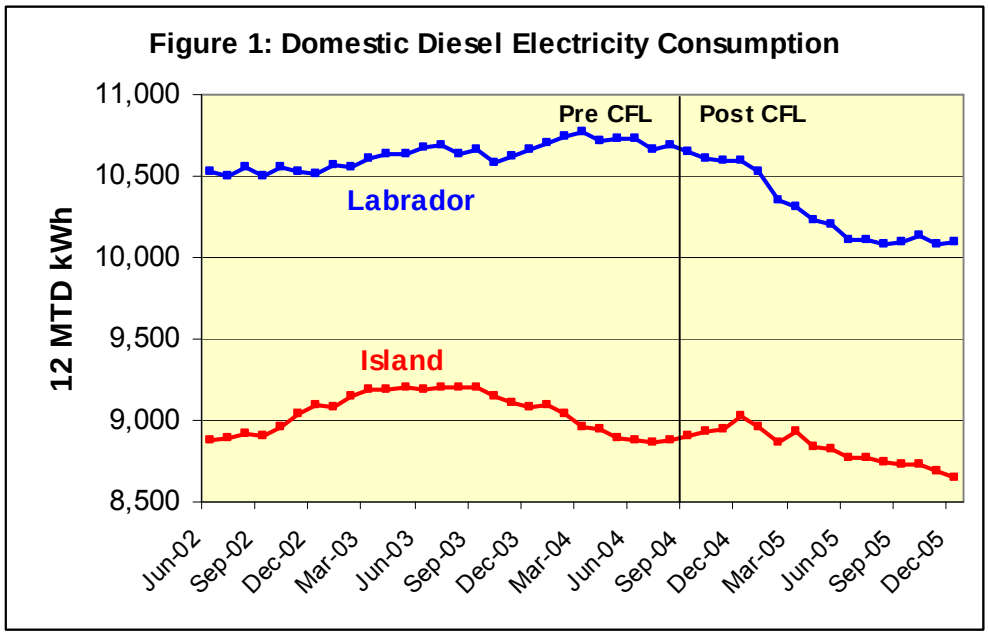
Savings

During the original economic analysis for a Hydro sponsored CFL promotion on its diesel systems, technical estimates of kWh savings were prepared based on the CFL wattage saving over equivalent incandescent lighting and an assumption of annual hours of use for lighting. On average, one CFL was expected to provide Hydro with savings of 56 watts across 1,500 hours per year, for an annual kWh saving of 84 kWhs (or 504 kWhs per home per year for all 6 CFLs). With over 14,000 CFLs now distributed, this technically equates to over one million kWhs of annual production savings on diesel systems. An important question is whether the actual changes in customers' consumption trends supports the technical calculation.

Figure 1 presents the recent trend in the 12 month moving average for domestic average consumption for those domestic diesel accounts receiving CFLs. A structural change in consumption, brought about by the CFL program, would be indicated by a declining consumption trend for up to 12 months following the start of the program[6]. After this period, the underlying trends in consumption would be expected to resume.

[6] Assuming all six CFLs were installed upon receipt. Period of decline can be longer depending on installation sequence.

As lighting is perhaps only 10 to 15 percent of a non-electric heat household's annual consumption, a number of variables can make CFL savings trends less discernable than might otherwise be the case. Variation in the number of heating degree-days from one year to the next can confound any underlying trend in consumption. There are other examples of confounding variables to acknowledge when reviewing the electricity consumption trend. For example, for the time period in question, there have been electricity price increases and changes in the structure of the lifeline. Notwithstanding, Figure 1 provides an indication that Hydro's CFL program has in fact reduced household electricity consumption in line with expectations.



While most CFL coupons were distributed to customers by the fall of 2004, the CFL consumption impacts appear to have a lagged until the end of the year. It may be that the arrival of the higher winter electricity bills triggered a more concerted use of the new CFLs. The survey results indicated there was also some tendency for customers to wait until incandescent lights failed before installing the CFL.

Labrador savings are larger than on the Island and this may well reflect the longer duration of lighting requirements in Labrador and household occupancy patterns. The decline in consumption across Labrador diesel systems is about 550 kWhs, while on the

Island the decline is about 260 kWhs with some further declines apparent. Weighting for customers, the decline in average domestic diesel electricity consumption is about 465 kWhs per year, which compares very favorably to the technical estimate of 500 kWhs. These results appear to be reinforced considering that heating degrees days on some coastal Labrador areas (Mary's Harbour data) were greater in 2005 than in 2004, while on the Island's southern coastal area, heating degree days were about the same for the periods in question.

The overall energy savings associated with Hydro's diesel CFL program are estimated at about 1,000,000 kWhs per year, with an associated fuel saving of 300,000 litres per year

An Update on the Marginal Cost and Revenue Structure of Hydro's Isolated Systems

Since the original CFL proposal was prepared, actual and forecast world oil prices have increased considerably and particularly for key product groups such as distillate fuel. The result is that Hydro's financial loss on domestic sales and preferential general service accounts, just with respect to its short run marginal cost and marginal revenue, is now projected to be substantially higher than originally projected. Such a circumstance increases the cost effectiveness of CFL measures undertaken on diesel systems. In addition, the Board of Commissioners of Public Utilities, in Order No P.U. 14 (2004), approved a seasonal lifeline for domestic diesel customers and this has the effect of slightly lowering marginal revenue relative to the previous rate structure design.

The table below provides Hydro's updated marginal cost (MC) and marginal revenue (MR) for the isolated systems.

Table 4: Isolated Systems Marginal Cost and Marginal Revenue (Weighted $ per kWh)			
	MC	MR	Loss
Labrador	$0.194	$0.088	$0.107
Island	$0.199	$0.085	$0.114
Total	$0.195	$0.087	$0.108

1. MC reflects the Fall 2005 oil price projections and is the average for 2005-2009. Individual diesel systems have been weighted using production data for 2006.
2. MR is a 5-year forecast average based on a seasonal lifeline domestic tariff. Individual diesel systems have been weighted using domestic sales data for 2006.
3. MC includes an allowance for distribution losses.

Hydro's current medium term diesel fuel price forecast translates into an average short run marginal cost projection of about $0.20 per kWh produced. With forecast marginal revenue in the order of $0.09 per kWh, the financial loss with respect to the variable cost for every kWh produced is expected to be approximately ($0.11) per kWh.

An Update on the CFL Program Costs

Hydro's actual incremental CFL program costs have been fully in-line with its original budget of $110,000 with calculated marginal cost of CFL savings of about $0.020 per kWh delivered. This cost is based on all incremental costs paid by Hydro to acquire and deliver bulbs to isolated customers including supplier bulb costs, direct delivery costs and miscellaneous program costs. The energy savings are based on measured results to date across a five-year program evaluation period.

An Update on the DSM Economic Tests for the CFL Program

The standard DSM economic tests have been updated to track the cost-effectiveness of CFL from differing perspectives. As presented in the original CFL proposal, these tests are the Utility Test (UT), the Participant Test (PT), the Rate Impact Measure Test (RIM), and the Total Resource Cost Test (TRC).

Table 3 below summarizes the primary benefits and costs items for these standard DSM tests.

Table 5: Outline of Standard DSM Cost-Effectiveness Tests		
DSM Economic Test	**Benefit**	**Cost**
Utility Test (UT)	Avoided Cost	Incentives Program Costs
Participant Test (PT)	Bill Savings Incentives	Customer Costs
Rate Impact Measure Test (RIM)	Avoided Cost	Incentives Lost Revenue Program Costs
Total Resource Cost Test (TRC)	Avoided Cost	Program Costs Customer Costs

All DSM tests pass a decision criterion where the Net Present Value (NPV) > 0 (which is equivalent to saying that the Benefit-to-Cost ratio exceeds 1.0). The more critical tests are the TRC and RIM test: TRC because it evaluates both customer and utility costs against utility benefits, and RIM because it forces a focus on lost revenue. Any utility action that results in a material failure of the RIM test leads to an increase in the rural deficit. So long as the RIM test is positive, the DSM evaluation indicates that the DSM program is controlling or reducing the subsidy requirements with respect to the conservation impacts of the program.

The updated DSM economic test results for the CFL program are as follows:

Table 6: DSM Test Results For CFL Diesel Program to December 31, 2005[1] For the Evaluation Period 2005 to 2009		
DSM Test	**NPV (2004$)[4,5]**	**Benefit/Cost Ratios**
Utility Test (UT)	$694,000	8.2
Participant Test (PT)[2]	$353,000	5.5
Rate Impact Measure Test (RIM)	$341,000	1.8
Total Resource Cost Test (TRC)[3]	$694,000	8.2

1. Excludes Natuashish at present since Hydro is the operator and not the owner. Also excludes L'Anse au Loup due to its marginal revenue and marginal cost structure.
2. Participant or customer test simply assumes a 100% incentive to illustrate their benefits.
3. UT and TRC will be the same economic test when incentives are equal to customer costs.
4. Uninstalled CFL and CFL in inventory are installed from 2006 to 2009.
5. Utility benefits have been reduced by 3 percent per year to allow for malfunction/breakage.

The TRC test continues to indicate and measure that there is a material economic benefit associated with Hydro's broad CFL program across the diesel systems. In essence, for an investment of about $100,000 net savings approaching $700,000 in 2004 dollars are realized.

Hydro can expect to achieve a large net savings in diesel fuel consumption and expense. Likewise, CFL provides customers with material benefits associated with electricity bill savings. From the perspective of the rural deficit, the RIM Test passes in an unambiguous manner. This implies that on the margin the revenue loss associated with the proposed CFL program for the isolated systems does not increase the incremental subsidy to Newfoundland Power. Hydro's CFL program, in fact, reduces the rural subsidy below what it otherwise would be. The CFL program benefits have been calculated to be conservative since no environmental or external benefits are monetized, theoretical delays to various capital or maintenance requirements are not credited to CFL, and the benefit decay rate is taken at 3 percent annually.

Risk Considerations

The changes in expected and actual fuel prices since the original CFL proposal was prepared have served to strengthen the economics of undertaking the CFL initiative in the first place. Actual experience with the delivery side of the CFL program has enabled Hydro to incorporate adjustments into its economic analysis to reflect installation rates and CFL malfunction.

Activities for 2006

So long as Hydro's short run marginal cost materially exceeds its marginal revenue on isolated diesel systems, a CFL program should continue to be sponsored by Hydro. The program benefits Hydro, its diesel customers, and Newfoundland Power.

During 2006 Hydro will continue to distribute CFL from inventory to new domestic accounts and aim to increase participation by applicable non-domestic accounts. Market prices for diesel fuel will be closely monitored as future increases in prices could justify a more general promotion of CFL to diesel general service accounts. Hydro would also expect to complete a brief evaluation update at the end of 2006.