CHEC-RP-2004-0203/EB-2004-0502

Conservation and Demand Annual Report

1.0 Introduction:

This report summarizes the activity and successes of the Cornerstone Hydro Electric Concepts (CHEC) Group with respect to conservation and demand management undertaken in 2005. Included in this document are the sixteen (16) individual reports from the CHEC members that discuss their specific program activities and the associated insights of the members.

Consistent with CHEC members' cooperative effort to seek approval of their CDM plans as a combined group, the Annual Report reflects their commitment to work together to provide cost effective programs and to share and learn from each other's experience. Although this report is submitted as one document it is clear from the individual reports that each utility brings its own perspective and goals to the CDM activities.

Within the 16 utilities there have been a total of ninety-two (92) initiatives. These initiatives represent projects specific to individual utilities and others that are similar or a cooperative effort between utilities (Conservation Website, EnergyShop.com). Some utilities have focused on promoting and providing energy efficient technology to their customers with the associated kWh savings, while others have been more focused on laying the foundation for future programs. To achieve the "conservation culture", the overriding goal in Ontario, both types play an important role.

CHEC with its dynamic relationship, positions members well to learn from and leverage the experience of others. The combined report as well as meeting the regulatory requirement, provides a comprehensive summary to CHEC members. This report will help to provide additional insights, as utility staff plan and implement the 2006 and 2007 programs.

The experiences gained in 2005 will be invaluable for the continued development of CDM and the ability to move forward programs that save energy and develop the conservation culture. The experiences gained over 2005 add to the collective knowledge of the industry and sets the stage for on-going improvement in the development, delivery, monitoring and reporting of CDM initiatives.

2.0 CHEC Members:

The 2005 Annual Report on Conservation and Demand Management Activities of the following utilities are included in this report:

Centre Wellington Hydro Ltd.	Collus Power Corp
Grand Valley Energy Inc.	Innisfil Hydro
Lakefront Utilities Inc.	Lakeland Power Distribution
Midland Power Utility Corp.	Orangeville Hydro Ltd
Orillia Power Distribution Corp.	Parry Sound Power
Rideau St. Lawrence	Wasaga Distribution Inc.
Wellington North Power Inc.	West Coast Huron Energy Inc.
Westario Power	Woodstock Hydro Services

3.0 Evaluation of the CDM Plan:

Total Portfolio: The 16 CHEC members collectively ran a total of 92 programs. These programs fell within three categories:

- Savings: Delivery of energy saving products or processes: coupons, rebates, free products, etc.
- Education: Providing general energy management information through such activities as: website development, workshops, brochures, etc,
- Foundation: Preparatory work for future programs that include: program research and development, energy audits, system studies, demonstration projects, partnerships, etc.

The program results represent a total energy savings of 29,760,749 kWh at a combined "Utility Cost" of $908,387 or approximately 3c/kWh. This low cost of energy saved was achieved while providing both education and foundation building programs in addition to the specific initiatives aimed at savings kWh. To put the energy savings in perspective the 29.7 Million kWh represent the annual energy required by 2,400 homes (at 1000 kWh/month).

Figure 1 and Figure 2 illustrates the breakdown of the programs into the three types. From the figure it can be seen that cost and activity generally correlate. Programs aimed at immediate kWh savings represent 36% of the cost while they represent 27% of the programs delivered during the year. Education and Foundation programs, that are expected to return improved kWh savings in the future, represent 64% of the cost and 73% of the activity. **From the spending and activity level in the different categories it can be seen that 2005 while providing energy savings has focused on preparing for year two and three of CDM delivery.**

Figure 1

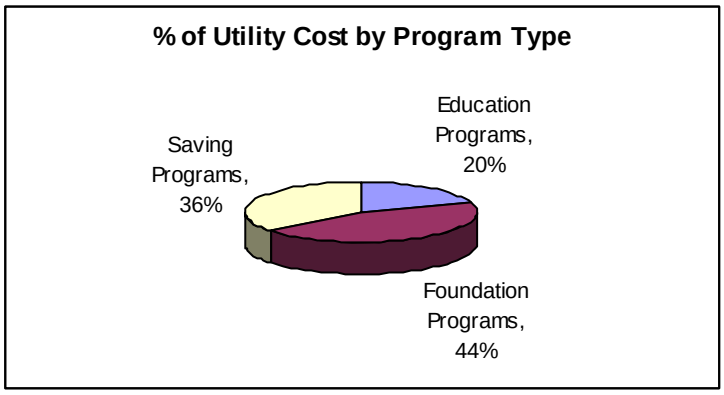
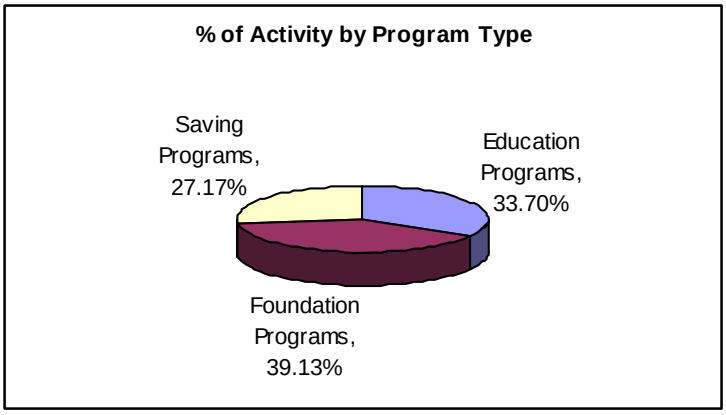


Figure 2



Savings Programs: The programs aimed at immediate results focused on energy savings rather than peak demand. The average cost of energy saved through the "Energy Savings" programs was 1.1c/kWh.

The use of product incentives and give-a-ways contributed significantly to achieving immediate energy savings. Programs such as the "Lighten Your Electricity Bill" and local product incentives such as CFL distribution programs resulted in energy savings throughout the membership. The wide scale programs provided an economy of scale while the local programs built on relationships and resources within the community. The product focused programs represented a utility cost of $163,400 and a lifetime energy savings of 15,692,800 kWh or 1.1c/kWh.

Four system optimization projects (out of a total of twelve) involved field changes completed in 2005 that captured energy savings. The four field projects represent a utility cost of $163,300 and a lifetime energy savings of 12,793,000 kWh or 1.3c/kWh (note: one program pending review to confirm savings).

Education Programs: These programs while not generating any immediate savings represent the future of CDM within the Province. Incentive programs while providing immediate savings cannot on their own change behaviour within the customer group. Programs aimed at increasing the customer's knowledge of energy use is required if long term savings are desired. As the saying goes – If you give a person a CFL you provide energy savings for 4 years. If you provide a person with the knowledge to save energy you provide energy savings for a lifetime. This is the role of the education programs.

Twenty percent of the total utility cost was spent on providing education to the customers. The activities within this classification vary from providing brochures to detailed customer workshops. Although the results of these programs are not immediate it is believed that they will impact positively on customer participation in future programs and prepare customers to make informed decisions with regards to energy use.

CHEC is in the process of developing a website focused on energy conservation. The website in addition to providing energy management knowledge to the customers will also allow the effective exchange of CDM information between CHEC members. The website funding includes dollars to allow the CHEC membership to engage external resources to assist in developing the site and also assist members with CDM issues of common interest.

It is interesting to note in the "Education" section the experience of one CHEC member (Orillia) with success from an industrial workshop. As a direct result of a "Dollar to Sense" workshop changes were made in an industrial setting that resulted in quantifiable savings. These results were captured because the customer communicated the action and potential energy savings to the utility. The savings of 255,000 kWh annually, clearly illustrates the role "education" can play in obtaining significant energy savings.

Foundation Program: These programs are those initiatives aimed at developing programs that will provide savings in the future. Thirty nine percent of the programs (44% of utility cost) focused on research and development of programs that will be delivered in year two and three of the CDM Plan. At the end of the reporting period however the programs have not been rolled out or have not generated any savings to date. For the purpose of reporting, projected savings have generally not been utilized.

Foundation Programs include initiatives such as: system optimization studies, smart meter preparation, customer audits, demonstration projects and relationship building, to name a few. Unlike education, where the activity is geared to the customer, these programs are aimed at ensuring the appropriate information and processes for the CDM activity of future years. Approaching the end of the first quarter of 2006 it is apparent that there are a number of programs that are moving

forward as a direct result of the foundation work completed in 2005 (e.g. Woodstock finance plan, Orangeville Reduce the Juice)

Net TRC Results: The net TRC result of the combined CHEC CDM activity for 2005 is $499,756. Although a large number, it is difficult to determine if this represents good success of the overall portfolio. While net TRC measures the dollar benefits of avoided electrical energy cost it does not measure the education and development work that is associated with an on-going CDM program.

Reviewing the individual reports of the CHEC members indicates that ten of the members had positive Net TRCs while six had negative Net TRCs. In isolation one may conclude that anything but a positive TRC is undesirable. However it is proposed that the TRC for the first year of a multi-year program does not reflect the overall value of the effort undertaken and that the overall activity of the utility should be taken into account.

As noted above there has been a significant amount of education and foundation work undertaken by CHEC members. The individual reports indicate a mix of approaches with some focusing on preparatory work, others on immediate deliverables and others on a mix of programs. Depending on the success of programs aimed at delivering immediate savings and the cost of education and foundation programs the Net TRC will vary**. Through the sharing of program information and outcomes CHEC members will be able to learn from each others' experiences to continue to deliver effective CDM programs in the future.**

4.0 Discussion of Programs:

The individual program discussions from each utility should be examined. These discussions provide the individual utility perspective on the programs as offered in their service territory. The complete Annual CDM Report for each utility is included in the appendices. One copy of the SeeLine Total Resource Cost Test Assessment of the '2005 Lighten Your Electricity Bill' Program is also included in the appendices as a sample of the program evaluation process for the coupon program as reported in CHEC members' reports.

5.0 Lessons Learned:

Each utility report included in the attached appendices includes lessons learned from the 2005 CDM experience for each utility. Although a flavour of the "lessons learned" is summarized in this section the reader is encouraged to review the individual reports for additional insights.

Application of TRC: This report represents the first large scale application of TRC for the evaluation of CD&M programs in Ontario. The TRC model, while forming a base, is seen to encourage "quick return" programs and does not provide any measure of foundation or education programs that are so critical to developing a "conservation culture". It is believed that for future year evaluation of CDM activities the TRC tool needs to be expanded to take into account education and foundation type programs.

Familiarity has been gained with the TRC tool over the past reporting year. The OEB's initiative to provide a set of assumptions assisted with the evaluation of programs and reporting. The need to continue to refine and add to the list of assumptions for cost effective evaluation is evident. The evaluation process for programs also fails to capture additional activities of customers that are driven through exposure to programs where consumers are not directly taking advantage of a particular coupon or rebate.

Experience gained in reporting the activities of 2005 also indicates the need to ensure that measures of programs are understood at the program design stage. For education programs, in addition to some modification of the TRC model to better recognize the benefits of these programs, mechanisms for obtaining feedback from customers is required. These mechanisms however must be cost effective.

Funding: There remains significant third tranche dollars for the continued delivery of CDM programs in 2006 and potentially 2007. However, if CDM is to continue members will be required to submit applications for additional CDM expenditures. A simplified approval process is required to allow utilities to obtain appropriate CDM funding without being encumbered with a full rate hearing on these items. In addition, as noted above, the TRC tool requires modification to provide value to education and foundation programs. A continued lack of recognition of the value of these types of programs will focus utilities on programs that deliver immediate positive TRC result, a condition that will not foster a "conservation culture".

Partnerships and Sharing: CHEC by its' very existence is about partnerships and sharing. CHEC members are working together to move forward CDM in their service territories. In addition CHEC members have been active participants in local and provincial wide initiatives to build relationships and take advantage of scale. It is believed through these types of endeavours, the "best bang for the buck" can be achieved for the customer.

Province wide initiatives are generally supported by CHEC members as a good way to enter into partnerships with the OPA, manufacturers, contractors, and retail outlets in order to deliver cost effective programming. Within these programs the ability to provide local support and branding is important to allow the existing positive relationship that the local utility enjoys with its customers to be leveraged.

Foundation Year: Many of the CHEC members note in their report the "foundation building" nature of 2005. The ability of the industry to come up to speed is noted as well as the development of programs and guidelines associated with CDM. All CDM participants have been learning over 2005.

Much of the work completed in 2005 sets the stage for the next two years. With a mix of delivered savings, education and investigation of programs CHEC and the industry have prepared for continued CDM over the next two years and beyond.

Customer Readiness: The success of the residential programs offered to customers indicates the readiness of customers to take action to control their energy use and costs. Obtaining resources for utilities to design and deliver commercial and industrial programs requires further attention. The energy savings within these sectors can be extensive, however the lead time for design, delivery and customer implementation is much longer. Members recognize that much of the issue with this sector is the limited resources (time and money) the customers have to put on energy management. Successfully meeting the needs of this sector will require further effort and sharing of projects that have proved successful.

Utility Resources: To-date utilities have not generally increased internal resources to address the CDM portfolio. Utilities have worked the additional CDM demands into existing work loads by placing other issues at a lower priority. Continuation of this arrangement is not sustainable over the long term. Recognition of the impact that continued CDM programming has on resources is required in both the funding and reporting requirements. As noted above under "Funding" a simplified method for accessing CDM funding is required to ensure the appropriate resources are put in place to support the appropriate level of CDM activity.

6.0 Conclusion:

The first year of CDM has been a learning or foundation year. The CHEC members look back on their projects to date and recognize there has been significant learning. As the individual reports indicate there continues to be a commitment to CDM with utilities looking to capture future benefits from the work done in 2005.

CHEC members have delivered energy savings while increasing the collective knowledge of the CDM industry. CHEC members have demonstrated a willingness to be fully engaged in the process. Through the continued sharing of information and programs between members and other organizations, CHEC will continue to play an important role in the design, delivery and reporting of CDM for the benefit of their customers.

7.0 Appendices:

Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System				
Net TRC value ($):	*$499,756*										
Benefit to cost ratio:	*1.582*										
Number of participants or units delivered:	*115,815.00*		**Summary of CHEC Appendices A**								
Total KWh to be saved over the lifecycle of the plan (kWh):	*29,760,746.70*		Detailed A's follow for all CHEC Utilities								
Total in year kWh saved (kWh):	*3,048,702.30*		Utilities arranged alphabetically								
Total peak demand saved (kW):	*329.19*										
Total kWh saved as a percentage of total kWh delivered (%):											
Peak kW saved as a percentage of LDC peak kW load (%):											
Gross in year C&DM expenditures ($):	*$908,385.27*										
Expenditures per KWh saved ($/kWh):*	$0.0305										
*Expenditures per KW saved ($/kW)**:*	$2,759.4849										

Goderich Hydro Conservation & Demand Side Management Annual Report

March 17, 2006

By: Cameron A. Straughan, B.Sc., M.E.S.

Introduction

This report - filed on March 17, 2006 - is a summary of Goderich Hydro's Conservation and Demand Management (CDM) projects for the period of January 1, 2005 to December 31, 2005. This time period represents the first year of Goderich Hydro's three year CDM plan.

During this reporting period, Goderich Hydro's "Lighten Your Electricity Bill" coupon incentive project generated significant kWhr savings. However, most projects were designed to develop a conservation culture, laying the foundation for future Tier Two projects. Since these foundation building projects did not generate quantifiable energy savings, it was difficult to determine their Net Benefit using the TRC spreadsheets. However, qualitative data and information from project partners suggested that these projects achieved their goals.

For the purposes of this report, portfolio costs are included in their own TRC spreadsheet. Portfolio costs were covered by Goderich Hydro and the Town of Goderich.

Evaluation

2005 Lighten Your Electricity Bill Program

Goderich Hydro's partnership with Energyshop and the Canadian Tire Corporation was a tremendous success. Bill inserts delivered valuable energy-savings coupons to help residents reduce their electricity bill. When customers used the coupons to purchase energy efficient products at Canadian Tire, detailed information regarding the efficiency of each product was easily collected

Overall, the "Lighten Your Electricity Bill" coupon program exceeded participation targets and generated significant savings. Customer uptake was 6% - far exceeding the predicted 3% uptake. In the final report, completed by the SeeLine Group, the program achieved 6.31 Winter Peak kW Savings. This is an encouraging result for a Local Distribution Company (LDC) with peak winter demands. Annual kWh Savings in Year and Lifecycle kWh Savings were also significant.

Aside from having a positive Net Benefit, the program was an important foundation building exercise. It actively engaged each participating household in a burgeoning conservation culture without requiring a major financial investment on their part. It familiarized customers with energy efficient technology and helped alleviate the fear of trying something new.

EnerGuide Home Evaluations

By all accounts, the EnerGuide Home Evaluations were a success. The Residential Energy Efficiency Project (REEP) reported that bookings for evaluations went quickly, the number of homes evaluated exceeded targets, and customer feedback was “very positive”.

The EnerGuide Home Evaluations were a success because of the partnership between Goderich Hydro and REEP. REEP acknowledged that “it is a positive indicator that the coupon incentive offered by Goderich Hydro is a major motivator to the hydro consuming public”. Thus, one CDM project helped set the foundation for another. Despite a negative Net Benefit of $100, the program generated strong public interest and program recommendations encouraged the implementation of energy efficient upgrades and retrofits. The average annual energy savings per participating household, based on coast to coast data, it is estimated at $719.

The EnerGuide Home Evaluations offered residents a tangible, unbiased, science-based road map to future energy efficiency and savings. The program offered Goderich Hydro a viable option for customers who were very upset with their hydro bill.

Smart Meter Pilot Project

By attending util-assist’s workshops, Goderich Hydro received valuable information regarding Smart Meters. Despite a negative Net Benefit, the foundation was laid for future smart metering projects.

Energy Conservation Web Site

The energy conservation Web site is currently under development, thus it can not be evaluated. However, once completed, the Web site will encourage a conservation culture with measurable results. Energy savings could be measured by up-take of programs, message penetration analysis, redemption of on-line discount coupons, and reports on Web site traffic.

Portfolio Costs

The portfolio costs represent a negative Net Benefit; however, considering that this is year one of Goderich Hydro’s CDM plan, the overall costs are low. In addition, these expenditures are essential for Goderich Hydro to maintain active membership in Cornerstone Hydro Electric Concepts (CHEC) and fully explore CDM opportunities.

Employee hours comprised the bulk of expenditures, followed by costs related to attending CHEC meetings in Orangeville. Overall, the portfolio costs represent a significant team effort by employees of Goderich Hydro and the Town of Goderich.

Lessons Learned

2005 Lighten Your Electricity Bill Program

Higher than predicted program uptake was likely due to a combination of bill inserts, customer desire to conserve energy, coupon incentives, and the partnership with Canadian Tire – a trusted, popular local business.

In the future, more lead time is required so that the program's promotional activities can be coordinated with Canadian Tire's promotions. It is predicted that this will result in much higher customer uptake.

EnerGuide Home Evaluations

Part of the success of the EnerGuide Home Evaluations must be attributed to the financial incentives. REEP charged Goderich Hydro customers 44% of their usual rate and Goderich Hydro provided a $50 subsidy for each participating household. The subsidies proved to be a powerful example of "putting your money where your mouth is". Customers greatly appreciated the fact that Goderich Hydro was willing to make an investment to coincide with requests to conserve electricity.

Bill inserts were instrumental in encouraging bookings. They helped inform the public and clear up confusion regarding the services REEP provided. Plans are being made for increased marketing and awareness of the EnerGuide Home Evaluations project, including another round of customer appreciation recognitions. In the future, REEP would like to see rural households serviced via expanded partnerships with the utility community.

Smart Meter Pilot Project

Unfortunately, the Smart Meter Pilot Project ended prematurely for reasons beyond CHEC's control. However, it is hoped that some of the work accomplished during those workshops will be transferable to future initiatives.

Energy Conservation Web Site

Since the energy conservation Web site is currently under development, there are no lessons to report.

Portfolio Costs

There was considerable debate regarding what should be included in the portfolio costs. This suggests that clearer guidelines are required. Hopefully, following this reporting period, some recommendations can be made. Perhaps a standardised portfolio expense form is required, allowing for accurate bookkeeping amongst all participating LDCs. Despite these concerns, reporting portfolio costs in a separate TRC spreadsheet is a good idea. If these costs had to be separated out and included within each respective CDM project report, it would have generated more debate and uncertainty.

Conclusion

During year one of Goderich Hydro's CDM plan, only the "Lighten Your Energy Bill" Canadian Tire coupon program achieved a positive Net Benefit. However, the other four projects included in this reporting period were all successful foundation building exercises. In fact, not only did year one CDM projects help build the foundations for future Tier Two projects, but many projects cross-pollinated concurrent projects. For example, the success of the coupon program was cited as a positive influence on the EnerGuide Home Evaluations program, which exceeded all expectations.

With regards to project penetration, this report highlights two methods that should be repeated in the future. The combination of bill inserts and financial incentives were extremely instrumental in encouraging customer uptake.

Overall, year one CDM projects forged several valuable contacts and partnerships. Projects also encouraged a strong teamwork ethic amongst staff from Goderich Hydro and the Town of Goderich. Membership in CHEC was instrumental in developing and maintaining these bonds. In particular, Goderich Hydro looks forward to feedback from fellow CHEC members. Combined, our year one reports are an invaluable source of information and support that will ensure a sound foundation for future projects

Thanks to successful year one efforts, Goderich Hydro will transition into year two with the skills, experience, education, and confidence required to create an energy conservation culture that will best serve the needs of its customers.

Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Other 1	Other 2	Other 3	Other 4
Net TRC value ($):	-$5,279	$8,749						-$4,800	-$1,622	-$1,636	-$5,969
Benefit to cost ratio:	0.7	3.44						0	0	0	0
Number of participants or units delivered:	331.00	282.00						1	1	0	47
Total KWh to be saved over the lifecycle of the plan (kWh):	273499.00	273499.00						0	0	0	0
Total in year kWh saved (kWh):	27266.00	27266.00						0	0	0	0
Total peak demand saved (kW):	6.31	6.31						0	0	0	0
Total kWh saved as a percentage of total kWh delivered (%):	0.098%	0.098%						0	0	0	0
Peak kW saved as a percentage of LDC peak kW load (%):	0.00	0.00						0	0	0	0
Gross in year C&DM expenditures ($):	$14,282	$2,134						$4,800	$1,622	$1,636	$4,089
Expenditures per KWh saved ($/kWh):*	0.0522	0.0078						$0	$0	$0	NA
*Expenditures per KW saved ($/kW)**:*								$0	$0	$0	NA

Utility discount rate (%):	8.56

*Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
**Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Goderich Hydro CDM Portfolio Costs

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

Portfolio costs include expenditures not specific to a CDM project. These expenditures include staff training, travel expenses, administrative support, distributing pamphlets, and employee hours spent on CDM projects in general. All portfolio costs are necessary to maintain active membership in CHEC and follow through on CDM initiatives. The activities of both Goderich Hydro and Town of Goderich employees are included in the portfolio costs. Each employee kept records of CDM-related work they performed.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	0		
Efficient technology:	0		
Number of participants or units delivered:	1.00		
Measure life (years):	0.00		

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 4,800.01	Includes Discounted Measures Cost
	Participant cost:	$ -	0
	Total TRC costs:	$ 4,800.01	
Net TRC (in year CDN $):		-$4,800.01	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.00	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		0.00
	Winter		0.00
Energy saved (kWh):		*0.00*	0.00
Other resources saved :			
Natural Gas (m3):		0	0
Water (l)		0	0
Expenditures per kWh Saved ($/kWh)		#DIV/0!	
Expenditures per kW Saved ($/kW)		#DIV/0!	

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):	

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):		portfolio costs	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ -	
Utility indirect costs ($):	*Incremental capital:*	$ 4,800.01	
	Incremental O&M:	$ -	
	Total:	$ 4,800.01	
Total Utility Cost of Program		$ 4,800.01	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 4,800.01	

E. **Comments:**

Costs from 2006 have been included to complete the TRC. Includes costs from "Conserve Energy and Save Money" pamphlet program.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Coupon Program - 2005 Lighten Your Electricity Bill

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

Coupon program offering rebates to residential customers on a range of energy efficient technologies. Project a conservation initiative coordinated by EnergyShop.com on behalf of 32 local distribution companies. Program utilized Canadian Tire Corporation as the retailer with stores across Ontario. Coupons were delivered as mailing insert directly to the residential accounts. Each coupon had a tracking code to be able to apply the costs and credits to the appropriate LDC. Monitoring of program results accomplished by the coupons returned and evaluation of the product purchased by EnergyShop.com.

Measure(s):

	CFL Bulb	Seaonal Lighting	Programmable Therm.	Timers	Ceiling Fans	Home EnerGuide
Base case technology:	60 W incandescent	C-7 and mini Xmas lights	Standard Thermostats	No timer	No fan	No Assessment
Efficient technology:	15 W CFL	LED Xmas lights	Programmable Thermostat	Programmable Timer	Ceiling Fans	Assessment
Number of participants or units	186	72	14	6	4	47
Measure life (years):	4	30	18	20	20	25

B. **TRC Results:**

TRC Benefits ($):	$	12,335
TRC Costs ($):		
Utility program cost (less incentives):	$	2,134.23
Participant cost:	$	1,452.00
Total TRC costs:	$	3,586.23
Net TRC (in year CDN $):	$	8,749
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	3.44

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

Conservation Programs:

Demand savings (kW):	*Summer*		1.51
	Winter		6.13
		lifecycle	*in year*
Energy saved (kWh):		273,499.00	27,266.00
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):			
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):		Number of participants	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$	764.71
	Incentive:	$	942.00
	Total:	$	2,134.23
Utility indirect costs ($):	*Incremental capital:*		0
	Incremental O&M:		0
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	1,452.00
	Incremental O&M:		
	Total:	$	1,452.00

E. Comments:

Costs from 2006 have been included to complete the TRC. For the details of assumptions associated with this program please see the Se

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

Spread Sheet to convert SeeLine Results into Table B

Table 1 Enter Numbers from SeeLine

Technology	Number of Participants	Free Ridership	Summer Peak Saving	Annual kWh Savings	Measure Life	Lifecycle kWh Savings
CFL	186	10%	0	17,430	4	69,718.32
LED Xmas Lights Replacing 5W, C7 (25 Lights)	36	10%	0	1441.87	30	43,255.99
LED Xmas Lights Replacing Mini Lights	36	10%	0	551.83	30	16,554.76
Programmable Thermostat - Space Heating, Existing Single Family Detached	4	10%	0	5022.81	18	90,410.60
Programmable Thermostat - Space Cooling, Existing Single Family Detached	10	10%	1.45	1417.44	18	25,513.89
Timer - Outdoor Light	5	10%	0	1314	20	26,280.00
Timer - Indoor - Light	1	10%	0.05	88.27	20	1,765.44
Timer - Indoor - Air Conditioners	0	10%	0	0	20	-
Ceiling Fans	4	10%	0	0	20	-
EnerGuide for Existing Homes - Space Heating	0	10%	0	0	25	-
Total	282		1.51	27,266		273,499.00

Table 2 Enter Numbers for SeeLine

			Program Cost						
			Utility Cost					Participant Costs	
Technology	TRC Benefits	Incremental Equipment Costs	Direct Costs Incremental Capital	Direct Costs Incremental O&M	Non-Incremental Cost	Indirect Cost Incremental Capital	Indirect Cost Incremental O&M	Participants Cost Incremental Equipment	Participants Cost Incremental O&M	Rebate paid by Utility
CFL	$ 4,249	$ 334	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 210
LED Xmas Lights Replacing 5W, C7 (25 Lights)	$ 1,342	$ 65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 180
LED Xmas Lights Replacing Mini Lights	$ 514	$ 65	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 180
Programmable Thermostat - Space Heating, Existing Single Family Detached	$ 3,443	$ 206	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 330
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$ 1,717	$ 535	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Outdoor Light	$ 977	$ 90	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20
Timer - Indoor - Light	$ 93	$ 6	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2
Timer - Indoor - Air Conditioners	$ -	$-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Ceiling Fans	$ -	$ 151	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20
EnerGuide for Existing Homes - Space Heating		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	\
Program Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -									
Total	$ 12,335	$ 1,452		$ -	$ -	$ -	$ -	$ -	$ -	$ 942

TRC Results:

TRC Benefits ($):		$ 12,335
Measure's Costs ($):		
	Utility program cost (less incentives):	$ 2,134
	Participant cost:	$ 1,452
	Total TRC costs:	$ 3,586
Net TRC (in year CDN $):		$ 8,749

Benefit to Cost Ratio (TRC Benefits/TRC Costs): 3.44

Conservation Programs:

Demand savings (kW): *Summer* / *Winter* — Program was designed for conservation - peak not reported.

Energy saved (kWh):

Annual kWh	27,266.00
Lifecycle kWh	273,499.00

Program Costs*:

Utility direct costs ($):	*Incremental capital:*	$ -
	Incremental O&M:	$ 1,192
	Incentive:	$ 942
	Total:	$ 2,134
Utility indirect costs ($):	*Incremental capital:*	$ -
	Incremental O&M:	$ -
	Total:	$ -
Total Utility Cost of Program		$ 2,134
Participant costs ($):	*Incremental equipment:*	$ 1,452
	Incremental O&M:	
	Total:	$ 1,452

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Residential Energy Efficiency Project (REEP)

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

Consultants performed EnerGuide Home Evaluations for interested Goderich Hydro residential customers. As an incentive, Goderich Hydro provided a $50 subsidy to each participating household. A REEP energy efficiency advisor visited homes and demonstrated how to improve comfort levels, cut heating and cooling costs, and ensure adequate, healthy ventilation. Participants received a Home Energy Plan with recommendations for improving energy efficiency. Customer feedback was very positive.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	0		
Efficient technology:	0		
Number of participants or units delivered:	47.00		
Measure life (years):	0.00		

B. **TRC Results:**

TRC Benefits ($):	*$*	-	
Measure's Costs ($):			
Utility program cost (less incentives):	$	1,739.00	0
Participant cost:	$	4,230.00	Includes Discounted Measures Cost
Total TRC costs:	$	5,969.00	
Net TRC (in year CDN $):		-$5,969.00	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.00	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		0.00
	Winter		0.00
Energy saved (kWh):		*0.00*	0.00
Other resources saved :			
Natural Gas (m3):		0	0
Water (l)		0	0
Expenditures per kWh Saved ($/kWh)		#DIV/0!	
Expenditures per kW Saved ($/kW)		#DIV/0!	

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):	

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):			number of homes	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-	
	Incremental O&M:	$	1,739.00	0
	Incentive:	$	2,350.00	
	Total:	$	4,089.00	
Utility indirect costs ($):	*Incremental capital:*	$	-	
	Incremental O&M:	$	-	
	Total:	$	-	
Total Utility Cost of Program		$	4,089.00	
Participant costs ($):	*Incremental equipment:*	$	-	
	Incremental O&M:	$	4,700.00	Includes Measure's Cost
	Total:	$	4,700.00	
Grand Total Program Cost		$	8,789.00	

E. Comments:

Costs from 2006 have been included to complete the TRC. Goderich Hydro pre-paid 50 homes @ $25.00 / home. As of Dec. 31, 2005, only

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Smart Meter Pilot Project

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

Goderich Hydro planned to offer Smart Meters to its residential customers. Representatives attended workshops conducted by util-assist. Vendors demonstrated the technology and a pilot project plan was developed.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Regular Meters		
Efficient technology:	Smart Meters		
Number of participants or units delivered:	0.00		
Measure life (years):	0.00		

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 1,636.36	Includes Discounted Measures Cost
	Participant cost:	$ -	0
	Total TRC costs:	$ 1,636.36	
Net TRC (in year CDN $):		-$1,636.36	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.00	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		0.00
	Winter		0.00
Energy saved (kWh):		*0.00*	0.00
Other resources saved :			
Natural Gas (m3):		0	0
Water (l)		0	0
Expenditures per kWh Saved ($/kWh)		#DIV/0!	
Expenditures per kW Saved ($/kW)		#DIV/0!	

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):	

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):		foundation building	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 1,636.36	
	Incremental O&M:	$ -	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ 1,636.36	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 1,636.36	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 1,636.36	

E. **Comments:**

Unfortunately, the Smart Meter Pilot Project ended prematurely for reasons beyond CHEC's control.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Energy Conservation Web Site

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

An energy conservation Web site is currently under development. It will be geared towards residential, commercial, and industrial energy consumers. It will become a significant tool for educating, informing, and advertising. Development and maintenance costs will be shared by the CHEC group. All participating LDC's will contribute content. Savings could be measured by up-take of programs, message penetration analysis, redemption of discount coupons, and reports on Web site traffic.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	0		
Efficient technology:	0		
Number of participants or units delivered:	1.00		
Measure life (years):	0.00		

B. **TRC Results:**

TRC Benefits ($):	*$*	-	
Measure's Costs ($):			
Utility program cost (less incentives):	$	1,622.05	Includes Discounted Measures Cost
Participant cost:	$	-	0
Total TRC costs:	$	1,622.05	
Net TRC (in year CDN $):		-$1,622.05	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.00	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		0.00
	Winter		0.00
Energy saved (kWh):		*0.00*	0.00
Other resources saved :			
Natural Gas (m3):		0	0
Water (l)		0	0
Expenditures per kWh Saved ($/kWh)		#DIV/0!	
Expenditures per kW Saved ($/kW)		#DIV/0!	

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):	

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): foundation building

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 259.50	
	Incremental O&M:	$ 1,362.55	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ 1,622.05	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 1,622.05	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 1,622.05	

E. **Comments:**

CDM Coordinator fees are included as an Incremental O&M cost. The Web site has "Participant Numbers: 1.00 " because it is still under de

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