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

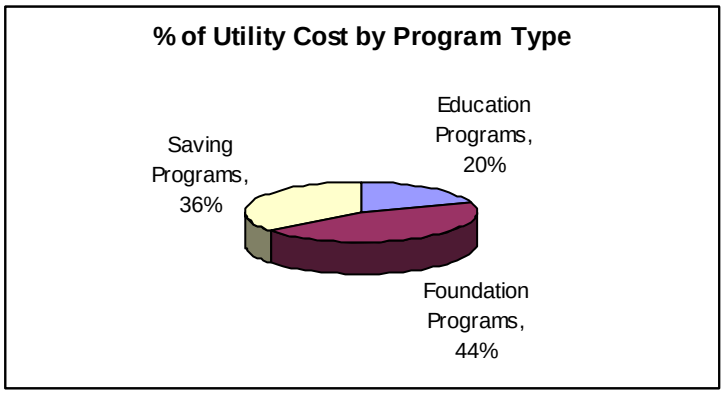
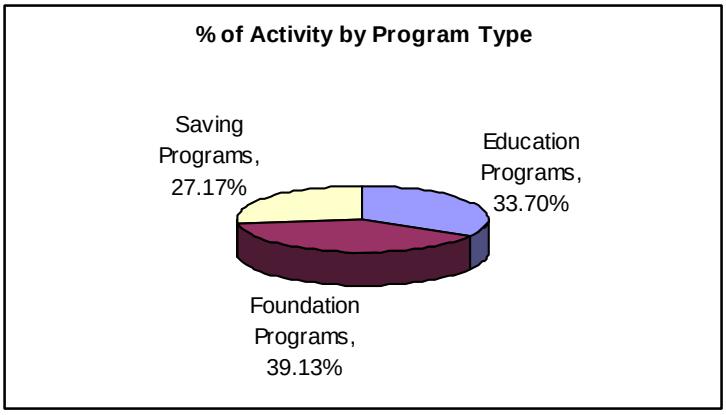


Figure 2



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										

WASAGA DISTRIBUTION INC.

CDM PLAN

ANNUAL REPORT

FOR THE YEAR ENDED DECEMBER 31, 2005

INTRODUCTION:

Wasaga Distribution Inc. is pleased to submit its Annual Report on the progress made in applying the third tranche ($238,574) monies to conservation and demand management programs. Attached to this report is Appendix A – Evaluation of the CDM Plan, along with Appendix B – Discussion of the Program for the individual programs and Seeline Report. Wasaga Distribution Inc. has submitted its conservation and demand management plan with the CHEC Group and has received a final order dated February 8, 2005 approving spending on the following programs:

DISCUSSION OF PROGRAMS:
#1. NAME OF PROGRAM: CUSTOMER SURVEY

DESCRIPTION OF PROGRAM:
The intent of this program is to create an active conservation culture. Engaging the community, as a whole and fostering the conservation culture through its infancy are the expected yield from the program. Using economies of scale the survey costs are shared with other members of the CHEC group and the increased buying power of the group will leverage more value to customers and shareholders.

The importance of customer feedback and opinion cannot be underestimated. The CHEC Group seized the opportunity of combining resources to produce one uniform survey, which greatly reduced costs and increases the depth and validity of the survey findings, which will be undertaken in 2006.

Survey success is often limited due to the rather small sample of potential customers, however, the joint survey efforts of our group will maximize the value of the survey and provide the necessary background and baseline information to enable member LDCs to make better decisions on program design and targeting funds to programs of customer value. These surveys may also be used to establish baselines for assessment of future program impacts.

TOTAL PROGRAM COST:		**$1,000.00**
COSTS INCURRED		
Per RRR submitted to OEB Jan 31/06	**$0**	
Additional Year End Adjustments	**$0**	
Balance At December 31, 2005:		**$ 0**

#2. NAME OF PROGRAM: WEBSITE

DESCRIPTION OF PROGRAM:
The intent of this program is to create an active conservation culture while providing conservation information to our community as a whole, through the use of the world wide web and all the resources that it provides. The website costs are shared with other members of the CHEC group and the increased buying power of the group will leverage more value to customers and shareholders.

A conservation website is a significant avenue of opportunity to educate, inform, advertise and reach out to energy consumers. Development and maintenance costs would be shared as would contribution requirements resulting in a more robust and interactive website.

Savings could be measured on up-take of programs, message penetration analysis and reports on the number of hits and web site traffic.

TOTAL PROGRAM COST: **$10,000.00**

COSTS INCURRED
Per RRR submitted to OEB Jan 31/06 **$6,235.03**
Additional Year End Adjustments
Balance At December 31, 2005: **$6,235.03**

#3. NAME OF PROGRAM: EDUCATION/PROMOTION

Advancing the importance of understanding conservation to customers in all market sectors and in turn facilitating the programs to permit customers acting on the energy saving opportunities requires significant effort and consistent marketing. Common messages and approaches are implemented to achieve greatest possible penetration. It is also very important that LDC staff understand how the various activities included in the CDM plan will not only help the consumer but the LDC as well. The level of knowledge the staff has on the benefits of various programs can significantly affect the success level of any program.

Although savings cannot be quantitatively measured, it is through the education and promotion activities that the consumer will take up the conservation culture through the knowledge is power aspect.

In 2005 the brochures produced by the Ministry of Energy – "Conserve Energy and Save Money" were purchased and on two separate occasions, once in the summer of 2005 and a second time in February 2006, these brochures were mailed out to all residential and general service customers in our community.

We took the opportunity to send instructors into our four elementary schools at each grade level and make presentations and displays, which included safety and conservation messages. Judging by the response from the teachers who responded to a questionnaire, the presentations were very enthusiastically received by the children. Starting with our youth to set the mindset of conservation will only bode well for our future generations.

TOTAL PROGRAM COST: **$29,000.00**

COSTS INCURRED
Per RRR submitted to OEB Jan 31/06 **$11,077.96**
Additional Expenditures Early '06 **728.61**
Balance: **$ 11,806.57**

#4. NAME OF PROGRAM: Light bulb Giveaway

DESCRIPTION OF PROGRAM:
Compact Fluorescent Lamps (CFLs) have for the past 15 years been proven energy saving devices over their conventional incandescent light bulbs. This is a residential consumer and small business program targeting increased awareness and use of CFLs in this market. CFLs achieve up to 75% electricity savings over conventional incandescent bulbs and last up to 10 times longer, if used in applications where light is required a minimum of 4 hours per day or more typical paybacks range from .7 to 3 years.

Program design will include lamp specifications, procurement, distributions, etc. Key considerations include lamp selection to ensure light quality and life expectancy is achieved.

TOTAL PROGRAM COST: **$30,574.00**

COSTS INCURRED
Per RRR submitted to OEB Jan *3* 1/06 **$2131.01**
Additional Expenditures Early '06 **$3829.67**
Balance: **$5,960.68**

#5. NAME OF PROGRAM: System Optimization & Implementation

DESCRIPTION OF PROGRAM:
The intent of this program is to target reductions in distribution system losses. The overall benefits of this program will be to identify and implement projects that will improve/reduce distribution system losses and improve system efficiency. Supporting corrective action either by taking direct control over an upgrade or support customer action will result in system demand reductions and relieve network capacity, on both a local and system wide basis.

Program #1: Transformer and other loss reductions: Infared Study
Through non-invasive investigations, this initiative will identify overloaded equipment and investigate operational and equipment improvement opportunities. This study will also investigate the integrity of the overhead and underground distribution systems for areas of hot spots, which once repaired, will reduce line losses and improve system reliability.

Program #2: Line Loss Reductions: System Optimization Study & Phase Balancing This study will investigate and identify the benefits of optimizing the distribution system. It will indicate areas of losses resulting from undersized conductors and undersized transformers. It will further indicate where improvements may be made to the system through the implementation of proper feeder balancing. The study will recommend system changes, which will improve line losses and system reliability.

Program #3: Voltage Conversion Substation Upgrade
This study will investigate the benefits of increasing the distribution system voltage, which will result in lower line losses, and may result in the elimination of either one or two of the existing municipal substations.

Program #4: Substation Study
Subject to the results obtained from the Voltage Conversion Study, this study will investigate the existing condition of the municipal substations and provide a report on applicable upgrades to the substations to maximize system reliability.

Program #5: Load Data Study
This study will satisfy the OEB requirement for an LDC-specific load shape analysis using the generic load shapes (residential and general service) as identified by the Province-wide group which included sampling design, customer selection and load shape analysis.

TOTAL PROGRAM COST:		**$20,000.00**
COSTS INCURRED		
Per RRR submitted to OEB Jan 31/06	**$5,054.40**	
Balance:		**$5,054.40**

#6 NAME OF PROGRAM: Investigate/Implement Demand Reduction Programs

DESCRIPTION OF PROGRAM:
Demand Response Programs will focus on the re-activating existing systems currently in place by some LDC's, expanding those systems, introducing new systems and funding customer incentives. Data from customer surveys could be useful for this effort and will be leveraged to support these initiatives. Current systems are somewhat outdated and limited to hot water heater control. Additional opportunities potentially exist for control of air conditioners, refrigerators and pool pumps among others. These initiatives will contribute to many benefits including system constraints experienced by LDC's in certain localized areas as well as system constraints experienced by the total Ontario electricity system.

TOTAL PROGRAM COST:		**$79,000.00**
TRANSFERRED TO SMART METERING		**($30,000.00)**
AVAILABLE		**$49,000.00**
COSTS INCURRED		
Per RRR submitted to OEB Jan 31/06	**$0**	

#7. NAME OF PROGRAM: Smart Metering

DESCRIPTION OF PROGRAM:
A pilot program with 576 meters has been undertaken in our community with the intention to investigate applicability and optimum introduction of smart meters. Part of our program included the ongoing evaluation of technologies appropriate for retrofit applications including equipment procurement, assessment of staff training needs and delivery of training, scheduling rollout and deployment and identification of target groups for applicable technologies.
Our residential pilot includes the use of automatic meter reading devices and their applicability to urban customers, utilization of the Itron metering technology, makes use of a wireless communication technology and the use of web enabled electricity consumption profile data.
Wasaga along with other members of the CHEC group have joined the OUSM group, who has coordinated the multiple technologies. This will provide Wasaga with the ability to gain access to documented test results from a variety of vendors that were all tested using exactly the same testing process. This has provided economies of scale as ultimately all LDC's will need to compare and spend time separating the claims of vendors from the actual services and deliverables they can provide. The ability to share information and questions with other members of the group provide additional benefits in the implementation planning as well as customer education and system integration issues.

TOTAL PROGRAM COST:		**$69,000.00**
Transferred to Light bulb		**$30,000.00**
NET AVAILABLE		**$99,000.00**
COSTS INCURRED		
Per RRR submitted to OEB Jan 3 1/06	**$97,641.79**	
At December 31, 2005:		**$97,641.79**

EVALUATION OF CDM PLAN:
See attached Appendix "B" for each program noted above, Appendix "A" an Evaluation of the overall CDM Plan and Seeline Report on Light bulb giveaway.

LESSONS LEARNED/CONCLUSIONS/ GENERAL COMMENTS:

The bulk of Wasaga Distribution Inc.'s programs are in the development stage and 2005 set the foundation for future program development.

As reported in the enclosed Seeline Report on the providing of discount coupons for the purchase of CFL, LED Christmas lights, timers, thermostats and ceiling fans, the program was a complete success across the Province. The program was a partnership with the Energyshop, Canadian Tire and a number of LDC's from the CHEC Group.

In the Education and Promotion Program we partnered with the Ministry of Energy for the delivery of conservation brochures within our community and partnered with Electricity Safety & Conservation to provide instruction and presentations to our four elementary schools at all grade levels.

Our Smart Metering pilot has been up and running smoothly for almost one year. With 576 meters in the field they provide us with a great deal of information and usage data and the ability to do a number of field related tasks directly from our office.

Respectfully Submitted,

Michael Lalonde
Manager, Administrative & Financial Services
WASAGA DISTRIBUTION INC.

Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Smart meters	Other 2	Other 3	Other 4
Net TRC value ($):	*-$82,001*	*20695.4*					-$5,054	-$97,642			
Benefit to cost ratio:	*0.366*	*1.8*									
Number of participants or units delivered:	*14627*	*14051*									
Total KWh to be saved over the lifecycle of the plan (kWh):	*1,049,981.06*	*1,049,981.06*									
Total in year kWh saved (kWh):	*102,000.44*	*102,000.44*									
Total peak demand saved (kW):	*0*	*0*									
Total kWh saved as a percentage of total kWh delivered (%):	*0.098*	*0.137*									
Peak kW saved as a percentage of LDC peak kW load (%):	*0*	*0*									
Gross in year C&DM expenditures ($):	*$126,699*	*$ 24,002.60*					$5,054	$97,642			
Expenditures per KWh saved ($/kWh):*	*0.120667691*	*0.022860031*									
*Expenditures per KW saved ($/kW)**:*	*0*	*0*									

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:** Education and Promotion

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

This program is primarily targeted at Residential, however our General Service customers were also supplied the brochures, Conserve Energy and Save Money, that were created by the Ministry of Energy. We had 2 separate mailings, summer of 2005 and in Febru

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:	13,000.00		
Measure life (years):	0.00		

B. **TRC Results:**

TRC Benefits ($):		*$* -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 11,806.57	Error:Make Selection in L14
	Participant cost:	$ -	Error:Make Selection in L14
	Total TRC costs:	$ 11,806.57	
Net TRC (in year CDN $):		-$11,806.57	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0.00	

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

Conservation Programs:

Demand savings (kW):	*Summer*		0.00
	Winter		0.00
		lifecycle	*in year*
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):

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 11,806.57	Error: Choose Measure's cost paid by:
	Incentive:	$ -	
	Total:	$ 11,806.57	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 11,806.57	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	Error: Choose Measure's cost paid by:
	Total:	$ -	
Grand Total Program Cost		$ 11,806.57	

E. Comments:

*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:** System Optimization

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

This program is targeting a reduction in distribution system losses through line loss reductions, transformer and other loss reductions, and voltage conversions. Software has been purchased to assist us.

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):	$ 5,054.40	Includes Discounted Measures Cost
	Participant cost:	$ -	0
	Total TRC costs:	$ 5,054.40	
Net TRC (in year CDN $):		-$5,054.40	
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):

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 5,054.40	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ 5,054.40	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 5,054.40	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 5,054.40	

E. Comments:

*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:** Conservation Website

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

The intention is to provide Wasaga Distribution customers, primarily Residential, but also General Service, with a website to enable them to access conservation tips, new programs, energy calculators and energy efficient products. This would be developed

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):	$ 6,235.03	Includes Discounted Measures Cost
	Participant cost:	$ -	0
	Total TRC costs:	$ 6,235.03	
Net TRC (in year CDN $):		-$6,235.03	
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):

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 6,235.03	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ 6,235.03	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 6,235.03	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 6,235.03	

E. Comments:

*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	681	270	48	34	15	0
Measure life (years):	4	30	18	20	20	25

B. **TRC Results:**

TRC Benefits ($):	$	47,065
TRC Costs ($):		
Utility program cost (less incentives):	$	2,531.00
Participant cost:	$	5,415.00
Total TRC costs:	$	7,946.00
Net TRC (in year CDN $):	$	39,119.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	5.92

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		
	Winter		
Energy saved (kWh):		1,049,981.06	102,000.44
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:

	lifecycle	in year
Peak load savings (kW):		
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:	$	2,531.00
	Incentive:	$	3,430.00
	Total:	$	5,961.00
Utility indirect costs ($):	*Incremental capital:*		0
	Incremental O&M:		0
	Total:		0
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	5,415.00
	Total:	$	5,415.00

E. Comments:

For the details of assumptions associated with this progam please see the SeeLine Report in Appendix _____

*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	681	10%	0	63,991.00	4	255,964.00
LED Xmas Lights Replacing 5W, C7 (25 Lights)	135	5%	0	5,707.00	30	171,210.00
LED Xmas Lights Replacing Mini Lights	135	5%	0	2,184.00	30	65,520.00
Programmable Thermostat - Space Heating, Existing Single Family Detached	13	10%	0	17,579.84	18	316,437.12
Programmable Thermostat - Space Cooling, Existing Single Family Detached	35	10%	5.08	4,961.03	18	89,298.54
Timer - Outdoor Light	26	10%	0	6,832.80	20	136,656.00
Timer - Indoor - Light	4	10%	0.21	353.09	20	7,061.80
Timer - Indoor - Air Conditioners	4	10%	0.63	391.68	20	7,833.60
Ceiling Fans	15	10%	0	-	20	-
EnerGuide for Existing Homes - Space Heating	0	10%		-	25	-
Total	1,048.00		5.92	102,000.44		1,049,981.06

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	$ 15,595	$ 1,226	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 759
LED Xmas Lights Replacing 5W, C7 (25 Lights)	$ 5,312	$ 257	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,340
LED Xmas Lights Replacing Mini Lights	$ 2,033	$ 257	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Programmable Thermostat - Space Heating, Existing Single Family Detached	$ 12,050	$ 719	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,140
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$ 6,008	$ 1,871	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Outdoor Light	$ 5,079	$ 468	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 104
Timer - Indoor - Light	$ 374	$ 25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Indoor - Air Conditioners	$ 614	$ 25	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12
Ceiling Fans	$ -	$ 567	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 75
EnerGuide for Existing Homes - Space Heating		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	\
Program Costs	$ -	$ -	$ -	$ 2,531	$ -	$ -	$ -	$ -	$ -	$ -
	$ -									
Total	$ 47,065	$ 5,415	$ -	$ 2,531	$ -	$ -	$ -	$ -	$ -	$ 3,430

TRC Results:

TRC Benefits ($): $ 47,065

Measure's Costs ($):

Utility program cost (less incentives):	$	2,531
Participant cost:	$	5,415
Total TRC costs:	$	7,946
Net TRC (in year CDN $):	$	39,119

Benefit to Cost Ratio (TRC Benefits/TRC Costs): 5.92

Conservation Programs:

Demand savings (kW):	*Summer*	5.92	Program was designed for conservation - peak not reported.
	Winter	23.93	

Energy saved (kWh):

Annual kWh	102,000.44
Lifecycle kWh	1,049,981.06

Program Costs*:

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	2,531
	Incentive:	$	3,430
	Total:	$	5,961
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Total Utility Cost of Program		$	5,961
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	5,415
	Total:	$	5,415

Appendix B - Discussion of the Program

(complete this section for each program)

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

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

Pilot program to introduce Smart Meters to the community. Installed 576 units to determine methods and processe. In additon Wasaga Distribution has joined the OUSM group to assist with continued development of Smart Meter processes.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Standard Meter		
Efficient technology:	Smart Meter		
Number of participants or units delivered:	576.00		
Measure life (years):	20.00		

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 97,641.79	Includes Discounted Measures Cost
	Participant cost:	$ -	0
	Total TRC costs:	$ 97,641.79	
Net TRC (in year CDN $):		-$97,641.79	
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):

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ 97,641.64	Includes Measure's Cost - ensure full cost of measure entered in TRC!L15
	Incentive:	$ -	
	Total:	$ 97,641.64	
Utility indirect costs ($):	*Incremental capital:*	$ -	
	Incremental O&M:	$ -	
	Total:	$ -	
Total Utility Cost of Program		$ 97,641.64	
Participant costs ($):	*Incremental equipment:*	$ -	
	Incremental O&M:	$ -	0
	Total:	$ -	
Grand Total Program Cost		$ 97,641.64	

E. Comments:

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

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

For
Wasaga Distribution

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 participant and program cost data 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	681	10.0%
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	135	10.0%
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	135	10.0%
Programmable Thermostat - Space Heating, Existing Single Family Detached	13	10.0%
Programmable Thermostat - Space Cooling, Existing Single Family Detached	35	10.0%
Timer - Outdoor Light	26	10.0%
Timer - Indoor - Light	4	10.0%
Timer - Indoor - Air Conditioners	4	10.0%
Ceiling Fan	15	10.0%
EnerGuide for Existing Homes - Space Heating	-	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	63,991	4	255,965.83
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	0.00	5407.00	30.00	162,209.96
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	0.00	2069.35	30.00	62,080.36
Programmable Thermostat - Space Heating, Existing Single Family Detached	0.00	17579.84	18.00	316,437.11
Programmable Thermostat - Space Cooling, Existing Single Family Detached	5.08	4961.03	18.00	89,298.62
Timer - Outdoor Light	0.00	6832.80	20.00	136,656.00
Timer - Indoor - Light	0.21	353.09	20.00	7,061.76
Timer - Indoor - Air Conditioners	0.63	391.68	20.00	7,833.60
Ceiling Fan	0.00	0.00	20.00	0.00
EnerGuide for Existing Homes - Space Heating	0.00	0.00	25.00	0.00
Total		**101,586**		**1,037,543**

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	$15,599	$1,226	$ -	**$14,373**	**12.72**
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	$5,033	$243	$-	**$4,790**	**20.71**
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	$1,926	$243	$-	**$1,683**	**7.93**
Programmable Thermostat - Space Heating, Existing Single Family Detached	$12,050	$719	$-	**$11,331**	**16.75**
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$6,008	$1,871	$-	**$4,137**	**3.21**
Timer - Outdoor Light	$5,079	$468	$-	**$4,611**	**10.85**
Timer - Indoor - Light	$374	$25	$-	**$348**	**14.83**
Timer - Indoor - Air Conditioners	$614	$25	$-	**$589**	**24.38**
Ceiling Fan	$-	$567	$-	**($567)**	**0.00**
EnerGuide for Existing Homes - Space Heating	$-	$-	$-	**$-**	**n/a**
Program Costs	$-	$-	$2,057	**($2,057)**	**0.00**
Total	**$46,678**	**$5,388**	**$2,057**	**$39,234**	**6.27**

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	
				$ -															