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

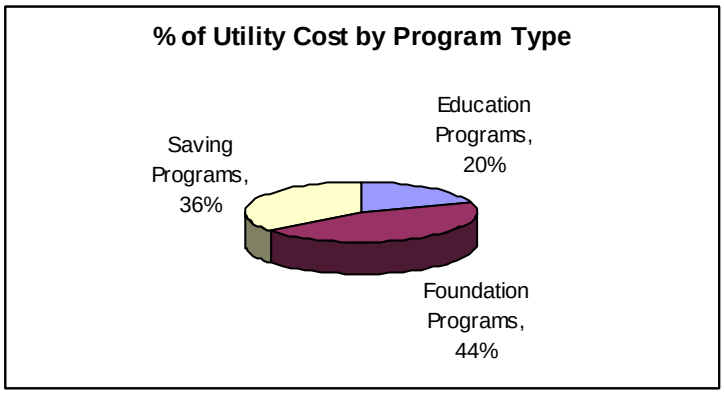
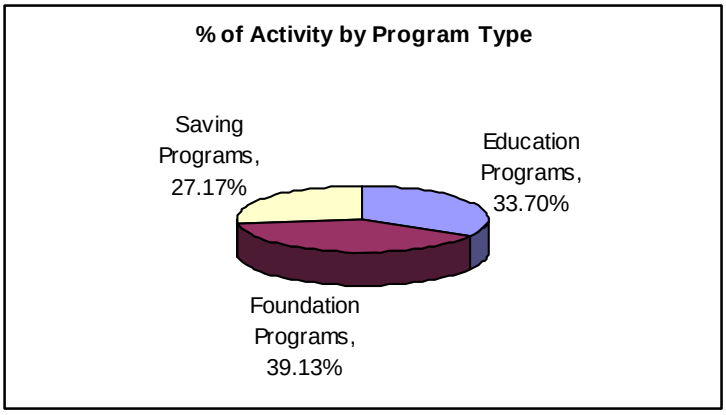


Figure 2



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										

Westario Power Inc.

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To: Mr., Guy Cluff, President / CEO

Re: C&DM Plan Summary For Westario Power Inc. for 2005

Date: March 23, 2006

Early in 2004, the Provincial Government enacted Bill 4, *The Ontario Energy Board (Electricity Pricing) Act.* The law permitted LCDs to apply for the remaining one-third of the Ontario Energy Board (OEB) approved rate-of-return in 2005 providing that the first year's additional revenue is spent on Conservation and Demand Management (C&DM) programs over a three year period.

Westario Power Inc. applied for and received approval for the remaining one-third of its rate-of-return. The company is obligated under the C&DM Project amounts to approximately $650,000.

In 2005, Westario Power C&DM Programs included:

- **Smart Meter Pilot Project**. In conjunction with the Ontario Utilities Smart Meter (OUSM) initiative, 125 residential smart meters were installed in the village of Mildmay.
- **ENERconnect Discount Coupon Program**. Offered though Canadian Tire stores, the program offered coupons to Westario Power customers for energy saving items. The discount coupon program also included a home energy audit, offered though the Residential Energy Efficiency Program (REEP).
- **Educational and Promotional Materials**. Promotional brochures promoted public education and raised public awareness of energy conservation.
- **Energy Conservation Web site**. In conjunction with the Cornerstone Hydro Electric Cooperative (CHEC, an LCD industry group).
- **Residential Energy Efficiency Program**. Although also offered as part of the ENERconnect Discount Coupon Program, Westario Power Also participated in a standalone REEP program with additional incentives beyond those offered in the coupon program.

Discussion of the Initiatives:

1. **Smart Meters**
   In conjunction with the OUSM, a pilot project was initiated in the village of Mildmay. SilverSprings Technologies partnered with GE Meters to test a smart meter technology, under the supervision of the OUSM. A public outreach campaign for 125 candidate residential services was filled. The meters utilize a radio frequency communication system. A series of "gateways" communicate to a group of meters. Interrogation and testing is being handled by the OUSM with cooperation with the vendors.

   We await the final results from the OUSM pilot projects. No one technology will support all applications. We expect that although this technology may be adopted, the actual means to communicate will not be limited to strictly any one mode (radio frequency in this case).

   The Provincial Government has mandated that smart meters be installed on all residential services by 2010. However, a smart meter specification has not yet been finalized for meters and associated equipment.

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Expenditures to end of 2005: $86,763

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2. ENERconnect Discount Coupon Program

In partnership with the CHEC group, Westario participated in a discount coupon offered through Canadian Tire stores. The Program was administered by *EnergyShop*, and the data compiled by *SeeLine.* The coupon program offered consumers discounts on energy saving household items. These items included compact florescent bulbs (CFL), LED Seasonal Lights, Ceiling Fans, Programmable Thermostats, Indoor and Outdoor Timers, and home energy audits through the Residential Energy Efficiency Program (REEP).

Below is a summary of items redeemed through the coupon program.

Energy Saving Technology	Number of Participants
Compact Florescent Bulbs	1,246
LED Seasonal Lights	326
Programmable Thermostats (all types)	83
Timers – Outdoor	44
Timers – Indoor	19
Ceiling Fans	51
Home Energy Audits – see note	76

The Home Energy Audits were administered though REEP, and although part of the coupon program, the results do not appear in the *SeeLine* Report.

The energy savings on the coupon item were determined using the OEB guidelines. Direct product cost, incentive cost and administration costs were also compiled. Of all the programs initiated by Westario, this had the only net positive TRC.

The energy audits are difficult to assess, as one cannot show energy savings unless a follow-up audit is performed. We anticipate that the energy audits will prove successful once the follow-ups are completed. At this time, no follow-ups have been completed.

Expenditures to end of 2005: $18,627

3. Educational and Promotional Materials

The intent of this program is to encourage and foster a culture of conservation. Westario Power utilized both internal and external resources to promote the message of conservation. From within, we provided energy saving promotional materials to our customers in our billing envelopes. Further, using the resources of the CHEC group we were able to promote a common message.

As with any promotion campaign, direct energy savings cannot be calculated. However, the purpose of public education and promotion is to raise awareness. In time, these issues will become part of a societal and cultural expectation to conserve energy.

Expenditures to end of 2005: $9,198

4. Energy Conservation Web Site

As above, the intent of this program is to encourage and foster a culture of conservation. Westario Power partnered with the CHEC Group to launch this web site. In the net

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generation, the website offers an opportunity to reach surfers looking to answer their conservation questions.

The CHEC members shared web page development and maintenance costs. Leveraging combined financial resources to produce one conservation website allowed a more thorough development than would have been achieved if each LDC had attempted the initiative separately. This permitted the CHEC group to provide a well-developed, user-friendly site for conversation, and energy saving ideas.

As above, direct energy savings cannot be calculated. However, the purpose of the web site is public education and to raise awareness. In time, conservation will become part of a societal and cultural expectation.

Expenditures to end of 2005: $15,337

Evaluation of the C&DM Plan

- In terms of gains, the only project that has quantifiable, net positive returns is the ENERconnect Discount Coupon Program. Direct costs and incentive costs, and energy saving costs can be calculated. The other programs, while we feel were successful, would show no net savings in the present TRC model. This is not to suggest these programs were not constructive, but rather, the TCR model is not capable of indicating benefits for these initiatives.
- The Smart Meter Project is a joint project with the OUSM. Expected savings from Smart Meter technologies will be determined when a working cost model has been developed. We await the OEB's finalized specification.
- Educational and Promotional Materials cannot be quantified. As with any public awareness campaign, no direct energy savings can be attributed to this program. However, that does not make the objectives of public awareness invalid. Without actively raising public knowledge and awareness, all other campaigns will meet with limited success.
- Conservation Web Site. As above, no direct energy savings can be attributed to this program. The World Wide Web allows the Westario Power another venue for public awareness of energy conservation.
- Home Energy Audits. The Residential Energy Efficiency Program has also not provided any direct benefit. The purpose of this program is to provide to homeowners the opportunity to have a consultant come and demonstrate realistic and achievable energy saving undertakings in their homes. Ultimately, it is the actions of the homeowners who will determine if any energy savings will be attained.
- Reporting from *SeeLine* has been slow. We feel that we would have benefited from more timely reporting of the data.
- Reporting from the REEP program has been slow. We have not had an update or status report since 2005.
- The TRC model is complicated. It is sometimes difficult to determine if the data has been input correctly. There are many factors to include, and just as many to not include. The CHEC group has benefited from the outstanding consulting services of Mr. Gordon Eamer. The LDCs would benefit from having a more streamlined and less cumbersome TRC model.

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 ($):	*-$51,193*	$35,570						-$86,763			
Benefit to cost ratio:	*0.608*	1.809									
Number of participants or units delivered:	*2075*	1950						125			
Total KWh to be saved over the lifecycle of the plan (kWh):	*1,721,480.00*	1,721,480.00									
Total in year kWh saved (kWh):	*178,825.00*	178,825.00									
Total peak demand saved (kW):											
Total kWh saved as a percentage of total kWh delivered (%):	*0.085%*										
Peak kW saved as a percentage of LDC peak kW load (%):											
Gross in year C&DM expenditures ($):	*$129,926*	$43,163						$86,763			
Expenditures per KWh saved ($/kWh):*	*0.0755*	*0.0251*									
*Expenditures per KW saved ($/kW)**:*											

Utility discount rate (%):	8.57

*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:** 2005 Lighten Your Electricity Bill Program

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

Westario participated with 31 other LDCs in a fall campaign with Canadian Tire. EnegyShop.com ran the program that was aimed providing energy savings coupons to residential customers. The program was designed to increase both public awareness of energy conservation and to increase the purchase of energy efficient product. The program results was quantified by tracking the coupons redeemed.

Measure(s):

	CFL	Seasonal LED	Programmable Therm.	Timers	Ceiling Fans	EnerGuide
Base case technology:	Incandescent Bulb	5 W and mini lights	None programmable	No timers	None	None
Efficient technology:	CFL	LED	Programmable Therm.	Timers	Fan	Audit
Number of participants or units delive	1246	326	83	63	51	76
Measure life (years):	4.4	30	18	20	20	25

B. **TRC Results:**

TRC Benefits ($):	*$*	*79,551.00*
TRC Costs ($):		
Utility program cost (less incentives):	$	9,269.00
Participant cost:	$	10,176.00
Total TRC costs:	$	19,445.00
Net TRC (in year CDN $):	$	60,106.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	4.09

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

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*1,721,480.00*	178,825.00
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):

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	4,437.00
	Incremental O&M:	$	4,832.00
	Incentive:	$	9,358.00
	Total:	$	18,627.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		
Participant costs ($):	*Incremental equipment:*		
	Incremental O&M:	*$*	*10,176.00*
	Total:		

E. Comments:

*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	1246	10%	0	117,027.00	4	468,108.00
LED Xmas Lights Replacing 5W, C7 (25 Lights)	163	10%	0	6,891.00	30	206,730.00
LED Xmas Lights Replacing Mini Lights	163	10%	0	2,637.00	30	79,110.00
Programmable Thermostat - Space Heating, Existing Single Family Detached	23	10%	0	30,365.00	18	546,570.00
Programmable Thermostat - Space Cooling, Existing Single Family Detached	60	10%	3.5	8,569.00	18	154,242.00
Timer - Outdoor Light	44	10%	0	11,563.00	20	231,260.00
Timer - Indoor - Light	9	10%	0.21	794.00	20	15,880.00
Timer - Indoor - Air Conditioners	10	10%	0.63	979.00	20	19,580.00
Ceiling Fans	51	10%	0	-	20	-
EnerGuide for Existing Homes - Space Heating	76	10%	0	-	25	-
Total				178,825.00		1,721,480.00

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	$ 28,520	$ 2,242	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
LED Xmas Lights Replacing 5W, C7 (25 Lights)	$ 6,414	$ 310	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
LED Xmas Lights Replacing Mini Lights	$ 2,455	$ 310	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Programmable Thermostat - Space Heating, Existing Single Family Detached	$ 20,813	$ 1,242	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$ 10,377	$ 3,232	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Outdoor Light	$ 8,595	$ 792	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Indoor - Light	$ 841	$ 57	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Timer - Indoor - Air Conditioners	$ 1,536	$ 63	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Ceiling Fans	$ -	$ 1,928	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
EnerGuide for Existing Homes - Space Heating	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Program Costs	$ -	$ -	$ 4,437	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	$ -									
Total	$ 79,551	$ 10,176	$ 4,437	$ 4,832	$ -	$ -	$ -	$ -	$ -	$ 9,358

TRC Results:

TRC Benefits ($):		$ 79,551
Measure's Costs ($):		
	Utility program cost (less incentives):	$ 9,269
	Participant cost:	$ 10,176
	Total TRC costs:	$ 19,445
Net TRC (in year CDN $):		$ 60,106

Benefit to Cost Ratio (TRC Benefits/TRC Costs): 4.09

Conservation Programs:

Demand savings (kW): *Summer* 10.82 Program was designed for conservation - peak not reported.
Winter

Energy saved (kWh):
Annual kWh 178,825.00
Lifecycle kWh 1,721,480.00

Program Costs*:

Utility direct costs ($):	*Incremental capital:*	$ 4,437
	Incremental O&M:	$ 4,832
	Incentive:	$ 9,358
	Total:	$ 18,627
Utility indirect costs ($):	*Incremental capital:*	$ -
	Incremental O&M:	$ -
	Total:	$ -
Total Utility Cost of Program		$ 18,627
Participant costs ($):	*Incremental equipment:*	$ -
	Incremental O&M:	$ 10,176
	Total:	$ 10,176

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):

conservation website, jointly with CHEC group

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6
Base case technology:	no website	no website	0.00	0.00	0.00	0.00
Efficient technology:	live website	conservation website	0.00	0.00	0.00	0.00
Number of participants or units delivered:	125.00	0.00	0.00	0.00	0.00	0.00
Measure life (years):	0.00	0.00	0.00	0.00	0.00	0.00

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 15,337.84	0
	Participant cost:	$ 0.00	0
	Total TRC costs:	$ 15,337.84	
Net TRC (in year CDN $):		-$15,337.84	

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:*	$ 0.00	
	Incremental O&M:	$ 15,337.84	0
	Incentive:	$ -	
	Total:	$ 15,337.84	
Utility indirect costs ($):	*Incremental capital:*	$ 0.00	
	Incremental O&M:	$ 0.00	
	Total:	$ 0.00	
Total Utility Cost of Program		$ 15,337.84	
Participant costs ($):	*Incremental equipment:*	$ 0.00	
	Incremental O&M:	$ 0.00	0
	Total:	$ 0.00	
Grand Total Program Cost		$ 15,337.84	

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:** promotion and education

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

promotion and education packages to Westario Customers

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6
Base case technology:	no promotion	no website	0.00	0.00	0.00	0.00
Efficient technology:	0	conservation website	0.00	0.00	0.00	0.00
Number of participants or units delivered:	125.00	0.00	0.00	0.00	0.00	0.00
Measure life (years):	0.00	0.00	0.00	0.00	0.00	0.00

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 9,198.05	0
	Participant cost:	$ 0.00	0
	Total TRC costs:	$ 9,198.05	
Net TRC (in year CDN $):		-$9,198.05	

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:*	$ 0.00	
	Incremental O&M:	$ 9,198.05	0
	Incentive:	$ -	
	Total:	$ 9,198.05	
Utility indirect costs ($):	*Incremental capital:*	$ 0.00	
	Incremental O&M:	$ 0.00	
	Total:	$ 0.00	
Total Utility Cost of Program		$ 9,198.05	
Participant costs ($):	*Incremental equipment:*	$ 0.00	
	Incremental O&M:	$ 0.00	0
	Total:	$ 0.00	
Grand Total Program Cost		$ 9,198.05	

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:** smart meter project

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

Pilot project, smart meters

Measure(s):

	Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6
Base case technology:	conventional meter	no website	0.00	0.00	0.00	0.00
Efficient technology:	smart meter	conservation website	0.00	0.00	0.00	0.00
Number of participants or units delivered:	125.00	0.00	0.00	0.00	0.00	0.00
Measure life (years):	0.00	0.00	0.00	0.00	0.00	0.00

B. **TRC Results:**

TRC Benefits ($):		$ -	
Measure's Costs ($):			
	Utility program cost (less incentives):	$ 86,763.31	0
	Participant cost:	$ 0.00	0
	Total TRC costs:	$ 86,763.31	
Net TRC (in year CDN $):		-$86,763.31	

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:*	$	30,345.94	
	Incremental O&M:	$	56,417.37	0
	Incentive:	$	-	
	Total:	$	86,763.31	
Utility indirect costs ($):	*Incremental capital:*	$	0.00	
	Incremental O&M:	$	0.00	
	Total:	$	0.00	
Total Utility Cost of Program		$	86,763.31	
Participant costs ($):	*Incremental equipment:*	$	0.00	
	Incremental O&M:	$	0.00	0
	Total:	$	0.00	
Grand Total Program Cost		$	86,763.31	

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
Westario Power

By
SeeLine Group Inc.
416-703-8695

February 2006
Revised

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	1,246	10.0%
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	163	5.0%
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	163	5.0%
Programmable Thermostat - Space Heating, Existing Single Family Detached	23	10.0%
Programmable Thermostat - Space Cooling, Existing Single Family Detached	60	10.0%
Timer - Outdoor Light	44	10.0%
Timer - Indoor - Light	9	10.0%
Timer - Indoor - Air Conditioners	10	10.0%
Ceiling Fan	51	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	117,027	4	468,109
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	0.00	6,891	30.00	206,734
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	0.00	2,637	30.00	79,121
Programmable Thermostat - Space Heating, Existing Single Family Detached	0.00	30,365	18.00	546,573
Programmable Thermostat - Space Cooling, Existing Single Family Detached	8.78	8,569	18.00	154,243
Timer - Outdoor Light	0.00	11,563	20.00	231,264
Timer - Indoor - Light	0.48	794	20.00	15,889
Timer - Indoor - Air Conditioners	1.57	979	20.00	19,584
Ceiling Fan	0.00	-	20.00	-
EnerGuide for Existing Homes - Space Heating	0.00	-	25.00	-
Total	**10.82**	**178,827**		**1,721,517**

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	$28,520	$2,242	$ -	**$26,278**	**12.72**
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	$6,414	$310	$-	**$6,105**	**20.71**
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	$2,455	$310	$-	**$2,145**	**7.93**
Programmable Thermostat - Space Heating, Existing Single Family Detached	$20,813	$1,242	$-	**$19,571**	**16.75**
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$10,377	$3,232	$-	**$7,145**	**3.21**
Timer - Outdoor Light	$8,595	$792	$-	**$7,803**	**10.85**
Timer - Indoor - Light	$841	$57	$-	**$784**	**14.83**
Timer - Indoor - Air Conditioners	$1,536	$63	$-	**$1,473**	**24.38**
Ceiling Fan	$-	$1,928	$-	**$(1,928)**	**0.00**
EnerGuide for Existing Homes - Space Heating	$-	$-	$-	**$-**	**n/a**
Program Costs	$-	$-	$4,437	**$(4,437)**	**0.00**
Total	**$79,551**	**$10,175**	**$4,437**	**$64,939**	**5.44**

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	
				$ -															