GUELPH HYDRO ELECTRIC SYSTEMS INC. – RP-2004-0203\EB-2005-0203 CONSERVATION AND DEMANDANNUAL REPORT 2005

March 30, 2006

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1. Introduction

1.1. Amalgamation

On February 21, 2006, the Ontario Energy Board (OEB) issued a Decision and Order granting leave for Guelph Hydro Electric Systems Inc. (GHESI) and Wellington Electric Distribution Company (WEDCO) to amalgamate. The 2005 Conservation and Demand Annual Report for GHESI has been provided below, however beginning with the 2006 C&DM Annual Report, all results will be amalgamated and reported by GHESI.

1.2. 2005 Objectives

The ultimate goal of Guelph Hydro Electric Systems Inc's (GHESI) Conservation and Demand Management Plan is to create a "conservation culture" through sustained behavioural change in all of its customers.

This goal is aligned with its vision,

> "Delivering sustainability through innovative energy solutions and the most energy efficient customers",

And also the vision of GHESI's parent company, Guelph Hydro Inc.,

> "Powering community well-being and environmental stewardship with energy and information solutions".

GHESI's objective is to provide an array of C&DM programs over a broad cross-section of its customer base to learn more about the relative strengths and weaknesses of various approaches to stimulate a conservation culture locally. The C&DM funded incentives in 2005 were applied to diverse programs ranging from Educational programs targeting local grade 8 students to Technological Demonstration Programs such as a geothermal installation.

Overall, the approach was to encourage and stimulate a conservation culture while evaluating the cost effectiveness of various methods of achieving this goal. The learning around the cost effectiveness of various energy conservation and demand management initiatives will assist GHESI in planning future programs.

1.3. Measurement

Whenever possible, GHESI used actual measured energy savings. Where the measurement of actual energy savings was a challenge to obtain, GHESI used the measurements provided by the Ontario Energy Board (OEB) in the TRC Guidelines.

When a program or sub-program does not have measurable results, GHESI has provided as much tracking information as possible to support the success of the educational component of the programs.

1.4. Discount Rate

The Net Present Value (NPV) discount rate used in the TRC analysis is 7.63% which is equal to 50% of the rate of return on deemed equity and 50% of the debt rate.

2. Evaluation of the C&DM Plan

C&DM Program Evaluation

GHESI's C&DM Plan was evaluated by following the OEB Total Resource Cost (TRC) Guide of October 14, 2005. A TRC analysis was done at each sub-program level. The sub-programs were then rolled up to the program level. Another TRC was performed at the program level. Similarly, the programs were rolled up at the entire portfolio level and a TRC was performed.

2.1. 2005 TRC Results at the Portfolio Level

For 2005, the TRC analysis at the Portfolio level is shown in Table 1. This analysis covered the six C&DM programs that were started in 2005. They are Education and Promotion Programs, Low Income programs, City Leadership Programs, Metering Pilot Program, Air Conditioning Replacement Program and Technology, Research and Demonstration Programs. These programs are shown in Table 1.

While some costs have been reported under some programs in 2005, the benefits of these programs are only expected to become evident in 2006. For example, energy reductions are expected in 2006 relating to the Metering Pilot Program, and the Geothermal and Solar Hot Water subprograms under Technology, Research and Demonstration. Similarly, the benefits of one Low Income sub-program, Willow Place audit, are also expected in 2006.

The benefit to cost ratio for the active C&DM portfolio, with benefits in 2005, is 1.86. The Net TRC value is $752,406. The 2005 C&DM expenditure for the six active programs as shown in Table 2 on the following page is $250,804. The total electricity saved over the life cycle of the program is 2,421,744 kilowatt-hours. All the C&DM programs are primarily of the energy conservation type. The energy expenditure is $0.01 per kWh saved over the life cycle. If only the demand reduction is considered without considering the benefits of energy saved, the C&DM expenditure for demand reduction is $1,118 per kW reduced.

Table 1: 2005 TRC Analysis

	Portfolio	Program					
	Total	Education & Promotion	Low Income	City Leadership	Metering Pilot	Tech & Research	Air Conditioner Replace.
Net TRC value ($):	$752,406	$175,793	$72,273	$174,589	To be Determined	$333,145	-$3,395
Benefit to cost ratio:	1.86	3.80	12.36	1.35	To be Determined	2.11	0.53
Number of participants or units delivered:	11,365	7,405	3,433	97	213	190	27
Total KWh to be saved over the lifecycle of the plan (kWh):	24,314,953	5,181,986	1,347,604	6,732,960	To be Determined	11,001,967	50,436
Total in year kWh saved (kWh):	2,421,744	857,246	336,901	673,296	To be Determined	550,098	4,203
Total peak demand saved (kW):	224	35	0	77	To be Determined	108	4
Total kWh saved as a percentage of total kWh delivered (%):	0.1488%	0.0527%	0.0207%	0.0414%	To be Determined	0.0338%	0.0003%
Peak kW saved as a percentage of LDC peak kW load (%):	0.0803%	0.0124%	0.0000%	0.0275%	To be Determined	0.0388%	0.0015%
Gross in year C&DM expenditures ($):	$250,804	$78,752	$21,486	$41,655	$56,153	$45,309	$7,446
Expenditures per KWh saved ($/kWh):*	$0.0103	$0.0152	$0.0159	$0.0062	To be Determined	$0.0041	$0.1476
*Expenditures per KW saved ($/kW)**:*	$1,118	$2,264	$0	$542	To be Determined	$418	$1,752

Utility discount rate (%):	7.63%

TRC Benefit	1,624,328	$238,486	$78,633	$668,911	To be Determined	$634,455	$3,843
TRC Cost	871,922	$62,693	$6,360	$494,322	To be Determined	$301,309	$7,238

Program Analysis

The Low Income Program has the highest benefit to cost ratio of 12.36 with a cost to GHESI of 1.59 cents per kWh saved. The Education & Promotion program has a benefit to cost ratio of 3.80 with a cost to GHESI of 1.52 cents per kWh saved.

For the Technology, Research and Demonstration Programs, the benefit to cost ratio is estimated to be 2.11 and it cost GHESI 0.41 cents per estimated kWh saved. We can only estimate as the benefit of this program is not yet operational.

The most expensive C&DM program in 2005 was the Air Conditioner Replacement Program. The benefit to cost ratio was 0.53 and it cost GHESI 14.76 cents per kWh saved.

For the metering pilot, GHESI intends to compare customer electricity consumption following the installation of the smart meters with historical consumption prior to the pilot project. It is unclear that Smart Meters on their own will incent energy users to become more energy efficient, but GHESI expects that Smart Meters in conjunction with the new rate plan and load management devices will encourage customers to reduce and / or shift their energy consumption. TRC analysis will be performed around Q4 of 2006. Although the TRC benefits have not been included in the analysis, the CDM expenditure of $56,153 is included in the total CDM expenditure at the portfolio level.

2.2. GHESI Budget and Costs

The actual 2005 expenditures for the six active programs are shown in Table 2.

Table 2: 2005 Active C&DM Programs

	Program Name	Budget GHESI Capital	Budget GHESI Operating	Budget Total	GHESI Capital Expenditure	GHESI Operating Expenditure	2005 GHESI Total Expenditure
1	Education & Promotion		$141,560	$141,560		$78,752	$78,752
2	Low Income		$150,000	$150,000		$21,486	$21,486
3	City Leadership-LED Lighting		$100,000	$100,000		$41,655	$41,655
4	Metering Pilot	$50,000	$25,000	$75,000	$54,902	$1,251	$56,153
5	Tech. & Research	$60,000	$15,000	$75,000	$40,000	$5,309	$45,309
6	Air Conditioning		$10,000	$10,000		$7,446	$7,446
	Total	**$110,000**	**$441,560**	**$551,560**	**$94,902**	**$155,898**	**$250,804***

* Table adds to $250,801, but due to rounding is $250,804

Four programs had C&DM expenditures during 2005 for project planning and research, but were not active during 2005. The breakdown of these programs is shown in Table 3 on the following page.

Table 3: 2005 C&DM Funding Expenditures for Planning and Research

	Program Name	Budget GHESI Capital	Budget GHESI Operating	Budget Total	2005 GHESI Operating Expenditure
7	Distributed Energy	$ 85,000	$ 45,000	$ 130,000	$ 5,458
8	City Leadership – Building Retrofit		$ 50,000	$ 50,000	$ 115
9	Load Control	$120,000	$ 30,000	$ 150,000	$ 1,775
	Total	$205,000	$125,000	$ 330,000	$ 7,348

Four programs had C&DM budgets, but no capital or operating expenditures during 2005. These programs are summarized in Table 4 below.

Table 4: C&DM Budgeted Programs with No Expenditures in 2005

	Program Name	Budget GHESI Capital	Budget GHESI Operating	Budget Total
10	City Leadership - Water Treatment		$ 25,000	$25,000
11	System Optimization	$ 90,000	$ 10,000	$100,000
12	Power Factor Correction		$ 50,000	$50,000
13	Builder Partnership		$100,000	$100,000
	Total	$ 90,000	$185,000	$275,000

3. Discussions of Programs

3.1. Education and Promotion Programs

An overview of GHESI's Education and Promotion Program is provided below along with the C&DM Budget expenditures and TRC Results at the Program level. An overview, a description of the actions taken, and a discussion of the applicable Sub-Program TRC results have been provided for each of the ten Education and Promotion Sub-Programs.

Overview

The Education and Promotion Program has the primary role of encouraging a sustainable conservation culture in the Guelph community. There were 10 Education and Promotion subprograms in 2005, running at regular intervals throughout the year, to keep the message of conservation "alive" and reach as many different types of audiences as possible: residential customers, industrial customers, the business community, students, employers and employees.

Alternate methods of tracking have been provided for sub-programs with no measurable conservation impact. However, some of these sub-programs had components that were measurable, even when they were designed primarily as educational or promotional vehicles. In these cases, a TRC analysis was completed comparing the entire program costs to the energy savings resulting from the measurable component(s).

C&DM Budget Expenditures

The Education and Promotion Program has a C&DM budget of $141,560 for the three-year period 2005 to 2007. The strategy was to spend a significant amount of these funds in the first year to generate community awareness in the beginning. GHESI spent $78,752 or 56% of these funds in the first year, 2005. The objective was to keep the conservation message "alive" throughout the year, by having different sub-programs at regular intervals for different audiences. This strategy also allowed for a broader range of types of sub-programs to learn the best or most effective ways to encourage conservation and demand management. During 2006 and 2007, GHESI intends to focus the remaining budget amounts on sub-programs that were effective in achieving the goals of this Program.

TRC Results

The Education and Promotion program had program level costs totaling $1,021. This cost included the program's prorated share of external costs, legal fees related to the required C&DM program filing affidavit, the costs of posting notice in the Record regarding the availability of the C&DM for public review as well as an adjustment to remove $213 that was not reported in the 4th quarter 2005 C&DM report on expenditures. GHESI had estimated and accrued for expected costs in the 4th quarter report, but the accrual was less than actual expenditures by $213. This $213 was included in the TRC in order to capture the actual utility costs as reported by SeeLine in their TRC analysis of the Enerconnect Coupon sub-program.

In addition, the Energy Wheel sub-program shows that $109.94 was spent by WEDCO on energy wheels for the Seasonal basket-Energy Elves sub-program. This amount was not allocated to WEDCO in 2005 and a 1st quarter adjustment will be made to correct

this allocation problem. For this report, the $109.94 remains in the GHESI Education and Promotion Program expenditures.

For the first three quarters of 2005, GHESI reported internal staff costs as part of their C&DM budget expenditures based on advice from Ontario Energy Board (OEB) staff. The total expenditures reported were $11,772.52. These costs have been shared equally over the ten sub-programs in the Education and Promotion Program causing the sub-programs to have lower TRC values than if these costs had been excluded. Beginning with the fourth quarter of 2005, internal staff time stopped being reported based on further advice from the OEB.

The Education and Promotion program level TRC shows a Net TRC Value of $175,793 and a benefit to cost ratio of 3.80. In addition, the expenditures per kWh saved were $0.015. Overall, the Education and Promotion program was very successful in terms of the increased participation and awareness by customers and in terms of the relatively low cost per kWh saved through this program.

Regardless of the success of this program in 2005, GHESI may not continue with all of the programs or in exactly the same manner in 2006.

3.1.1. College Royale

Overview

College Royale is an annual exhibition at the University of Guelph. GHESI partnered with SelectPower to deliver this sub-program in order to keep C&DM costs as low as possible.

Description of Actions Taken

In order to educate customers and promote a conservation culture, GHESI handed out 1 Energy Kit per household visiting the booth. Each kit contained one 13 Watt CFL (to replace a 60 watt incandescent bulb), a Ministry of Energy "Conserve Energy and Save Money" pamphlet, and a One-Tonne Challenge pamphlet. The booth also promoted alternate forms of green energy, such as wind and solar. A total of 147 Energy Kits were handed out to attendees demonstrating the high interest and success of this program.

TRC Results

A TRC analysis was completed for the entire sub-program comparing the total costs to the energy savings generated by the 13 Watt CFLs handed out. It was assumed that 10% of these participants were free riders. The results of the analysis show a net TRC

benefit of $1,309 and a benefit to cost ratio of 1.64. The expenditures per kWh saved were $0.038..

3.1.2. C&DM Memberships and Workshops

Overview

Costs for memberships in associations and attendance at workshops related to C&DM are included in this sub-program. GHESI's goal is to ensure partnerships can be utilized whenever possible to reduce costs and to increase opportunities for C&DM measures. Another goal is to ensure staff has sufficient opportunity to learn from others C&DM experiences.

Description of Actions Taken

GHESI joined the Canadian Energy Efficiency Alliance in 2005 which led to GHESI's involvement in the Switch to Cold campaign. In addition, GHESI C&DM staff attended an Ontario Energy Association workshop related to C&DM in 2005.

TRC Results

There was no TRC completed for this sub-program since there were no measurable benefits. However, the total C&DM expenditures of $2,775 were included in the Education and Promotion program level TRC analysis.

3.1.3. Enerconnect Coupon Program

Overview

Enerconnect negotiated a coupon program for member LDCs that provided discounts on energy efficient merchandise at Canadian Tire stores. The program was administered by Energyshop and the TRC analysis was completed by SeeLine Group Inc. A total of 32 LDCs participated in this program including GHESI. Samples of the coupons and advertisements are attached to this report as Appendix D.

Additional Purchases of Compact Fluorescent Lights (CFLs) and Seasonal LEDs (SLEDs)

The following information on Free Drivership was provided by Energyshop/SeeLine Group Inc.

There is considerable evidence that the purchase of CFLs and SLEDs caused by the program was considerably higher than coupons redeemed. This is often referred to as Free Drivership and is the philosophical opposite of Free Ridership. CDM results are

discounted by 10% for Free Riders; customers who had planned to buy the product making the discount coupon unnecessary. Free Drivership accounts for customers the program influenced to purchase a product, and in fact bought more products than coupons redeemed, or purchased without a coupon.

This effect is seen in the 2005 Lighten Your Electricity Bill program, but has not been quantified. The OEB has not yet ruled on the acceptability of Free Drivership, and as such this was not included in our calculated savings numbers. However, it is important to recognize Free Drivership as a valid indicator of CDM program success in the development of the conservation culture in Ontario.

Program coupons redeemed at Canadian Tire stores:

CFLs	51,875
SLEDs	51,605

Canadian Tire Year over Year Sales Increase – Oct 1 to Dec 31 – 2005 versus 2004:

CFLs	125,820
SLEDs	248,898

Post program market research results. Average number of packages purchased when using a coupon:

CFLs	4.1 packages
SLEDs	3.4 packages

These averages are supported by a review of a sample of sales receipts submitted by Canadian Tire stores when redeeming coupons.

The result of the above shows the impact of this program in addition to the coupons redeemed.

Description of Actions Taken

The coupon package offered discounts on CFLs, LED Seasonal Lights, Programmable Thermostats, Light and Appliance Timers, and Ceiling Fans. GHESI advertised the program using newspaper advertisements. The newspaper circulation numbers and advertisement frequency have been provided in Table 5 below. The coupons were distributed via bill inserts to all customers but targeted GHESI's 40,150 residential customers. In terms of success factors, the final results exceeded expectations resulting in even more energy efficient technology being put into place by customers.

Table 5: Newspaper Advertisement Circulation

Newspaper	Circulation	Ad Frequency
Tribune	40,000 – Tuesdays 45,000 – Fridays	4 issues in October 2005
Guelph Mercury	55,792	4 issues in October 2005
La Guida (Italian paper)	6,000-7,000	October Issue

TRC Results

The following summary is based on the TRC analysis of GHESI's results as prepared by SeeLine Group Inc. included as Appendix C. The total TRC Net Benefit for all the products purchased using the GHESI supplied coupons was $161,105 for a TRC benefit to cost ratio of 5.49 after taking into consideration the advertising costs incurred by GHESI related to this sub-program. The expenditures per kWh saved were $0.007.

3.1.4. Energy Wheels

Overview

Energy Wheels are educational materials provided to customers through various sub-programs in the GHESI portfolio. GHESI's goal was to promote energy efficient behaviour to customers and the energy wheels provide information on how to conserve and save electricity. A total of 5,000 energy wheels were purchased.

Description of Actions Taken

- There were 664 energy wheels handed out to interested students at Career Pathways in 2005. Career Pathways is a one day career exposition held by various employers in the Guelph area. In 2005, 1600 local Grade 8 students attended Career Pathways. GHESI had a booth at the event which included an interactive display on how energy is saved from a CFL. The high interest rate (664 handouts out of a possible 1,600 attendees, or 41.5% of all attendees) demonstrates the value placed on the energy wheels.
- 3,433 energy wheels were provided to GHESI customers through the Seasonal Baskets – Energy Elves Low Income subprogram described in section 3.2.1 below.
- In addition, 100 energy wheels were provided to WEDCO customers through the Seasonal Baskets – Energy Elves Low Income subprogram. The prorated cost of these energy wheels ($109.94) should have been removed from the GHESI expenditures and placed into WEDCO's, however they were overlooked. An adjustment to the expenditures will be completed in the Q1 2006 reports to correct this allocation.
- The remaining energy wheels will be distributed to customers during 2006.

TRC Results

There was no TRC completed for this sub-program since there were no measurable benefits. However, the total C&DM expenditures of $6,580 were included in the Education and Promotion program level TRC analysis.

3.1.5. Guelph Partnerships for Innovation

Overview

Guelph Partnerships for Innovation (GPI) is a consortium of life science stakeholders with the vision of making Guelph one of the top five life science centres in North America. Their mandate is to coordinate information sharing among life science and agri-food companies in Guelph and area while fostering the development of Guelph as a leading centre for life science and agri-food research, development and commercialization through advocacy, education and communication. The goal of this sub-program was to educate Guelph Partnerships for Innovation members and the local business community about the need for Conservation and Demand Management.

Description of Actions Taken

GHESI representatives spoke at a GPI breakfast about conservation and demand management. The presentation has been attached in Appendix E. There were 126 attendees at this educational session.

TRC Results

There was no TRC completed for this sub-program since there were no measurable benefits. However, the total C&DM expenditures of $2,054 were included in the Education and Promotion program level TRC analysis.

3.1.6. Guelph Environmental Leadership

Overview

This program was a partnership with Guelph Environmental Leadership (GEL), a local public interest group, who were selling tickets for a SMART car, and other environmental or energy gifts.

Description of Actions Taken

A booth was set up by GEL at different Guelph employer locations between July 18-29, 2005 and the GHESI C&DM program provided fifty 13 Watt CFLs as an incentive to the first 50 people to buy tickets. In addition, flyers were also handed out by GEL with

energy tips relating to how to stay cool in the summer, promoting the Switch and Save Air Conditioner Replacement program.

TRC Results

A TRC analysis was completed for the sub-program comparing the total costs to the energy savings generated by the fifty 13 Watt CFLs provided to GEL. It was assumed that that 10% of these participants would be free riders. The results of the analysis show a net TRC benefit of $-122 and a benefit to cost ratio of 0.90. The TRC results for this sub-program were heavily influenced by the allocation of the high fixed costs related to the first through third quarter 2005 internal costs. These high fixed costs also affected the expenditures per kWh which came in at $0.069.

3.1.7. Rotary Club

Overview

This program was implemented to educate members of the Rotary Club (Wellington South) on the importance of Conservation and Demand Management in Guelph and Ontario.

Description of Actions Taken

One 13 Watt CFL was given to each of the 7 winners of the GHESI energy quiz. Each of the 15 attendees received a package containing a flyer with energy tips relating to how to stay cool in the summer, promoting the Switch and Save Air Conditioner Replacement program, a Switch to Cold water washing coupon, a set of Canadian Tire Lighten your Electricity Bill coupons, and a copy of the Guelph Tribune, June 24th, 2005 article on the University Of Guelph's proposal to mid-size companies in manufacturing and service sectors to improve the bottom line by reducing waste chemicals, water and energy. Attendees were surveyed on what behaviours they would change. The attendees were asked to complete a survey to determine if any of their behaviours had been influenced by the GHESI presentation. Four attendees returned the survey and said that they would change behaviours relating to cold water washing, CFLs, turning down the heat and water heating, setting the air conditioner higher, turning off lights and computers, using programmable thermostats, switching to seasonal LED lights, installing insulation, and asking stores to turn down air conditioners.

TRC Results

A TRC analysis was completed for the sub-program comparing the total costs to the energy savings generated by the 13 Watt CFLs given to the winners of the GHESI energy quiz. It was assumed that 10% of these participants would be free riders. The

results of the analysis show a net TRC benefit of $-1,030 and a benefit to cost ratio of 0.13. The TRC results for this sub-program were heavily influenced by the allocation of the fixed costs related to the first through third quarter 2005 internal costs. With these fixed costs being spread over such a small number of CFLs, the expenditures per kWh saved were $0.438.

3.1.8. Seasonal Light Exchange

Overview

During the winter of 2004/05, GHESI offered a seasonal LED (SLED) light exchange program to their customers in order to encourage conservation through energy efficiency measures.

Description of Actions Taken

GHESI arranged for lights to be exchanged at the Stone Road Mall one weekend for customers and at their Dawson Road office location for an entire week for employees. A total of 800 people exchanged their C-7 lights for free LED lights even though many of these people had to wait in line at the mall to do so. Overall, the program was very successful and resulted in higher efficiency technology being utilized that led to energy savings.

GHESI sent out a media release which resulted in substantial media interest. Table 6 below outlines the media interest and approximate reach used to promote this sub-program. In addition, the CBC radio morning show interviewed Jim MacKenzie, GHESI President and CEO, the week of December 7, 2004 and the show aired in Manitoba.

Table 6: SLED Exchange Advertising

Media	Reach	Details
TV – Rogers	50,000	December 7-14, 2004
TV – CKCO (CTV): Waterloo Region	549,000	December 5, 2004
TV – CHCH: Hamilton and Region	600,000 (est.)	December 3 & 6, 2004
On-line – Natural Resources Canada newsletter	Unknown	January 2005 issue

TRC Results

The net TRC benefit for this sub-program was $2,636 resulting in a benefit to cost ratio of 1.24. The TRC analysis for this sub-program demonstrates that there is a CD&M benefit to encouraging customers to use seasonal LEDs rather than the older technologies. The expenditures per kWh saved were $0.057 due to the full cost of the LED lights being allocated to the C&DM budget for this sub-program as well as the costs of hiring a 3rd party to deliver the program.

3.1.9. Switch to Cold

Overview

This program was a partnership arrangement between the Canadian Energy Efficiency Alliance, Proctor & Gamble and Ontario LDCs including GHESI. The objective was to encourage cold water washing as an alternative to hot water washing.

Description of Actions Taken

The coupons were valid until February 28, 2006, so the final tallies were not available in time for this report. GHESI has assumed the more conservative estimate of coupon redemption level of 2% for this report. While GHESI had to pay for the production of the coupons, Proctor & Gamble is providing the actual product incentive ($1 off a container of Tide Cold Water). The advertising methods used to encourage participation in this sub-program are detailed in Table 7 below. In addition, GHESI issued a media release which resulted in a very positive article on washing in cold water in the Guelph Mercury. Copies of this material have been provided in Appendix F for your reference.

Table 7: Switch to Cold Advertising

Advertising Method	Circulation	Ad Frequency
Tribune (newspaper)	40,000 – Tuesdays 45,000 – Fridays	September 30, October 4 and 7 issues
Guelph Mercury (newspaper)	55,792	October 1 and 6 issues
MAGIC FM (radio)		20 spots of 30 seconds from September 29 to October 9
Radio FCCume	53,044	
Radio Ctrl Cume	28,842	

TRC Results

The net TRC benefit for this sub-program was $11,894 and resulted in a benefit to cost ratio of 2.06. In addition, the expenditure per kWh saved was $0.014. The TRC analysis for this sub-program demonstrates that there is a CD&M benefit to encouraging customers to use cold water rather than hot water for their laundry.

3.1.10. VIP Training

Overview

The VIP Training sub-program was created to determine the benefits of providing a one-day energy management workshop to industrial/commercial customers.

Description of Actions Taken

The pilot was completed with two industrial/commercial customers - Barber Glass and SiHi Pumps. The training session was completed on April 8, 2005. Both customers provided excellent feedback in terms of the value they found from the session. Initial surveys suggested that both customers could envision implementing energy conservation or demand management programs in their facilities. Follow up is being carried out in 2006 to determine if any changes have been planned or implemented.

TRC Results

There was no TRC completed for this sub-program since there were no measurable benefits. However, the total C&DM expenditures of $3,359 were included in the Education and Promotion program level TRC analysis. GHESI plans to recommend this type of training to other industrial/commercial customers.

3.2. Low Income Programs

The Low Income Program addresses the needs of some of the residents in Guelph. The two sub-programs identified and undertaken in 2005 were the Seasonal Hamper and Willow Place sub-programs.

The Low Income program had program level costs totaling $7,464. This cost included the program's prorated share of external costs as well as $6,213 that represents CFLs in inventory at December 31, 2005. These CFLs were purchased in bulk to save on a per unit basis and GHESI expects to use the remainder during 2006.

The Net TRC Value was $72,273 with a benefit to cost ratio of 12.36 and expenditures per kWh saved of $0.016. These results were due in large part to the Seasonal Hamper sub-program results.

3.2.1. Seasonal Baskets – Energy Elves

In order to assist low income customers reduce their energy needs and costs, GHESI employees volunteered their time after hours to produce the baskets for charity and employee's children of high-school age also volunteered using the hours towards their high-school volunteering requirement. The baskets were created and donated to promote energy saving behaviours and ideas to low income customers. Seasonal baskets consisted of one 13 Watt CFL, the brochure "Educational Tips on How to Conserve Energy", one Switch to Cold Tide coupon, and one set of Lighten Your Electricity Bill coupons. Rogers TV was at the location filming the 'Energy Elves in action" and the Tribune newspaper attended as well. Articles appeared in the Mercury and Tribune. The baskets were distributed as follows:

- 950 baskets went to the Salvation Army, Guelph,
- 260 baskets went to St. Vincent de Paul, Guelph,
- 2223 baskets went to the Food Bank, Guelph.
- Total = 3,433 baskets distributed.

A TRC analysis was completed for the sub-program comparing the total costs to the energy savings generated by the 13 Watt CFLs provided in the baskets. Like with the Education and Promotion sub-programs, it was assumed that 10% of these participants would be free riders. The results of the analysis show a net TRC benefit of $72,273, a benefit to cost ratio of 12.36 and expenditures per kWh saved of $0.007.

3.2.2. Washer Dryer Replacement

The Washer Dryer Replacement sub-program was not initiated in 2005, but did incur some research and development costs during the year. Therefore, there was no TRC completed for this sub-program. However, the total C&DM expenditures of $192 were included in the Low Income program level TRC analysis. GHESI plans to provide a TRC in the 2006 Annual CDM report for this sub-program.

3.2.3. Willow Place Pilot

The Willow Place pilot was part of an initiative with the Social Housing Services Corporation (SHSC) which has undertaken audits of over 50 social housing providers, across Ontario, representing over 6000 units, to estimate energy use and identify opportunities for reducing energy use. These audits were part of a pilot program, which is now entering its second stage – implementation of energy efficiency measures. Through the audits, opportunities for energy reductions have been identified, and SHSC is prepared to coordinate interaction between LDCs and social housing providers. SHSC has identified needs of social housing providers that include:

- Educational resources for both residents and providers
- Direct installation of some energy efficiency measures
- Cash incentives for implementing certain other measures
- Access to financing at preferred rates for measures not fully covered by the cash incentives.

The audit in Guelph was conducted at Willow Place. There are 83 units in Willow Place and audits were completed at a cost of $50/unit in October 2005. As a result of the audits, a wide range of potential energy saving actions was identified. These include:

1. Refrigerators are replaced when they break down, and replacement units are not guaranteed to be Energy star units. On average they replace 4 per year, and this will increase with time as they are about 15 years old.
2. Replacing stoves.
3. Changing Exit signs to LED signs (on a per sign basis).
4. Lighting retrofits in common areas. Retrofit 28 4 ft - T8 fluorescents with T8 lamps.
5. Lighting retrofits in each unit. Replace "chandelier" fixture which has 5-60W bulbs in living area with an energy efficient light fixture and/or fan/energy fixture. Replace 4-60 W fixtures in bathroom with more energy efficient light fixture.
6. Motion sensors in common areas would save electricity during unoccupied times. A total of 7 units could be installed in common areas. All have T12 fluorescent lamps that are switch controlled. Motion sensors in garage (currently have light sensors which are on all the time as it's always dark in the garage).
7. Outdoor motion sensors.
8. Computers are left on all the time, as the power bar in built into furniture.
9. Conversion of existing electric heat cable snow melting to gas snow melting.
10. Researching the possibility of a solar wall.
11. Approximately 50% of the units have window air conditioners.
12. Weather stripping of exterior doors.

The most effective actions will be identified using TRC analysis. It is expected that these measures will occur in 2006.

For 2005, no TRC was completed for this sub-program. However, the total C&DM expenditures of $4,331 were included in the Low Income program level TRC analysis.

3.3. Air Conditioner Replacement Program.

The Air Conditioner Program had a single sub-program in 2005, the Switch and Save sub-program detailed below.

3.3.1. Switch and Save

Under this program, GHESI paid people to switch out their old window air conditioners. A new window air conditioner is forecast to use 30 to 70% less electricity. To qualify, any Guelph resident could bring in their old (but still functioning) window air conditioner and GHESI would give that resident $40 toward a horizontal 7000 BTU model or $50 toward a horizontal 10,200 BTU model. For this program, 27 old air conditioning units were exchanged. In their place, seventeen 7000 BTU units were purchased with a $40 per unit incentive and ten 10,200 BTU units were sold with a $50 per unit incentive provided. Program promotion costs incurred were $5,799.

The TRC benefits for those air conditioning units replaced is $3,843. The TRC cost is $7,238 and the benefit to cost ratio is 0.53. The net TRC value is -$3,395. The overall negative net TRC results are due to the relatively low participation rate. The TRC analysis shows an average TRC benefit of $142 per air conditioner switched. In order to reach the breakeven point of TRC cost at $7,238, 51 air conditioners needed to be exchanged. This program needed another 24 air conditioners exchange to break even.

GHESI distributed a Switch and Save flyer as a bill insert. The flyer provided tips on how to stay cool in the summer. The flyer, attached in Appendix G, was also used as an advertisement in the Guelph Tribune on June 10, 14, 17, 21 and 24 of 2005. The awareness created will hopefully lead to more homeowners replacing old units in the future. The details of the TRC analysis are shown in Table 8 below.

Table 8: Switch and Save Sub-Program TRC Results

	Switch and Save
Net TRC value ($):	-$3,395
Benefit to cost ratio:	0.53
Number of participants or units delivered:	27
Total KWh to be saved over the lifecycle of the plan (kWh):	50,436
Total in year kWh saved (kWh):	4,203
Total peak demand saved (kW):	4.25
Total kWh saved as a percentage of total kWh delivered (%):	0.0003%
Peak kW saved as a percentage of LDC peak kW load (%):	0.0015%
Gross in year C&DM expenditures ($):	$7,446
Expenditures per KWh saved ($/kWh):*	$0.15
*Expenditures per KW saved ($/kW)**:*	$1,752
TRC Benefit	$3,843.30
TRC Cost	$7,237.89

3.4. City Leadership Programs

3.4.1. LED Traffic Lights

The project involved the replacement of incandescent bulbs with LED lights at 81 City Traffic Signals locations and 21 City Traffic Signal Cross Walk locations. A total of 113 signaled intersections and 38 traffic signal/crosswalk locations exist within Guelph City limits. The City worked on intersection traffic lighting upgrades through the fall of 2005. As of December 31, 2005, approximately 95% of Traffic Signaled intersections and Traffic Signal X-Walks were upgraded to LED. The balance of the signals will be replaced in 2006. The 7 to 10 year lifespan of the LED traffic signal head compares favourably to the 6 month lifespan of the incandescent bulb. The projection of ultimate kWh savings per signal as follows. For traffic signals, the current usage is 857 kWh per month. The future usage is expected to be 173 kWh for a 684 kWh savings per signal per month. For crosswalks, the current usage is 253 kWh and the expected future usage is 81 kWh for a savings of 172 kWh per signal per month. The City expects to realize annual maintenance savings of $23,300 starting in 2006.

The City Traffic Light Program has a TRC benefit to cost ratio of 1.35 and a net TRC value of $174,589. It cost GHESI $0.006 per kWh saved. This is because the City paid for the equipment and installation costs and GHESI provided an incentive of $40,000 to the City to pursue the conversion. The summary of the TRC analysis are shown in Table 9 below. The details of the TRC analysis are shown in Appendix H.

Table 9: LED Traffic Lights TRC Results

	LED Traffic Lights
Net TRC value ($):	$174,589
Benefit to cost ratio:	1.35
Number of participants or units delivered:	97
Total KWh to be saved over the lifecycle of the plan (kWh):	6,732,960
Total in year kWh saved (kWh):	673,296
Total peak demand saved (kW):	77
Total kWh saved as a percentage of total kWh delivered (%):	0.0414%
Peak kW saved as a percentage of LDC peak kW load (%):	0.0275%
Gross in year C&DM expenditures ($):	$41,655
Expenditures per KWh saved ($/kWh):*	$0.0062
*Expenditures per KW saved ($/kW)**:*	$542
TRC Benefit	$668,911
TRC Cost	$494,322

3.5. Technology, Research and Demonstration Programs

There are two Demonstration subprograms:

- The Vacuum tube solar system for domestic hot water, and
- Geothermal heating for commercial building.

3.5.1. Solar Hot Water

This project will use solar vacuum tube system for the domestic hot water of the new office building of GHESI. This system will be installed in 2006. The TRC analysis is shown in Table 10 below. The benefit to cost ratio is 0.16. The net TRC value is -$24,733. The main reason of the low benefit to cost ratio is due to the low hot water consumption. There are 95 staff members and assuming 0.6 gallon of hot water per person per day, the total hot water requirement per year is 20,805 gallons. The water and gas consumption is shown in Table 11 on the following page. The details of the TRC analysis are shown in Appendix I.

Table 10: TRC Results for Solar Hot Water

	Solar Hot Water
Net TRC value ($):	-$24,733
Benefit to cost ratio:	0.16
Number of participants or units delivered:	95
Total KWh to be saved over the lifecycle of the plan (kWh):	96,287
Total in year kWh saved (kWh):	4,814
Total peak demand saved (kW):	1.6
Total kWh saved as a percentage of total kWh delivered (%):	0.0003%
Peak kW saved as a percentage of LDC peak kW load (%):	0.0006%
Gross in year C&DM expenditures ($):	$3,282.00
Expenditures per KWh saved ($/kWh):*	$0.034
*Expenditures per KW saved ($/kW)**:*	$1,991
TRC Benefit	$4,549.11
TRC Cost	$29,282.00

Table 11: Baseline Hot Water Requirements

Baseline hot water requirement				
Based on 95 staff at 0.6 gallon a day				
Annual hot water requirement			78.75	m3
			20805	gallons
Total electricity saved per year =			4,814	kWh
Estimated Extra Gas Required for booster, assuming 20% of the hot water heating requirement				
at	0.36	GJ/m3	5.6697956	GJ
	9.5508	m3 gas/m3	54	m3
at	$0.43	per m3	$23.41	per year

3.5.2. Geothermal

The objective of this project is to install an energy efficient heating and cooling system in an office building to demonstrate the benefits to other building owners and designers of utilizing geothermal energy for central air HVAC system in a commercialized project. GHESI will use the new addition of the GHESI office (Southgate Phase II) for this demonstration project.

Southgate Phase I is the existing service Centre. GHESI occupied the Southgate facility in 1995 and it has operated with geothermal heating and cooling since then. The other existing facility is Dawson Road. GHESI will relocate its Dawson Road employees to Southgate Phase II in May/June of 2006 at which time the Dawson Road office will be closed.

The baseline for measuring the performance of conservation will be the combined total of electricity and gas consumption of Dawson Road and Southgate Phase I in the past three years. Phase II is a 35,000 square foot office addition to Southgate Phase I. The Phase II facility is also geothermally heated and cooled. So when GHESI staff members are all in Phase I and Phase II after May 2006, the new energy consumption can be compared to the baseline of the existing facilities.

The historic 3 years electricity and gas consumption are shown in Table 12 on the following page. A 30% saving in electricity and gas consumption is expected. There are 95 staff members.

Table 12: Historic Electricity and Gas Consumption

		3 Yr average	Target	Saving
Annual Electricity Usage	kWh	1,817,613	1,272,329	545,284
Annual Natural Gas	m3	24,031	16,822	7,209
Annual Natural Gas (kWh equivalent)	kWh	249,802	174,861	74,940
Annual Total energy (kWh equivalent)	kWh	2,067,415	1,447,190	620,224
Annual Energy Intensity	kWh/sq ft	57.75	40	17
Annual Energy Intensity	kWh/person	21,762	15,234	6,529

Using a 20 year life cycle and a discount rate of 7.6%, the result of the TRC analysis is shown in Table 13 below. The benefit to cost ratio is 2.32 and 107 kW of summer peak will be reduced. The energy saved per year is estimated to be 545,284 kWh of electricity and 7,209 m3 of natural gas. The incremental equipment cost is estimated to be $230,000. The C&DM cost to GHESI is $42,027. The cost to GHESI is $0.004 per kWh saved in electricity alone. The details of the TRC analysis are shown in Appendix J.

Table 13: TRC Analysis of the Geothermal Project at Southgate Phase 2.

	Geothermal
Net TRC value ($):	$357,878.09
Benefit to cost ratio:	2.32
Number of participants or units delivered:	95
Total KWh to be saved over the lifecycle of the plan (kWh):	10,905,680
Estimated Annual Total kWh to be saved (kWh):	$545,284
Estiamted Total peak demand saved (kW):	107
Estimated Total kWh to be saved as a percentage of total kWh delivered (%):	0.034%
Estiamted Peak kW saved as a percentage of LDC peak kW load (%):	0.038%
Gross in 2006 C&DM expenditures ($):	$42,027
Expenditures per KWh saved ($/kWh):*	$0.004
*Expenditures per KW saved ($/kW)**:*	$394
TRC Benefit	$629,905.40
TRC Cost	$272,027.31

3.6. Metering Pilot Program

Guelph Hydro's pilot project will target a total of 213 electric customers (200 residential customers and 13 small commercial) and one water customer utilizing new secure wireless communications infrastructure from an existing Guelph Hydro communications tower at the Southgate - Service Centre.

GHESI intends to compare customer electricity consumption following the installation of the smart meters with historical consumptions prior to the pilot project. It is unclear that Smart Meters on their own will incent energy users to become more energy efficient, but GHESI expect that Smart Meters in conjunction with the new rate plan and load management devices will encourage customers to reduce and / or shift their energy consumption.

Accomplishments & Costs - 2005:

In the fourth quarter 2005, Guelph Hydro purchased "backbone" radio communications equipment to interface with field meter data collectors (gateways) and the Smart Metering system's Advanced Metering Control Computer (AMCC). This communications equipment will be installed on an existing Guelph Hydro communications tower.

The C&DM plan supported the Smart Metering pilot program through funding the communications component as communications (one way and two way) are areas to be tested as part of the pilot. A total of $56,153 was funded.

Looking Ahead – 2006:

In 2006 GHESI plan to install and configure the communications infrastructure and the 213 electric smart meters. The C&DM Smart Metering Operating budget totals $25,000, spread between 2006 and 2007. In 2006 GHESI will use $18,000 of the 2006-2007 Operating budget for a "hosting service" of the AMCC hardware and software for the duration of the 6-month pilot project.

4. Lessons Learned

In both the Education and Promotion and Low Income programs, GHESI purchased C&DM materials in bulk to save on unit costs. This means that for CFLs or educational material bought in bulk and not used in 2005, the CDM expenditures per kWh saved were artificially high in 2005 and will be artificially low in 2006 and possibly 2007. The reporting method unnecessarily complicates the administration of bulk purchases between multiple programs.

4.1. Education and Promotion Programs

The Education and Promotion Program was quite successful in 2005. Given the need to continue increasing awareness and participation in energy saving technology and behaviour, it is a necessary Program to continue in 2006 and beyond. However, certain sub-programs warrant further discussion in terms of lessons learned.

In terms of Education and Promotion sub-programs that had TRC analyses completed (i.e. they were not only educational, but also had an energy savings component), higher participation rates off-set the impacts of certain fixed costs to generate better economic results. In other words, GHESI learned that using the existing process of reporting requires allocating some Program or Portfolio costs at the sub-program level. In future, it may be more effective to allocate these costs based on expenditure level rather than prorating equally across all sub-programs. The smaller sub-programs, for example the Rotary Club sub-program where 7 CFLs were given out, lose their economic appeal when fixed costs are allocated directly to them. Although the educational value still warrants participating in these smaller venues, if the allocation of Program level or Portfolio level costs must be attributed at the sub-program level, then larger events will perform better through the TRC analysis.

In addition, the concept of partnering with others can be quite beneficial as demonstrated by the Enerconnect Coupon and the Switch to Cold sub-programs. The benefit to cost ratios were 5.49 and 2.06, respectively, and the expenditures per kWh saved were $0.007 and $0.014, respectively.

Finally, the purely educational sub-programs were effective in that they tended to reach a large number of customers without much expense. Based on the objective of having a sustainable conservation culture in the Guelph Community**,** the interest demonstrated and the low expense incurred, GHESI intends to continue to provide purely educational programs to its customers.

4.2. Low Income Programs

The Low Income Program consisted of the Seasonal Hamper and Willow Place sub-programs in 2005. The Willow Place sub-program was not evaluated through the TRC since there were no energy savings generated in 2005 as only audits have been completed so far.

The Seasonal Baskets – Energy Elves was the most successful sub-program GHESI provided in 2005. Not only were the most at risk customers assisted and educated by this sub-program, but the economic results were positive as well. With a Net TRC Value of $72,273, a benefit to cost ratio of 12.36 and expenditures per kWh saved of $0.007, this sub-program was very successful. The biggest factor contributing to the

success of this sub-program was the high number of participants. This allowed the fixed costs to be spread over many participants, thus lowering the unit impact of the fixed costs. GHESI will consider using the lessons learned in designing programs for 2006.

4.3. Air Conditioner Replacement Program

Due to the relatively low participation rates, this project needed another 24 air conditioners exchanged to break even. The 27 air conditioners exchanged in 2005 represent a TRC loss of $4,575 or a $169 loss per unit. This program may not be repeated in 2006.

4.4. City Leadership Programs

This is a successful program. The City Traffic Light Program has a TRC benefit to cost ratio of 1.35 and a net TRC value of $174,589. It only cost GHESI 0.62 cents per kWh saved.

4.5. Technology, Research and Demonstration Programs

Both the Geothermal and Solar Vacuum Tube project will be commissioned in mid 2006. It will take at least 12 months after the commissioning of the projects in order to measure their savings.

4.6. Metering Pilot Program

Key benefits to Guelph Hydro will be “lessons learned” from the Smart Metering pilot. GHESI will gain practical experience in new electronic meter implementation as well as new communications system installation, commissioning and network management. Guelph Hydro Information Systems will gain experience in managing interval data on a daily basis to support settlement processes that will be required. Participating in the pilot project will provide Guelph Hydro with experiences and knowledge to better support the Minister of Energy’s commitment to install Smart Meters across all of Ontario.

4.7. Distributed Energy

The subprogram “Ukrainian Health Care Centre Solar Project” in Etobicoke is a leading edge new technology project designed to overcome the barriers to development and deployment for use of solar cooling at a Long-term Care Home. The project objectives are to build an installation that will demonstrate the integration of solar thermal collectors with three energy needs: domestic hot water, space heating and through adsorption chillers, air conditioning or process cooling. The new technology is the integration of adsorption chillers with solar thermal panels. The use of solar thermal panels to achieve electricity displacement is unique in North America. This project has

several supporting partners, including the Ontario Association of Non-Profit Homes and Services for Seniors, the Ontario Long Term Care Association, the Ontario Centre of Excellence, etc. GHESI contributed $5,000 to the group for planning and research, and hoped to be able to use the data in its service area.

GHESI has subsequently withdrawn from this project and is expected to receive its initial investment of $5,000 back from the group of investors in this new technology.

GHESI participated in this project before the OEB TRC Guide was released. The location of the Long-term Care Home is outside the supply area of GHESI. GHESI asked OEB staff of the implications of funding such studies outside its service area. According to the attribution guideline of the TRC Guide, GHESI cannot claim the TRC benefits relating to Shared Service Mechanism and Lost Revenue Adjustments from this project. The TRC Guide may in some instances, unintentionally act as a barrier for using C&DM funds to partner in innovative research and leading edge technologies developed, and deployed in Ontario, for the long term benefit of all Ontario customers.

5. Conclusion

5.1. Education and Promotion Programs

The Education and Promotion Program plays a critical role in fostering a conservation culture in the Guelph community. GHESI will take what was learned during 2005 and develop a number of sub-programs to implement in 2006. Some sub-programs may be essentially unchanged from the 2005 sub-programs, but GHESI will look to improve each sub-program based on the learnings described in section 4 above.

5.2. Low Income Programs

The Low Income Program was quite successful in 2005 and GHESI plans to implement the Seasonal Baskets – Energy Elves sub-program again in 2006. The Willow Place sub-program will move forward in 2006 based on a TRC assessment (to be completed after further discussions with the other parties involved) of the most effective initiatives to incent.

5.3. Air Conditioner Replacement Program

The Air Conditioner Replacement program may not be repeated in 2006 due to the relatively low participation.

5.4. City Leadership Programs

The city LED traffic light replacement program is successful. The traffic lights burn brighter, last longer and cost less when compared to the incandescent light bulbs.

5.5. Technology

From the TRC analysis, the geothermal project has a benefit the cost ratio of 2.32 while the Solar Hot Water project has a benefit to cost ratio of 0.16. The geothermal project will be implemented as planned while the Solar Hot Water project will be treated as a research project. The combined benefit to cost ratio of these two projects is 2.11.

5.6. Metering Pilot Program

This is an important initiative as directed by the Province of Ontario. It is unclear that Smart Meters on their own will incent energy users to become more energy efficient, but GHESI expect that Smart Meters in conjunction with the new rate plan and load management devices will encourage customers to reduce and / or shift their energy consumption.

6. Appendices

6.1. Appendix A: 2005 Guelph Hydro – Evaluation of the CDM Plan

	Portfolio	Aggregated Total			
	Total	Residential	GS > 50 kW	City	Guelph Hydro
Net TRC value ($):	$752,406	-$13,480	$0	$174,589	$333,145
Benefit to cost ratio:	1.86	0.96	0.00	1.35	2.11
Number of participants or units delivered:	11,365	11,076	2	97	190
Total KWh to be saved over the lifecycle of the plan (kWh):	24,314,953	6,580,026	0	6,732,960	11,001,967
Total in year kWh saved (kWh):	2,421,744	1,198,350	0	673,296	550,098
Total peak demand saved (kW):	224	39	0	77	108
Total kWh saved as a percentage of total kWh delivered (%):	0.1488%	0.0737%	0.0000%	0.0414%	0.0338%
Peak kW saved as a percentage of LDC peak kW load (%):	0.0803%	0.0140%	0.0000%	0.0275%	0.0388%
Gross in year C&DM expenditures ($):	$250,804	$160,478	$3,359	$41,655	$45,309
Expenditures per KWh saved ($/kWh):*	$0.0103	$0.0508	$0.0000	$0.0734	$0.0274
*Expenditures per KW saved ($/kW)**:*	$1,118	$4,112	$0	$542	$418

Utility discount rate (%):	7.63%

TRC Benefit	1,624,328	$320,962	$0	$668,911	$634,455
TRC Cost	871,922	$334,442	$0	$494,322	$301,309

6.2. Appendix B: GHESI Discussion of the Programs

6.2.1. Education and Promotion Programs

6.2.1.1. College Royale Sub-program

A. **Name of the Program:** Education and Promotion - College Royale

Description of the program (including intent, design, delivery, partnerships and evaluation):

College Royale is an annual exhibition at the University of Guelph. In order to educate customers and promote a conservation culture, GHESI handed out 1 Energy Kit per household visiting the booth. Each kit contained 1 13 Watt CFL (to replace a 60 watt incandescent bulb), a Ministry of Energy "Conserve Energy and Save Money" pamphlet, and 1 One-Tonne Challenge pamphlet. The booth also promoted alternate forms of green energy, such as wind and solar. GHESI partnered with Select Power to deliver this sub-program in order to leverage the Select Power presence and booth at this event and keep costs as low as possible. A total of 147 Energy Kits were handed out to attendees demonstrating the high interest and success of this program.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	139.2		
Efficient technology:	30.16		
Number of participants or units delive	147		
Measure life (years):	4		

B. **TRC Results:**

TRC Benefits ($):		$3,367.04
TRC Costs ($):		
Utility program cost (less incentives):	$	2,057.61
Participant Costs	$	-
Total TRC costs:	$	2,057.61
Net TRC (in year CDN $):	$	1,309.43
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	1.64

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):	*57,704*	*14,426*	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: College Royale Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 880.36
	Incentive:	$ 158.10
	Total:	$ 1,038.46
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	$ -
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.2.C&DM Memberships and Workshops Sub-program

A. **Name of the Program:** Education and Promotion - C&DM Memberships and Workshops

Description of the program (including intent, design, delivery, partnerships and evaluation):

Association memberships and workshop fees related to C&DM. There is no TRC analysis for this sub-program, however the costs are included in the Program level TRC.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	$	2,777.25
Participant Costs	$	-
Total TRC costs:	$	2,777.25
Net TRC (in year CDN $):	-$	2,777.25

Benefit to Cost Ratio (TRC Benefits/TRC Costs): -

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: C&DM Memberships and Workshops Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,600.00
	Incentive:	
	Total:	$ 1,600.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	$ -
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.3.Enerconnect Coupon Sub-program

A. **Name of the Program:** Education and Promotion - Enerconnect Coupon

Description of the program (including intent, design, delivery, partnerships and evaluation):

ENERConnect offered a coupon program to LDCs that provided discounts on energy efficient merchandise at Canadian Tire stores. The program was administered by Energyshop and the TRC analysis was completed by SeeLine Group Inc. A total of 32 LDCs participated in this program including GHESI. The coupon package offered discounts on CFLs, LED Christmas Lights, Programmable Thermostats, Light and Appliance Timers, and Ceiling Fans. In terms of success factors, the final results exceeded expectations significantly resulting in more energy efficient technology being put into place by customers. The following summary is based on the TRC analysis prepared by SeeLine Group Inc. and included in the GHESI Anual CDM Report as an Appendix.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	See attached TRC Analysis		
Efficient technology:	See attached TRC Analysis		
Number of participants or units delive	See attached TRC Analysis		
Measure life (years):	See attached TRC Analysis		

B. **TRC Results:**

TRC Benefits ($):		$196,980.00
TRC Costs ($):		
Utility program cost (less incentives):	$	14,522.77
Participant Costs	$	21,352.00
Total TRC costs:	$	35,874.77
Net TRC (in year CDN $):	$	161,105.23
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	5.49

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		22.18
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*4,351,679*	*450,878*
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Enerconnect Coupon Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 13,345.50
	Incentive:	$ 17,000.00
	Total:	$ 30,345.50
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.27
	Total:	$ 1,177.27
Participant costs ($):	*Incremental equipment:*	$ 21,352.00
	Incremental O&M:	
	Total:	$ 21.352.00

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.4. Energy Wheels Sub-program

A. **Name of the Program:** Education and Promotion - Energy Wheels

Description of the program (including intent, design, delivery, partnerships and evaluation):

Energy Wheels are educational materials provided to customers through various sub-programs in the GHESI portfolio. GHESI's goal was to promote energy efficient behaviour to customers and the energy wheels provide information on how to conserve and save electricity. A total of 5,000 energy wheels were purchased and the full cost was included here. However, not all the energy wheels were distributed in 2005. The remaining energy wheels will be distributed in 2006.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delive	664	(only those not included elsewhere)	
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	$	6,579.98
Participant Costs	$	-
Total TRC costs:	$	6,579.98
Net TRC (in year CDN $):	-$	6,579.98

Benefit to Cost Ratio (TRC Benefits/TRC Costs): -

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Energy Wheels Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 5,402.73
	Incentive:	
	Total:	$ 5,402.73
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	$ -
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.5. Guelph Partnerships for Innovation Sub-program

A. **Name of the Program:** Education and Promotion - Guelph Partnership for Innovation

Description of the program (including intent, design, delivery, partnerships and evaluation):

Guelph Partnership for Innovation is a consortium of life science stakeholders with the vision of making Guelph one of the top five life science centres in North America. Their mandate is to coordinate information sharing among life science and agri-food companies in Guelph and area while fostering the development of Guelph as a leading centre for life science and agri-food research, development and commercialization through advocacy, education and communication. The goal of this program was to educate Guelph Partnerships for Innovation members and the local business community on the need for Conservation and Demand Management. There were 126 attendees at this educational session.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delive	126		
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	$ 2,054.09
Participant Costs	
Total TRC costs:	$ 2,054.09
Net TRC (in year CDN $):	-$ 2,054.09
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ -

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Guelph Partnerships for Innovation Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	876.84
	Incentive:	$	-
	Total:	$	876.84
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	1,177.25
	Total:	$	1,177.25
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.6. Guelph Environmental Leadership Sub-program

A. **Name of the Program:** Education and Promotion - Guelph Environmental Leadership

Description of the program (including intent, design, delivery, partnerships and evaluation):

This program was a partnership with Guelph Environmental Leadership (GEL) who was selling tickets for SMART car, and other environmental or energy gifts. A booth was set up at different Guelph employer locations between July 18-29, 2005 and the GHESI program provided 50 13 Watt CFLs to GEL to give to the first 50 people to buy tickets. To promote the Switch and Save air conditioner program, flyers were handed out with energy tips relating to staying cool in the summer.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	139.2		
Efficient technology:	30.16		
Number of participants or units delive	50		
Measure life (years):	4		

B. **TRC Results:**

TRC Benefits ($):		$1,145.25
TRC Costs ($):		
Utility program cost (less incentives):	$	1,267.25
Participant Costs		
Total TRC costs:	$	1,267.25
Net TRC (in year CDN $):	-$	122.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	0.90

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):	*19,627*	*4,907*	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Guelph Environmental Leadership Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 90.00
	Incentive:	$ 80.10
	Total:	$ 170.10
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.7. Rotary Club Sub-Program

A. **Name of the Program:** Education and Promotion - Rotary Club

Description of the program (including intent, design, delivery, partnerships and evaluation):

This program was implemented to educate members of the Rotary Club (Wellington South) on the importance of Conservation and Demand Management in Ontario. One 13 Watt CFL was given to each of the 7 winners of the GHESI energy quiz. Each of the 15 attendees received a package containing an Air Conditioner Switch and Save flyer, energy saving tips on how to stay cool and save during peak summer months, a Switch to Cold water washing coupon, a set of Canadian Tire Lighten your Electricity Bill coupons, and a copy of the Guelph Tribune, June 24th, 2005 article on the University Of Guelph's proposal to mid-size companies in manufacturing and service sectors to improve the bottom line by reducing waste chemicals, water and energy. Attendees were surveyed on what behaviours they would change. Four attendees returned the survey and said that they would change behaviours relating to cold water washing, CFL's, turning down the heat and water heating, setting the air conditioner higher, turning off lights and computers, using programmable thermostats, switching to seasonal LED lights, installing insulation, and asking stores to turn down air conditioners.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	139.2		
Efficient technology:	30.16		
Number of participants or units deliv	7		
Measure life (years):	4		

B. **TRC Results:**

TRC Benefits ($):		$160.34
TRC Costs ($):		
Utility program cost (less incentives):	$	1,189.85
Participant Costs		
Total TRC costs:	$	1,189.85
Net TRC (in year CDN $):	-$	1,029.51
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	0.13

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):	*2,748*	*687*	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Rotary Club Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 12.60
	Incentive:	$ 14.25
	Total:	$ 26.85
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.8. Seasonal LED Exchange Sub-program

A. **Name of the Program:** Education and Promotion - Seasonal LED Exchange

Description of the program (including intent, design, delivery, partnerships and evaluation):

During the winter of 2004/05, GHESI offered a seasonal LED light exchange program to their customers in order to encourage conservation through energy efficiency measures. A total of 800 people exchanged their C-7 lights for free LED lights even though many of these people had to wait in line to do so. Overall, the program was very successful and resulted in higher efficiency technology being utilized leading to energy savings.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	17.05		
Efficient technology:	0.54		
Number of participants or units deliv	800		
Measure life (years):	30		

B. **TRC Results:**

TRC Benefits ($):		$13,763.60
TRC Costs ($):		
Utility program cost (less incentives):	$	11,127.25
Participant Costs		
Total TRC costs:	$	11,127.25
Net TRC (in year CDN $):	$	2,636.35
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	1.24

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*376,428*	*12,548*
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Seasonal LED Exchange Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$	9,950.00
	Incentive:	$	10,369.85
	Total:	$	20,319.85
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:	$	1,177.25
	Total:	$	1,177.25
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:		
	Total:	$	-

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.9. Switch to Cold Sub-program

A. **Name of the Program:** Education and Promotion - Switch to Cold (Cold Water Washing)

Description of the program (including intent, design, delivery, partnerships and evaluation):

This program was a partnership arrangement between XXX, Proctor & Gamble and Ontario LDCs including GHESI. The objective was to encourage cold water washing as an alternate to hot water washing. The coupons were valid until February 28, 2006, so the final tallies were not available in time for this report. GHESI has assumed the lower estimate of coupon redemption of 2% for this report. While GHESI had to pay for the production of the coupons, Proctor & Gamble is providing the actual product incentive ($1 off a container of Tide Cold Water).

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	779		
Efficient technology:	156		
Number of participants or units deliv	800		
Measure life (years):	1		

B. **TRC Results:**

TRC Benefits ($):		$23,070.00
TRC Costs ($):		
Utility program cost (less incentives):	$	5,176.25
Participant Costs	$	6,000.00
Total TRC costs:	$	11,176.25
Net TRC (in year CDN $):	$	11,893.75
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	2.06

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		12.6
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*373,800*	*373,800*
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Switch to Cold Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 3,999.00
	Incentive:	
	Total:	$ 3,999.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,177.25
	Total:	$ 1,177.25
Participant costs ($):	*Incremental equipment:*	$ 6,000.00
	Incremental O&M:	
	Total:	$ 6,000.00

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.1.10. VIP Training Sub-program

A. **Name of the Program:** Education and Promotion - VIP Training

Description of the program (including intent, design, delivery, partnerships and evaluation):

The VIP Training sub-program was created to determine the benefits of providing a one-day energy management workshop to industrial/commercial customers. The pilot was completed with two industrial/commercial customers - Barber Glass and SiHi Pumps. The training session was completed on April 8, 2005. Both customers provided excellent feedback in terms of the value they found from the session. Initial surveys suggested that both customers could envision implementing energy conservation or demand management programs in their facilities. Follow up is planned in Q1-2006 to determine if any changes have been planned or implemented.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units deliv	2		
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	$	3,361.42
Participant Costs		
Total TRC costs:	$	3,361.42
Net TRC (in year CDN $):	-$	3,361.42
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	-

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: VIP Training Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 2,184.17
	Incentive:	
	Total:	$ 2,184.17
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,175.25
	Total:	$ 1,175.25
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.2. Low Income Programs

6.2.2.1. Seasonal Baskets -Energy Elves Sub-program

A. **Name of the Program:** Low Income - Seasonal Baskets

Description of the program (including intent, design, delivery, partnerships and evaluation):

In order to assist low income customers reduce their energy needs and costs, GHESI employees volunteered their time after hours to produce the baskets for charity and employee's children of high-school age also volunteered using the hours towards their high-school volunteering requirement. The baskets were created and donated to promote energy saving behaviours and ideas to low income customers. Seasonal baskets consisted of one 13 Watt CFL, the brochure "Educational Tips on How to Conserve Energy", one Switch to Cold Tide coupon, and one set of Lighten Your Electricity Bill coupons. Rogers TV was at the location filming the "Energy Elves in action" and the Tribune newspaper attended as well. Articles appeared in the Mercury and Tribune. The baskets were distributed as follows: 950 baskets went to the Salvation Army, Guelph, 260 baskets went to St. Vincent de Paul, Guelph, 2223 baskets went to the Food Bank, Guelph. Total = 3,433 baskets distributed.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	139.2		
Efficient technology:	30.16		
Number of participants or units deliv	3,433		
Measure life (years):	4		

B. **TRC Results:**

TRC Benefits ($):		$78,632.87
TRC Costs ($):		
Utility program cost (less incentives):	$	6,359.96
Participant Costs	$	-
Total TRC costs:	$	6,359.96
Net TRC (in year CDN $):	$	72,272.91
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	12.36

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):	*1,347,604*	*336,901*	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Seasonal Baskets-Energy Elves Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 6,179.40
	Incentive:	$ 3,140.14
	Total:	$ 9,319.54
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 180.56
	Total:	$ 180.56
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.2.2. Washer Dryer Replacement Sub-program

A. **Name of the Program:** Low Income - Washer Dryer Replacement

Description of the program (including intent, design, delivery, partnerships and evaluation):

The Washer Dryer Replacement sub-program was not initiated in 2005, but did incur some research and development costs during the year. Therefore, there was no TRC completed for this sub-program. However, the total C&DM expenditures of $192 were included in the Low Income program level TRC analysis. GHESI plans to provide a TRC in the 2006 Annual CDM report for this sub-program.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$0.00
TRC Costs ($):		
Utility program cost (less incentives):	$	-
Participant Costs	$	-
Total TRC costs:	$	-
Net TRC (in year CDN $):	$	-
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Washer Dryer Replacement Program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 11.25
	Incentive:	$ -
	Total:	$ 11.25
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 180.56
	Total:	$ 180.56
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.2.3. Willow Place Pilot Sub-program

A. **Name of the Program:** Low Income - Willow Place Pilot

Description of the program (including intent, design, delivery, partnerships and evaluation):

The Willow Place pilot was part of an initiative with the Social Housing Services Corporation (SHSC) which has undertaken audits of over 50 social housing providers, representing over 6000 units to estimate background energy use, and to identify opportunities for reducing energy use. These audits were part of a pilot program, which is now entering its second stage – implementation of energy efficiency measures. Through the audits, opportunities for energy reductions have been identified, and SHSC is prepared to coordinate interaction between LDCs and social housing providers.

Measure(s):

	Measure 1	Measure 2	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$0.00
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant Costs	
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Willow Place Pilot Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 4.150.00
	Incentive:	
	Total:	$ 4,150.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 180.56
	Total:	$ 180.56
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	$ -

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.3. City Leadership Program – LED Traffic Lights Sub-program

A. **Name of the Program:** City Leadership - LED Traffic Lights

Description of the program (including intent, design, delivery, partnerships and evaluation):

The project involved the replacement of incandescent bulbs with LED lights at 81 City Traffic Signals locations and 21 City Traffic Signal Cross Walk locations. A total of 113 signaled intersections and 38 traffic signal/crosswalk locations exist within Guelph City limits. The City worked on intersection traffic lighting upgrades through the fall of 2005. As of December 31, 2005, 95% of Traffic Signaled intersections were upgraded to LED. The balance of the signals will be replaced in 2006. The 7 to 10 year lifespan of the LED traffic signal head compares favourably to the 6 month lifespan of the incandescent bulb. The projection of ultimate kWh savings per signal as follows. For traffic signals, the current usage is 857 kWh. The future usage is expected to be 173 kWh for a 684 kWh savings per signal. For crosswalks, the current usage is 253 kWh and the expected future usage is 81 kWh for a savings of 172 kWh per signal. Annual maintenance savings of $23,300 will be starting in 2006.

Measure(s):

		2005
Base case technology:		incandescent bulbs
Efficient technology:		LED bulbs
Number of participants or units delivered:		97
Measure life (years):		10

B. **TRC Results:**

		2005
TRC Benefits ($):		$ 668,911
TRC Costs ($):		
	Utility program cost (less incentives):	$ 1,655
	Participant Costs	$ 492,667
	Total TRC costs:	$ 494,322
Net TRC (in year CDN $):		$ 174,589
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		1.35

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		76.9
	Winter		
		lifecycle	*2005*
Energy saved (kWh):		*6,732,960*	673,296
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: City Leadership Program - LED Traffic Lights (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capit*	$	-
	Incremental O&M	$	1,251
	Incentive:	$	40,000
	Total:	$	41,251
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:	$	405
	Total:	$	405
Participant costs ($):	*Incremental equi*	$	492,667
	Incremental O&M	$	-
	Total:	$	492,667

E. Comments:

6.2.4. Metering Pilot Program

A. **Name of the Program:** Metering Pilot

Description of the program (including intent, design, delivery, partnerships and evaluation):

The Smart Meter pilot project will result in the installation of 213 smart meters and related communications infrastructure, to permit the daily retrieval of hourly meter data in a reliable manner. The Smart Meter infrastructure will be used as a baseline enabling technology for load control, demand response and/or customer display technology programs that we expect will be influential tools in modifying customer behaviour, with appropriate incentives (ie rate structure). For this stage of the Smart Metering pilot, no costs will be borne by the customer. The costs identified below are capital and operating costs for the installation and operation of the 213 meters, communications equipment, data retrieval and communications network management hosting service, for a 6 month trial period. No costs have been estimated or included for the still undefined province-wide Meter Data Repository (MDR), back office integration and/or modifications to our billing system to accept hourly data for residential customer class from the smart metering system for billing purposes. After the basic Smart Metering infrastructure is installed and in a stable, functional and reliable state,

GHESI plan to introduce various load management/in-home customer display options, which will then provide GHESI the ability to measure the effectiveness of the various technologies / incentives in modifying customer energy consumption behaviour. The costs identified below are year-end 2005 costs plus the anticipated total project costs for a 6-month pilot in 2006. Note that the total pilot project costs to Guelph Hydro are estimated at $210,000. Section 4.6 "Metering Pilot Programs" of Guelph Hydro's C&DM plan included a total contribution of $75,000 to the Smart Metering Pilot.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Electromechanical meters		
Efficient technology:	Electronic smart meters		
Number of participants or units delivered:	213		
Measure life (years):	15		

B. **TRC Results:**

TRC Benefits ($):		*NA*
TRC Costs ($):		
Utility program cost (less incentives):		
Participant cost:		$ -
Total TRC costs:		$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Metering Pilot Program

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 54,902.70
	Incremental O&M:	$ 1,250.56
	Incentive:	
	Total:	$ 56,153.26
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.5. Technology, Research and Demonstration Programs

6.2.5.1. Solar Hot Water

A. **Name of the Program:** Technology, Research and Demonstration - Solar Vacuum Tube Water Heater

Description of the program (including intent, design, delivery, partnerships and evaluation):

A linear vacuum tube solar collector array is to be roof-mounted on the new office building of Guelph Hydro. This system will supply heated water for the domestic hot water system. Along with storage tanks, a small gas-fired booster tank/heater will supply all of the building's domestic hot water needs.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Electric hot water heater		
Efficient technology:	Solar Vacuum Tube Water Heater		
Number of participants or units delivered:	95		
Measure life (years):	20		

B. **TRC Results:**

TRC Benefits ($):		*$4,549.11*
TRC Costs ($):		
Utility program cost (less incentives):	$	3,282.00
Participant cost:	$	26,000.00
Total TRC costs:	$	29,282.00
Net TRC (in year CDN $):		-24,732.89
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.16

C. **Results: (one or more category may apply)**

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		1.65
	Winter		1.65
Energy saved (kWh):		*96,287*	4,814
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Solar Hot Water Sub-program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$3,282.00
	Incentive:	
	Total:	$ 3,282.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	$ 26,000.00
	Incremental O&M:	
	Total:	$ 26,000.00

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.5.2. Geothermal

A. **Name of the Program:** Technology, Research and Demonstration - Geothermal Heating & Cooling Project

Description of the program (including intent, design, delivery, partnerships and evaluation):

The objective of this project is to install an energy efficient heating and cooling system in an office building to demonstrate the benefits to other building owners and designers of utilizing geothermal energy for central air HVAC system in a commercialized project. GHESI will use the new addition of the GHESI office (Southgate Phase II) for this demonstration project.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:		1	
Measure life (years):		20	

B. **TRC Results:**

TRC Benefits ($):		*$629,905*
TRC Costs ($):		
	Utility program cost (less incentives):	$42,027
	Participant cost:	$230,000
	Total TRC costs:	$272,027
Net TRC (in 2006 CDN $):		$ 357,878
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		2.32

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		107
	Winter		156
		lifecycle	*annual*
Energy saved (kWh):		*10,905,680*	545,284
Other resources saved :			
Natural Gas (m3):		144,186	7,209
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Geothermal (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):		
Distribution system power factor at begining of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):		
Energy generated (kWh):		
Peak energy generated (kWh):		
Fuel type:		

Other Programs (specify):

Metric (specify):		

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$40,000	
	Incremental O&M:	$1,251	
	Incentive:		
	Total:	$41,251	
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:	$776	
	Total:	$776	$42,027
Participant costs ($):	*Incremental equipment:*	$230,000	
	Incremental O&M:		
	Total:	$230,000	

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.2.6. Air Conditioner Replacement Program

A. **Name of the Program:** Air Conditioner Replacement - Switch and Save

Description of the program (including intent, design, delivery, partnerships and evaluation):

Under this program, Guelph Hydro paid people to switch out their old window air conditioners. A new window air conditioner is forecast to use 30 to 70% less electricity. To qualify, any Guelph resident could bring in their old (but still functioning) window air conditioner and Guelph Hydro would give that resident $40 toward a horizontal 7000 BTU model or $50 toward a horizontal 10,200 BTU model.

Measure(s):

	7000 BTU units	10,200 BTU Units	Measure 3 (if applicable)
Base case technology:	625	625	
Efficient technology:	406	577	
Number of participants or units deliv	17	10	
Measure life (years):	12	12	

B. **TRC Results:**

TRC Benefits ($):			$3,843.30
TRC Costs ($):			
	Utility program cost (less incentives):	$	6,265.89
	Participant Costs	$	972.00
	Total TRC costs:	$	7,237.89
Net TRC (in year CDN $):			-$3,394.59
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		$	0.53

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		4.25
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*50,436*	4,203
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Appendix B: Air Conditioner Replacement Program (page 2)

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (kWh):		

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 4,619.00
	Incremental O&M:	$ 1,250.56
	Incentive:	$ 1,180.00
	Total:	$ 7,049.56
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 396.33
	Total:	$ 396.33
Participant costs ($):	*Incremental equipment:*	$ 972.00
	Incremental O&M:	
	Total:	$ 972.00

E. Comments:

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

6.3. Appendix C: SeeLine Group Inc. Report

Please see the attached report from SeeLine.

TOTAL RESOURCE COST TEST ASSESSMENT OF THE '2005 LIGHTEN YOUR ELECTRICITY BILL' PROGRAM

For
Guelph Hydro

By
SeeLine Group Inc.
416-703-8695

February 2006

1.0 Introduction

Energyshop.com was engaged by 32 Local Distribution Companies (LDCs), across the province of Ontario, to design, deliver and track a fall coupon campaign with retailer Canadian Tire. Throughout the late summer and early fall billing periods, participating utilities provided their customers with a bill insert containing valuable energy-savings coupons to help them save on their electricity bill.

Customers from each of the 32 LDCs, had until December 31, 2005 to redeem their point of purchase coupons at any local Canadian Tire outlet. Upon redemption, Canadian Tire sent the coupon to a redemption house, who then sorted by utility and product.

As part of this effort, SeeLine Group Inc. (SLG) was asked to undertake a Total Resource Costs (TRC) test assessment of the 2005 Lighten Your Electricity Bill Program as delivered by Energyshop.com. Using many of the technology cost and savings estimates outlined in the Ontario Energy Board's TRC Guide, program results were screened using SLG's SeeTool™ TRC Calculator. The number of participants and program cost data were provided by Energyshop.com.

This report includes a summary of assumptions and results from the TRC screening. Appendix A and B provides the detailed information on program assumptions.

2.0 Program Objectives

As outlined by Energyshop.com, this program was designed to achieve the following objectives:

- To help participating utilities achieve energy conservation and demand management results for their 2005 program year.
- Increase public awareness of energy conservation and demand management in the province of Ontario.
- Contribute to the overall development of an energy conservation culture in Ontario.

3.0 Program Results

3.1 Technology Savings Assumptions

SLG used many of the technology savings identified by the OEB in its Total Resource Guide.[1] For those technologies without defined savings, every effort was made to develop reasonable assumptions, defensible under the OEB guidelines. The following provides a brief outline of the savings assumptions used for this assessment.

[1] http://www.oeb.gov.on.ca/documents/cases/RP-2004-0203/cdm_assumptionsmeasureslist_141005.xls

Compact Fluorescent Bulbs

The 2005 program provided customers with a $3 coupon on any pack of compact fluorescent bulbs. Using store data provided by Energyshop.com, the number of bulbs sold by wattage was used to develop the average wattage of bulb sold. Based on this information, it was assumed that the average wattage sold during this program was 15 watts. Additional detail can be found in Appendix A.

LED Seasonal Lights

Like the CFLs, customers were provided with a $5 coupon for the purchase of any package of LED seasonal lights. Using store data provided by Energyshop.com, average size of LED light string sold during the campaign was determined. Based on this information, it was assumed that the average string sold had 59 bulbs.

Using the information in the OEB's TRC Guide, LED savings assumptions were adjusted to reflect a string with 59 bulbs as opposed to the 25 bulbs per string. Additional detail can be found in Appendix A.

With guidance from Energyshop.com, it was also assumed that 50% of the LED lights sold were those replacing a 5 watt Christmas string and the remaining 50% were used to replace mini lights which yields a slightly lower savings.

Ceiling Fans

At the time of this analysis, SLG felt there was not enough significant evidence to support a savings estimate for ceiling fans.

Programmable Thermostats

SLG used the savings estimate outlined in the OEB's TRC Guide. Participant rates were adjusted to account for market share. Using data provided by Energyshop.com and other studies, the following province wide fuel share assumptions were used:

Electrical Space Heating	17.3%
Electrical Space Cooling (central air)	45.0%

Indoor Timers

In the absence of OEB savings estimates for indoor timers, SLG developed savings estimates for timers used on indoor lighting and air conditioners. Detailed information can be found in Appendix B.

The savings estimate for timers for indoor lighting is considered to be small. It assumes that the timer is used on a 60 W bulb and provides savings during the winter peak, winter mid peak and summer peak periods. In total, the timer is expected to provide approximately 98 kWh savings.

The savings estimate developed for timers used on unit air conditioners is based on the owner setting the timer to bring the air conditioner on a few hours before he or she

arrives home. Based on this assumption, a timer used for a unit air conditioner would provide approximately 108 kWh in annual savings.

Based on discussions with EnergyShop.com it was assumed that 50% of the timers would be used for lighting and the remaining 50% would be used for air conditioners. SLG made an additional assumption and assumed that it was unlikely that all of the timers would be used appropriately; participation rates were reduced by 30%.

Outdoor Timers

The savings estimate for the outdoor timer is based on information from the OEB's TRC Guide.

EnerGuide for Homes

Based on information provided by Energyshop.com the potential savings for space heating load is estimated to be 250 kWh. Using the participant data provided by EnergyShop.com, SLG made adjustments to account for uptake on the audit recommendations and fuel market share. No additional fuel savings were considered for this analysis.

3.2 Summary of Program Participation

Technology	Number of Participants	Free Ridership
Compact Fluorescent Bulbs	3,220	10.0%
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	613	10.0%
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	613	10.0%
Programmable Thermostat - Space Heating, Existing Single Family Detached	49	10.0%
Programmable Thermostat - Space Cooling, Existing Single Family Detached	127	10.0%
Timer - Outdoor Light	109	10.0%
Timer - Indoor - Light	17	10.0%
Timer - Indoor - Air Conditioners	17	10.0%
Ceiling Fan	44	10.0%
EnerGuide for Existing Homes - Space Heating	0	10.0%

* Adjusted for fuel share and usage uptake

3.3 Summary of Net Program Savings

Technology	Summer Peak kW Savings	Annual kWh Savings in Year	Measure Life	Lifecycle kWh Savings
Compact Fluorescent Bulbs	0	302,528	4	1,210,110.84
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	0.00	24551.78	30.00	736,553.40
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	0.00	9396.36	30.00	281,890.81
Programmable Thermostat - Space Heating, Existing Single Family Detached	0.00	64383.31	18.00	1,158,899.56
Programmable Thermostat - Space Cooling, Existing Single Family Detached	18.62	18168.98	18.00	327,041.71
Timer - Outdoor Light	0.00	28645.20	20.00	572,904.00
Timer - Indoor - Light	0.90	1500.62	20.00	30,012.48
Timer - Indoor - Air Conditioners	2.66	1664.64	20.00	33,292.80
Ceiling Fan	0.00	0.00	20.00	0.00
EnerGuide for Existing Homes - Space Heating	0.00	38.93	25.00	973.13
Total		**450,878**		**4,351,679**

3.4 Summary of Total Resource Cost Test Results

Technology	TRC Benefits	Incremental Equipment Costs	Utility Program Costs	TRC Net Benefits	TRC B/C Ratio
Compact Fluorescent Bulbs	$73,748	$5,796	$ -	**$67,952**	**12.72**
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	$22,853	$1,103	$-	**$21,749**	**20.71**
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	$8,746	$1,103	$-	**$7,643**	**7.93**
Programmable Thermostat - Space Heating, Existing Single Family Detached	$44,131	$2,634	$-	**$41,496**	**16.75**
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$22,003	$6,853	$-	**$15,150**	**3.21**
Timer - Outdoor Light	$21,292	$1,962	$-	**$19,330**	**10.85**
Timer - Indoor - Light	$1,588	$107	$-	**$1,481**	**14.83**
Timer - Indoor - Air Conditioners	$2,611	$107	$-	**$2,504**	**24.38**
Ceiling Fan	$-	$1,663	$-	**($1,663)**	**0.00**
EnerGuide for Existing Homes - Space Heating	$31	$23	$-	**$8**	**1.32**
Program Costs	$-	$-	$8,802	**($8,802)**	**0.00**
Total	**$196,980**	**$21,352**	**$8,802**	**$166,826**	**6.53**

Appendix A

Compact Fluorescent Bulb and LED Light Details

Data provided by Energyshop.com

CFL Sales - Ontario

Product Number	Description	Watts	Pack Size	Units Sold	Bulbs Sold	Ave # of bulbs	Average Wattage
052-5109-0	COMPFL-REPL.13W 2700	13	1	3,510	3,510		45630
052-5119-6	COMPFL-REPL.9W 4100	9	1	794	794		7144.2
052-5120-0	CFL 13W SPIRL 3PK	13	3	79,920	239,760		3116880
052-5121-8	CFL 26W SPIRL 3PK	26	3	60,480	181,440		4717440
052-5124-2	13W MINI 6PK NOMA	13	6	41,310	247,860		3222180
052-5125-0	26W MINI NOMA	26	1	4,644	4,644		120744
052-5126-8	10W MINI 2PK GE	10	2	10,800	21,600		216000
052-5127-6	26W MINI 2PK GE	26	2	15,390	30,780		800280
052-5128-4	CFL 10W SPIRL 3PK	10	3	32,940	98,820		988200
052-5135-6	32W MINI GE	32	1	1,620	1,620		51840
052-5137-2	45W MINI GE	45	1	3,024	3,024		136080
052-5140-2	TRI 15/26/40 NOMA	40	1	1,890	1,890		75600
052-5141-0	TRI 12/23/32 MINI GE	32	1	1,620	1,620		51840
052-5144-4	DIMMABLE 29W BIAX GE	29	1	216	216		6264
052-5146-0	13W MINI BLACK NOMA	13	1	2,754	2,754		35802
052-5153-2	13W MINI RED NOMA	13	1	3,240	3,240		42120
052-5157-4	13W MINI GREEN NOMA	13	1	3,348	3,348		43524
052-5159-0	13W MINI BLUE NOMA	13	1	3,456	3,456		44928
052-5167-0	TUBE-CIRCLNE12"32WKB	32	1	540	540		17280
052-5168-8	TUBE-CIRCLNE8"22WK&B	22	1	918	918		20196
052-5176-8	13W MINI 2PK GE	13	2	32,454	64,908		843804
052-5182-2	CFL 12/20/26W TRILIT	26	1	3,780	3,780		98280
052-5183-0	COMPFL 26W SW DIMMBL	26	1	1,620	1,620		42120
052-5189-8	11W MINI BUG LGHT GE	11	1	540	540		5940
052-5190-2	CFL BUG LIGHT 13W	13	1	2,052	2,052		26676
052-5191-0	CFL BUG LIGHT 23W	23	1	864	864		19872
052-5192-8	9W NAT/COOL 2PK NOMA	9	2	13,554	27,108		243972
052-5193-6	13W NAT/COOL 2PKNOMA	13	2	25,380	50,760		659880
052-5194-4	23W NAT/COOL 2PKNOMA	23	2	19,440	38,880		894240
052-5195-2	10W MINI NOMA	10	1	2,160	2,160		21600
052-5196-0	13W MINI NOMA	13	1	4,320	4,320		56160
052-5331-8	COMPFL 9WG25 3PK	9	3	1,458	4,374		39366
052-5332-6	COMPFL 7W A-LINE	7	1	3,186	3,186		22302
052-5333-4	COMPFL 15W R30	15	1	2,268	2,268		34020
052-5334-2	COMPFL 23W PAR38	23	1	1,890	1,890		43470
052-5335-0	COMPFL 15WR30 2PK	15	2	2,484	4,968		74520
052-5352-8	R20 11W FLD NOMA	11	1	1,890	1,890		20790
052-5353-6	R20 11W FLD GE	11	1	1,080	1,080		11880
052-5355-2	R30 15W FLD GE	15	1	1,998	1,998		29970
052-5356-0	R30 15W FLD DIM GE	15	1	540	540		8100
052-5357-8	PAR38 26W FLD 2PK NO	26	2	2,160	4,320		112320
052-5358-6	PAR38 26W FLD GE	26	1	2,592	2,592		67392
052-5360-8	PAR38 23W FLD RED NO	23	1	1,998	1,998		45954
052-5361-6	PAR38 23W FLD GRN NO	23	1	1,620	1,620		37260
052-5362-4	PAR38 23W FLD BLU NO	23	1	1,242	1,242		28566
052-5363-2	PAR38 23W FLD YLW NO	23	1	594	594		13662
052-5364-0	R40 26W FLD NOMA	26	1	918	918		23868
052-5365-8	R40 26W FLD GE	26	1	540	540		14040
052-5366-6	R40 26W FLD DIM GE	26	1	270	270		7020
052-5367-4	A-LINE 11W GE	11	1	1,026	1,026		11286
052-5368-2	A-LINE 15W NOMA	15	1	1,620	1,620		24300
052-5369-0	A-LINE 15W GE	15	1	2,700	2,700		40500
052-5370-4	G25 9W NOMA	9	1	1,188	1,188		10692
052-5371-2	G25 9W GE	9	1	972	972		8748
052-5372-0	G30 15W GE	15	1	378	378		5670
052-5373-8	CHANDLR 5W MED GE	5	1	540	540		2700
052-5374-6	CHANDLR 7W MED NOMA	7	1	756	756		5292
052-5375-4	CHANDLR 7W MED GE	7	1	540	540		3780
052-5376-2	CHANDLR 9W MED GE	9	1	756	756		6804
052-5377-0	CHANDLR 5W CAN GE	5	1	540	540		2700
052-5378-8	CHANDLR 7W CAN NOMA	7	1	756	756		5292
052-5379-6	CHANDLR 7W CAN GE	7	1	648	648		4536
052-5382-6	CHANDLR 9W CAN GE	9	1	1,350	1,350		12150
052-5390-6	9W ULTRAMINI 3PK NOM	3	3	7,668	23,004		69012
052-5391-4	13W ULTRAMINI 3PK NO	13	3	12,042	36,126		469638
052-5392-2	13W ULTRAMINI 6PK NO	13	6	2,754	16,524		214812
				443,540	**1,174,538**	2.65	18,204,928
							15.499653 average watts

Data provided by Energyshop.com

SLEDs		**Total Units Sold**		
		50524		
Lights / string	%age	Program sales	Whole number	Average Bulb per String
25	15%	7384.266944	7384	3.653841216
35	22%	11311.7249	11314	7.836085259
70	52%	26025.92566	26026	36.05840386
100	11%	5802.082488	5802	11.4838146
				59.03214493

Appendix B

Technology Savings Data

TOTAL RESOURCE COST TEST																				
Program	Participant/Technology Information								Unit Energy Savings											
									Electricity Savings											
									Winter			Summer			Shoulder					
	Measure Life	Distribution Line Losses	Unit Incremental Costs	Program Delivery Costs	Unit Water Savings m3 (000's litres)	Unit Propane Savings m3 (000's litres)	Unit Oil Savings litres	Unit Diesel Savings m3	On Peak	Mid Peak	Off Peak	On Peak	Mid Peak	Off Peak	Mid Peak	Off Peak	Demand Type (C, DR)	Peak Demand Savings (Summer)	Comments
CFL Screw-In 15W	4	0.00%	$2.00	$ -	0.00	0.00	0.00	0.00	15.5	7.7	20.3	0.0	11.7	14.0	17.5	17.7	C	0.000	Average wattage of bulb sold during campaign (see Appendix A)
LED Christmas Lights (indoor or outdoor) Replacing 5w Ch	30	0.00%	$2.00	$ -	0.00	0.00	0.00	0.00	13.4	8.9	22.3	0.0	0.0	0.0	0.0	0.0	C	0.000	Savings based on 59 bulbs per string. Refer to Appendix A
LED Christmas Lights (indoor or outdoor) Replacing Incanc	30	0.00%	$2.00	$ -	0.00	0.00	0.00	0.00	5.1	3.4	8.5	0.0	0.0	0.0	0.0	0.0	C	0.000	Savings based on 59 bulbs per string. Refer to Appendix A
Programmable Thermostat - Space Heating, Existing Singl	18	0.00%	$60.00	$ -	0.00	0.00	0.00	0.00	202.1	231.0	541.8	0.0	0.0	0.0	219.0	272.4	C	0.000	
Programmable Thermostat - Space Cooling, Existing Singl	18	0.00%	$60.00	$ -	0.00	0.00	0.00	0.00	0.0	0.0	0.0	28.4	42.5	88.2	0.0	0.0	C	0.163	
Timer - Outdoor Light	20	0.00%	$20.00	$ -	0.00	0.00	0.00	0.00	43.3	21.6	56.9	0.0	32.9	39.0	48.8	49.5	C	0.000	
Timer - Indoor - Light	20	0.00%	$7.00	$ -	0.00	0.00	0.00	0.00	14.5	7.3	19.1	0.0	11.0	13.1	16.4	16.6	C	0.059	
Timer - Indoor - Air Conditioners	20	0.00%	$7.00	$ -	0.00	0.00	0.00	0.00	0.0	0.0	0.0	19.4	29.1	60.3	0.0	0.0	C	0.174	
Ceiling Fan	20	0.00%	$42.00	$ -	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	0.000	
EnerGuide for Existing Homes - Space Heating	25	0.00%	$150.00	$ -	0.00	0.00	0.00	0.00	34.5	39.4	92.4	0.0	0.0	0.0	37.3	46.4	C	0.000	
				$ -															

6.4. Appendix D: Enerconnect Coupon Sub-program Marketing Material

Please see the attached coupons and advertisement.

Compact Fluorescent Lights (CFLs)

Use 75% less electricity but get the same amount of light with a bulb that lasts up to 8 times longer. CFLs come in a range of sizes and shapes to fit almost any fixture indoor or out, and some can be used with dimmers.

Programmable Thermostats

Program your way to the #1 way to reduce your energy bill. These units automatically raise and lower the temperature to match your schedule and lifestyle. Lowering your winter temperature by 1 degree overnight will save 3% on your energy bill. Raising your summer temperature by 1 degree will also save.

Indoor & Outdoor Timers

Use electricity only when you need it. Many people leave lights on when they leave for work, or leave the air conditioner on all day. Timers can turn on lights, the air conditioner, pool pumps and holiday lights so the house is ready when you come home, to keep them off all day when they are not needed, and add to the mid day peaks.

Ceiling Fans

Saves you money several ways. When it's not too hot you can create a breeze to cool without air conditioning. When it's very hot you can set your thermostat a little higher and still be as comfortable. In the winter ceiling fans push the heat down from high ceilings.

Seasonal LED Lights

You can light up your life for holidays at a fraction of the cost. Seasonal light emitting diode (LED) strings use up to 95% less energy and last 7 times longer. They have no filaments or glass bulbs to break and produce very little heat, reducing the risk of fire.

EnerGuide for Houses

This home energy evaluation will help you plan energy efficiency retrofits that will *save you money*. A qualified energy advisor will evaluate where energy is being wasted. You will receive an EnerGuide for Houses rating along with a customized report with recommended improvements. Homeowners who complete recommended energy efficiency retrofits may qualify for a grant from the Government of Canada.

SAVE $5
Ceiling Fan
Brant County Power

SAVE $5
LED Lights - Seasonal
Brant County Power

Compact Fluorescent Lights
SAVE $3 /pack
Brant County Power

SAVE $15
Programmable Thermostat
Brant County Power

Timers Indoor - light & appliance
SAVE $1
Brant County Power

"Lighten Your Electricity Bill"

save money **with these coupons at**

CANADIAN TIRE

from Oct. 1, 2005 to Dec. 31, 2005

powerWISE

ENERGUIDE FOR HOUSES
Advice you can live with
RETRO
Residential Efficiency Training Resources Ontario
SAVE $20
Retro Limited

Timers Outdoor - pool & hot tub
SAVE $4
Brant County Power

Ontario's Electricity Utilities are joining forces to **save you money**

- Conserving electricity can help us to reduce the need to build new generation stations in the future.
- So come in to Canadian Tire this fall to redeem these coupons.

Look for ENERGY STAR® products

The **ENERGY STAR®** symbol or registered trademark identifies products that reduce energy use in your home. When you see the **ENERGY STAR®** symbol or registered trademark, you can be sure you're looking at the most energy efficient products on the market.

* The EnerGuide label and text is produced with permission of the Minister of Natural Resources Canada, 2005. The ENERGY STAR® mark is administered and promoted in Canada by Natural Resources Canada.

ENERGUIDE FOR HOUSES
Advice you can live with

Valid when you have an **'EnerGuide for Houses Evaluation'** performed by Retro 360.
To book your appointment call toll free 1 (866) 317-5878
www. retro-ontario.com

EXPIRY DATE: March 31, 2006 File number _____

Timers
Outdoor, pool & hot tub

Valid at point of purchase on any outdoor, pool or hot tub timer purchased at Canadian Tire between Oct. 1, 2005 and Dec. 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

Ceiling Fan

Valid at point of purchase on any ceiling fan purchased at Canadian Tire between Oct. 1, 2005 and Dec 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

Seasonal LED Lights

Valid at point of purchase on any Seasonal LED Lights purchased at Canadian Tire between Oct. 1, 2005 and Dec. 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

Compact Fluorescent Lights

Valid at point of purchase on any package of Compact Fluorescent Lights purchased at Canadian Tire between Oct. 1, 2005 and Dec. 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

Programmable Thermostat

Valid at point of purchase on any Programmable Thermostat purchased at Canadian Tire between Oct 1, 2005 and Dec 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

Timers
Indoor - light & appliance

Valid at point of purchase on any indoor tub timer purchased at Canadian Tire between Oct. 1, 2005 and Dec. 31, 2005. No copies or facsimiles.
To the Retailer: You will be reimbursed when you forward this coupon to Lighten Your Electricity Bill, 2 St. Clair Avenue East, Suite 1206, Toronto, Ontario, M4T 2T5 by January 15, 2006.

EXPIRY DATE: Dec. 31, 2005

"Lighten your Electricity Bill" with these Money Saving Coupons from & CANADIAN TIRE

Love electricity?

Hate the bill?

Lighten your electricity bill with money-saving coupons for great energy-efficient products.

Watch for your coupon insert in your electricity bill.

You'll find money-saving coupons for energy-efficient lights, thermostats, fans and timers. It's an easy way to reduce consumption, and reduce those electricity bills too.

Guelph Hydro Electric Systems Inc.

Wellington Electric Distribution Company

CANADIAN TIRE

6.5. Appendix E: Guelph Partnerships for Innovation Presentation

Please see attached presentation.

GUELPH HYDRO INC.

GPI BREAKFAST

January 13, 2005

Guelph Hydro Inc.

Guelph Hydro Inc.

Guelph Hydro
Electric Systems Inc.

Wellington
Electric Distribution Compan

FIBREWIRED™
By Guelph Hydro Inc.

electpower
AN AFFILIATE OF GUELPH HYDRO INC.

Eastview Generator

Our Connection to GPI

Our Vision:

"Powering community well being with energy and information solutions"

Our Commitment:

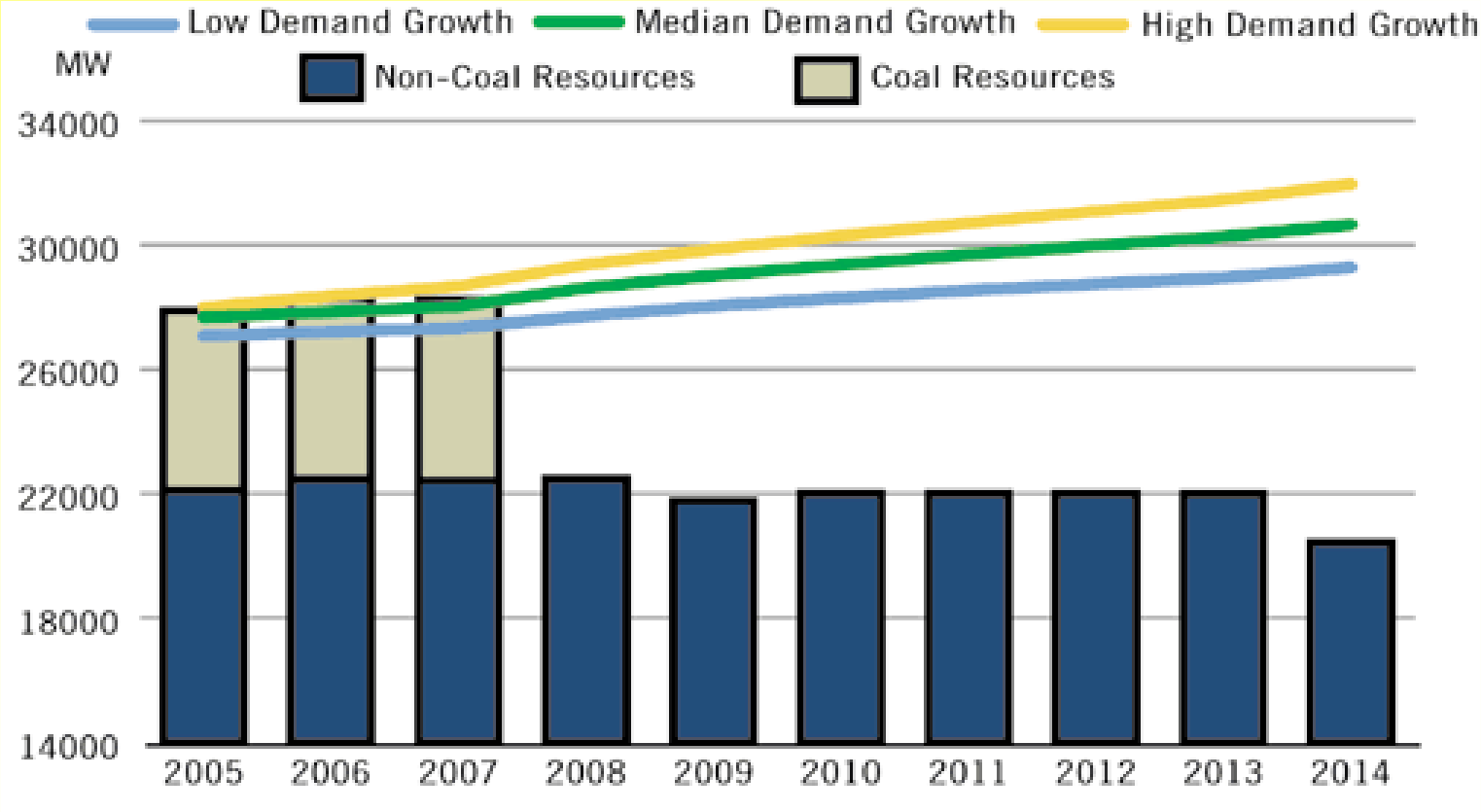
To innovation, conservation, the environment and the future.

Our Interest:

In actively seeking partnerships for energy management solutions.

Guelph Hydro Inc.

Resource Adequacy Outlook – Annual Peak



*** Source – Independent Market Operator**

CANADA LOVES ELECTRICITY

1. ***Canada is the third largest consumer of electricity in the world.***
2. ***Ontario is the largest consumer of energy in Canada.***

Guelph Hydro Inc.

ATTITUDE TO CONSERVATION

- **Single Most important Electricity issue**
  - **Price** **54%**
  - **Reliability of supply** **19%**
  - **Conservation** **4%**
  - **Renewable/alternative sources** **2%**

HOW DO YOU MEASURE UP?

- **Energy use per month on average?**
- **2 countries that use more electricity than Canada?**
- **3 appliances in the home with greatest electricity consumption ?**
- **What is the output capacity of the Eastview Landfill plant?**
- **How could you reduce your consumption today?**

Government reduction target

1,350 MegaWatt

FIVE TIMES Guelph's current peak demand

Guelph Hydro Inc.

What Can We Do ?

- *Innovation in Generation*
  - *alternative sources*
    - *Biomass (eg Farm waste for generation)*
    - *Solar*
    - *Wind*
- *Reduce demand & Shift demand to off-peak periods*
- *Create partnerships that benefit the community.*
- *Reward and recognize innovation and conservation.*

Guelph Hydro Inc.

GHI CONTACTS

NICOLE MAILLOUX 837 4721

JIM MACKENZIE 837 4702

THANK YOU!!

6.6. Appendix F: Switch to Cold Marketing Material

Please see attached advertisement, press release and article.

Turn on the cold, bring on the clean.

Guelph Hydro Electric Systems Inc.

Wellington Electric Distribution Company

MEDIA RELEASE Switch to Cold from Guelph Hydro

Release: On receipt
For further information, contact:
Nicole Mailloux: 519.837.4721

GUELPH HYDRO WANTS YOU TO GET A WHOLE LOT COLDER.

There is real money waiting to be saved in your laundry room.

In fact, if you start washing in cold water rather than warm or hot, you can immediately reduce energy consumption by as much as 620 kWh a year - which can mean more than $50 in annual savings for most households.

That's the message Guelph Hydro Electric Systems and Wellington Electric Distribution Company are hoping the community will receive when they launch their Switch to Cold program later this week.

Launched in cooperation with the Canadian Energy Efficiency Alliance, Switch to Cold is designed to help consumers save both money and energy by using cold water to do the laundry.

To encourage local consumers, Guelph Hydro will be distributing coupons with all bill inserts over the next few weeks. The coupons to **Switch to Cold** offer $1 off the cost of any Tide Coldwater detergent product made by Proctor and Gamble. The coupons can be used at any participating stores selling Tide products.

The coupons will be distributed while supplies last and consumers may use one coupon with each package purchased.

"Many consumers believe that they have to wash in hot water, just to get results", says Jim MacKenzie, CEO of Guelph Hydro.

"But, there are many coldwater detergent products on the market now that cut down energy use significantly - and that means lower utility bills. For example, if a washing machine is now set to hot/hot and is moved to cold/cold, that household can save up to $215 a year".

In addition, both utilities will encourage other Switch to Cold energy and money saving tips in the laundry room. For example, the average Canadian household does about 300 laundry washes a year, using over 42,000 litres of water. Washing with a full load each time can reduce this significantly. The dryer is a major energy burner. Instead of using the full dry cycle, stop it midway and allow clothes to hang to dry on a clothes rack. This also reduces the need to iron all clothes, as many will smooth out while drying.

... cont'd pg. 2

Guelph Hydro
Electric Systems Inc.

Wellington
Electric Distribution Company

cont'd from page 1

""When a customer follows these tips, he or she will use less electricity, which directly translates into savings on that customer's bill. In addition, we all save money by not having to pay for higher priced electricity which Ontario needs to import from outside the province whenever demand exceeds supply. Conservation is all about using electricity wisely to balance demand for electricity with supply to avoid electricity shortages and brownouts." said MacKenzie.

MacKenzie went on to say that "When we follow these tips, we not only save money and help to avoid shortages and brownouts, but we also reduce greenhouse gas emissions and water use. In fact, washing with cold water alone will contribute almost 20% of an individual household's effort to meet the Federal Government's One-Tonne Challenge goal to reduce gases".

Consumers looking for more tips can log onto www.switchtocold.com or the Guelph Hydro site at www.guelphhydro.com.

Sidebar

Make the Switch: Turning Dial to Cold Brings Energy and Cost Savings

Few Canadians realize how much energy is consumed in their laundry rooms. Find your current washing/rinsing method below and see approximately how much money and energy you could save by switching to cold water washing if you use an electric water heater:

Current Wash/ Rinse Cycle	Estimated annual cost savings from switching to Cold Wash/Cold Rinse	Annual Energy Savings (Kilowatt Hours) from switching to Cold Wash/Cold Rinse
Hot/Hot	$217	2590 kWh
Hot/Warm	$162	1935 kWh
Hot/Cold	$107	1280 kWh
Warm/Warm	$107	1280 kWh
Warm/Cold	$52	620 kWh
Cold/Cold	$0	0 kWh

(Figures are based on using a national average of 6.3 laundry loads per week, electric water heater set at 60 degrees Celsius/140 degrees Fahrenheit and 2002 Natural Resources Canada electricity costs.)

TURN ON THE COLD BRING ON THE ENERGY SAVINGS.

Did you know that 85 – 90% of the energy used to wash your clothes is used to heat the water? If you wash with warm water and rinse with cold water, switching to cold could save you up to ***$52 a year**** – your savings can double if you currently wash and rinse with warm. It makes good sense to switch your dial to cold.

BC hydro
POWER SMART
www.bchydro.com

proud sponsor of the
SWITCH TO COLD
campaign
www.switchtocold.com

See what you can save by washing and rinsing in cold.

Electric Heat

current washer setting	warm/cold	warm/warm	hot/cold	hot/warm	hot/hot
approx. savings* by switching to cold/cold	$52	$107	$107	$162	$217

* based on 6.3 loads/ week, electric water heater set at 60° C, and average national electricity usage costs.

Save $1 on ANY Tide Coldwater Detergent

EXPIRY DATE: 0000000 00 , 0000

DEALER: We will reimburse the face value of coupon plus our specified handling fee provided you accept it from your customer on purchase of brand specified. We in our sole discretion may refuse reimbursement where we suspect fraudulent redemption has occurred. **Applications for reimbursement received after 6 months from expiry date as indicated on this coupon, will not be accepted.** Reimbursement will be made only to retail distributors who redeemed coupon or holder of Procter & Gamble certificate of authority. For redemption mail to: P&G, P.O. BOX 3000, SAINT JOHN, NB, E2L 4L3. GST/HST/QST and provincial sales tax (where applicable) are included in face value of coupon.

CONSUMER: Limit one coupon per purchase. Valid only in Canada. Valid only on purchase of any Tide Coldwater detergent.

Procter & Gamble Inc., Toronto, Ontario.

Tide Coldwater

Turn on the cold, bring on the clean.

proud sponsor of the SWITCH TO COLD campaign

www.switchtocold.com

Tide Coldwater. Specially formulated for cold water cleaning.

Store Coupon

Save

$1

on ANY Tide Coldwater Detergent

EXPIRY DATE: 00000 00, 0000

Benefits of cold-water laundry touted

Guelph Hydro says homeowners can save energy, money by forgoing hot-water cycle

By Vik Kirsch
Mercury staff

GUELPH

Guelph Hydro is urging homeowners to start washing their clothes in cold water to help the province cut back on skyrocketing power consumption.

The utility is dangling the prospect of saving more than $200 a year in hydro costs to its 40,000 customers if they wash their whites and colours in cold water as opposed to hot.

Guelph Hydro estimates about a $217 annual saving for the average local household who washes and rinses in cold water instead of hot, while reducing energy use by almost 2,600 kilowatt hours, said Nicole Mailloux, the utility's conservation vice-president.

It makes sense for Guelph Hydro's customers to look at all means of conserving energy, including in the laundry room, Mailloux said.

"It's another tool in the energy kit," said Mailloux.

Guelph Hydro, in conjunction with a national conservation group, is also offering a little incentive — $1 off the cost of Tide Coldwater detergent, a gift from a Toronto-based conservation group called the Canadian Energy Efficiency Alliance.

Alliance spokesperson Fiona Oliver said the Tide division of Proctor and Gamble is participating in its Switch To Cold program with the discount coupons, but any cold water detergent should work well.

"We're interested to see people move to more energy-efficient behaviours," Oliver said.

Elvina Milson washes some of her clothes in warm water, but isn't ruling out a switch to cold to cut power consumption.

"I do use cold for washing the dark clothes and for whites warm (water), but always cold rinse," the Guelph resident said yesterday.

"I've done that for a long, long time."

However, the 68-year-old is considering Guelph Hydro's appeal to consume less power by washing her whites in cold.

"I might try it — if the hydro (rate) keeps going up and up," Milson said.

Reducing laundry energy use benefits both the consumer — by cutting their hydro bills— and the province through reduced power consumption, said Keith Stewart, spokesperson for the Toronto Environmental Alliance.

He estimates it costs three to five cents to wash a laundry load in cold water, compared to 60 to 70 cents in hot water.

"You have an enormous reduction in the energy you use," he said.

"Twenty per cent of energy used in your average home is for hot water, and a big chunk of that goes to washing clothes.

"It's energy and money that goes up in smoke that doesn't need to."

Cold water gets clothes clean without degrading the fabrics the way hot water does, Stewart added.

This summer saw high temperatures for extended periods of time in Ontario, forcing the province to import power.

Among the energy-saving measures suggested by the province, residents were urged to set their air conditioners higher.

Mailloux conceded that Guelph Hydro will lose revenue if residents cut energy use, "but we are concerned with the (power) supply demand issue in the province," she said.

While homeowners are using air conditioners less now that fall's arrived, Mailloux said the new cold water-hot water initiative keeps conservation on people's minds.

"Air conditioning is a big item, followed by heating, but the laundry room is another high-energy usage area," she said.

vkirsch@guelphmercury.com

Guelph Mercury Sept 22-2005

WE'D LIKE YOU TO GET A WHOLE LOT COLDER!

With winter coming, we'd like to encourage you to get colder!

In the laundry room, that is.

Because if you Switch to Cold Water when you do your laundry, you could save anywhere from $50- $215 dollars annually depending on your current washer settings – not to mention a whole lot of energy.

That's why we're offering special Switch to Cold coupons that save you $1 on any Tide Coldwater Detergent products at participating stores throughout the community. Look for the coupons in your bill inserts, cash them in - and start saving on water costs right away!

Your laundry room is one of the most expensive rooms in your home. So, Switch to Cold today - and look for other ways to save money in the laundry room at www.switchtocold.com or www.guelphhydro.com

Guelph Hydro Electric Systems Inc.

Wellington Electric Distribution Company

THE SAVINGS YOU GENERATE WILL MAKE YOU WARM INSIDE!

Offered in conjunction with the Canadian Energy Efficiency Alliance and Proctor and Gamble Inc.

6.7. Appendix G: Switch and Save Marketing Material

Please see attached flyer/advertisement.

Guelph Hydro Air Conditioner Switch n' Save

Out with the old and in with a NEW Energy-STAR® rated air conditioner

SAVE up to $120

Bring your old operational air conditioner to the **Selectpower Energy Store 381 Elmira Rd N** and Guelph Hydro will give you $40 to $50 toward a new Energy STAR®-rated window air conditioner*

PLUS Selectpower will give you an additional $70 off for a **total savings of up to $120**

An Energy-STAR rated window air conditioner uses 30 to 70% less energy

You changed the curtains, donated the dress... it's time to replace the air conditioner. Switch today and save.

Guelph Hydro
Electric Systems Inc.

Stay Cool and Save

- Close drapes during the day and open windows at night and use fans instead of using your air conditioner.
- Use a fan with your window air conditioner to move the cool air around your home.
- A programmable thermostat will adjust the temperature at night or when no one's home.
- Shade your windows. Sunny windows can make your air conditioner work 2 to 3 times harder.
- Don't place lamps or TVs near your air conditioning thermostat. The heat from these appliances will cause the air conditioner to run longer.
- do housework (dishwashers, laundry etc.) after 8:00pm
- Visit **www.energystar.gov** for more energy saving ideas.

SAVE up to 50% on cooling costs this summer

Selectpower
ENERGY-SMART SOLUTIONS

Selectpower Energy Store
381 Elmira Road N
Mon-Fri 10-5 Sat 10-4
519.780.1209

* Offer exclusive to select horizontal Danby 7000BTU and 10000BTU Energy STAR-rated models at Selectpower. Some conditions apply. See store for details.

6.8. Appendix H: LED Traffic Lights TRC Detail (2 pages)

Guelph Hydro
Traffic Lights - LED replacement

		2005
Number of traffic lights		77
Number of Signals		20
Annual Maintenance Savings	$	22,158
Program Capital Costs	$	491,943
Discount Rate		**7.63%**
Life Cycle : 10 years		
NPV of Energy Saving	$	505,042
NPV of annual Maintenance savings	$	163,868
TRC Benefits	$	668,911
Equipment Cost	$	492,667
Incentive from Guelph		40,000
TEAM Cost		1,251
Internal indirect cost		405
GHESI gross expenditure		**41,655**
TRC Benefit	**$**	**668,911**
TRC Cost (not including incentive)		494,322
Net TRC		174,589
Benefit to Cost Ratio		1.353
GHESI Cost/kWh saved	$	0.006

Maintenance Savings NPV

		Maintenance Savin		Energy Saving
2006	$	23,300	$	71,811
2007	$	23,766	$	73,247
2008	$	24,241	$	74,712
2009	$	24,726	$	76,206
2010	$	25,221	$	77,730
2011	$	25,725	$	79,285
2012	$	26,240	$	80,870
2013	$	26,764	$	82,488
2014	$	27,300	$	84,138
2015	$	27,846	$	85,820
npv		$172,061.63		$530,294.46

LED Traffic Lights TRC Detail (Page 2)

Assumptions

1. Used projection of ultimate kWh savings per signal as follows:
a. Traffic - current 857 - future 173 = 684 savings/month
b. Crosswalk - current 253 - future 81 = 172 savings/month
2. For 2005, number of signals replaced as follows:
a. Traffic - 77 of 81
b. Crosswalk - 20 of 21 — traffic
Balance will be replaced in 2006 — Crosswalk
3. Annual maintenance savings to start in 2006.
4. Used 10 year life

2005	Saving/unit/month kWh	Annual saving kWh	Annual $ Saving
77	684	632016	$ 64,086.42
20	172	41280	$ 4,185.79
97		673296	$ 68,272.21

2006	Saving/unit kWh	Annual saving kWh	Annual $ Saving
81	684	664848	$ 67,415.59
21	172	43344	$ 4,395.08
102		708192	$ 71,810.67

6.9. Appendix I: Solar Hot Water TRC Detail

Baseline hot water requirement			
Based on 95 staff at 0.6 gallon a day			
Annual hot water requirement		78.75	m3
		20805	gallons
Total electricity saved per year =		4,814	kWh
Estimated Extra Gas Required for booster, assuming 20% of the hot water heating requirement			
at	0.36 GJ/m3	5.669796	GJ
	9.5508 m3 gas/m3	54	m3
at	$0.43 per m3	$23.41	per year

Interest Rate		7.63%			
TRC Benefit		Electricity Saved kWh	Electricity Cost Saved $/KWh	Extra Gas Expenditu	Net Annual Benefit
			$ 0.093		
	2006	4,814	$ 447.75	-$59.00	$ 388.75
	2007	4,814	$ 456.71	-$60.18	$ 396.53
	2008	4,814	$ 465.84	-$61.38	$ 404.46
	2009	4,814	$ 475.16	-$62.61	$ 412.55
	2010	4,814	$ 484.66	-$63.86	$ 420.80
	2011	4,814	$ 494.35	-$65.14	$ 429.22
	2012	4,814	$ 504.24	-$66.44	$ 437.80
	2013	4,814	$ 514.33	-$67.77	$ 446.56
	2014	4,814	$ 524.61	-$69.12	$ 455.49
	2015	4,814	$ 535.10	-$70.51	$ 464.60
	2016	4,814	$ 545.81	-$71.92	$ 473.89
	2017	4,814	$ 556.72	-$73.36	$ 483.37
	2018	4,814	$ 567.86	-$74.82	$ 493.03
	2019	4,814	$ 579.21	-$76.32	$ 502.89
	2020	4,814	$ 590.80	-$77.85	$ 512.95
	2021	4,814	$ 602.61	-$79.40	$ 523.21
	2022	4,814	$ 614.67	-$80.99	$ 533.68
	2023	4,814	$ 626.96	-$82.61	$ 544.35
	2024	4,814	$ 639.50	-$84.26	$ 555.24
	2025	4,814	$ 652.29	-$85.95	$ 566.34
		96,287			$4,549.11

TRC Results:

TRC Benefits ($):		*$4,549.11*
TRC Costs ($):		
Utility program cost (less incentives):	$	3,282.00
Participant cost:	$	26,000.00
Total TRC costs:	$	29,282.00
Net TRC (in year CDN $):		-24,732.89
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.16

6.10. Appendix J: Geothermal TRC Detail

Geothermal Phase 2
20 year life
Discount Rate **7.63%**
Electricity Saving 30% @ $ 0.093 per kWh
Natural Gas Saving 30% @ $0.43 per m3 Rate 6

Year #	Year Hours/Perioc	Based Annual Energy Usage kWh/yr	Energy Efficient Energy UsgaekWh/yr	Total Annual Savings (kwh)	Annual Electricity Savings	Annual Natural Gas Reduction (m3)	Annual Natural Gas Savings	Total Electricity & Gas Benefit
1	2006	1,817,613	1,272,329	545,284	50,713	7,209	$ 3,117	$ 53,830
2	2007	1,817,613	1,272,329	545,284	51,727	7,209	$ 3,179	$ 54,906
3	2008	1,817,613	1,272,329	545,284	52,762	7,209	$ 3,243	$ 56,005
4	2009	1,817,613	1,272,329	545,284	53,817	7,209	$ 3,308	$ 57,125
5	2010	1,817,613	1,272,329	545,284	54,894	7,209	$ 3,374	$ 58,267
6	2011	1,817,613	1,272,329	545,284	55,991	7,209	$ 3,441	$ 59,433
7	2012	1,817,613	1,272,329	545,284	57,111	7,209	$ 3,510	$ 60,621
8	2013	1,817,613	1,272,329	545,284	58,253	7,209	$ 3,580	$ 61,834
9	2014	1,817,613	1,272,329	545,284	59,419	7,209	$ 3,652	$ 63,070
10	2015	1,817,613	1,272,329	545,284	60,607	7,209	$ 3,725	$ 64,332
11	2016	1,817,613	1,272,329	545,284	61,819	7,209	$ 3,799	$ 65,618
12	2017	1,817,613	1,272,329	545,284	63,055	7,209	$ 3,875	$ 66,931
13	2018	1,817,613	1,272,329	545,284	64,317	7,209	$ 3,953	$ 68,269
14	2019	1,817,613	1,272,329	545,284	65,603	7,209	$ 4,032	$ 69,635
15	2020	1,817,613	1,272,329	545,284	66,915	7,209	$ 4,112	$ 71,027
16	2021	1,817,613	1,272,329	545,284	68,253	7,209	$ 4,195	$ 72,448
17	2022	1,817,613	1,272,329	545,284	69,618	7,209	$ 4,279	$ 73,897
18	2023	1,817,613	1,272,329	545,284	71,011	7,209	$ 4,364	$ 75,375
19	2024	1,817,613	1,272,329	545,284	72,431	7,209	$ 4,451	$ 76,882
20	2025	1,817,613	1,272,329	545,284	73,879	7,209	$ 4,540	$ 78,420
Net Present Value				10,905,680	$593,434	144,186	$36,471	$629,905

TRC Results:

TRC Benefits ($):	*$629,905*
TRC Costs ($):	
Utility program cost (less incentives):	$42,027
Participant cost:	$230,000
Total TRC costs:	$272,027
Net TRC (in 2006 CDN $):	$ 357,878
Benefit to Cost Ratio (TRC Benefits/T	2.32