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

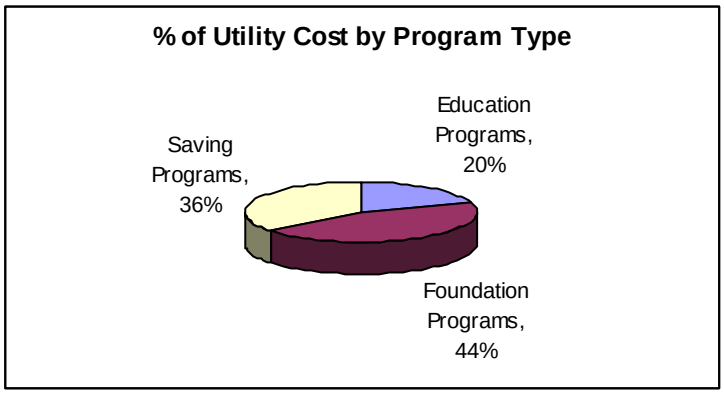
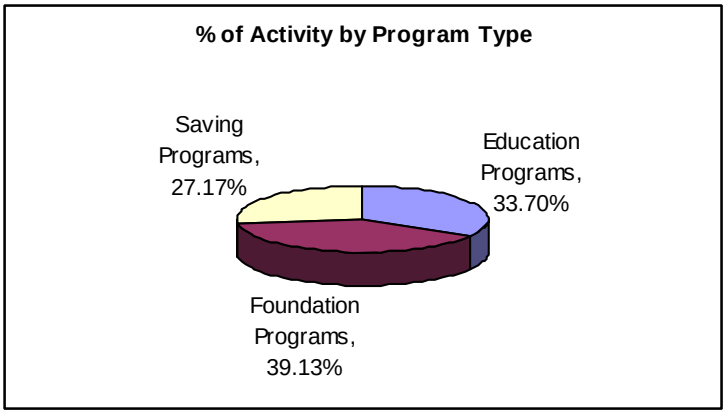


Figure 2



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										

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Wednesday, March 15, 2006

Re: Board File No.: RP-2004-0203\ED 2002-0518 – Conservation and Demand Management Report

In November of 2004, COLLUS Power Corp, along with other LDC members of the Cornerstone Hydro Electric Concepts Association Inc. (CHEC) filed an application for a Final Order pre-approving its individual Conservation and Demand Management (CDM) Plan. The Board granted final plan approval on February 8, 2005. COLLUS is pleased to provide this summary of CDM activities and observations for the period covering 2004/2005.

COLLUS Power Corp. has been an active supporter of Conservation and Demand Side Management for many years, and we are pleased to report that our customers are well on the way of adopting the "Culture of Conservation". Since the early 90's, we were actively involved in the delivery of conservation initiatives to our customers. These initiatives included, Energy Efficiency Seminars, Home Energy Audits, education on Energy Efficiency and Electrical Safety in schools, and general support to the local vendors of energy efficiency products and services. Many of these activities were carried out jointly with other organizations such as the "Green Communities Initiative" which promoted the conservation message for electricity, gas and water. Through our efforts and our partnerships with the Green Communities Initiative, the Environment Network, and our activities in the Local Integrated Resource Plan (LIRP), we have been laying the foundation within our community for establishing the vision of a province that embraces conservation as part of its culture.

Throughout the mid 90's until Market Opening in May, 2002 our customers were well educated on the benefits of load shifting and demand response through our "Hot Water Dollars" program. A central control system was installed to manage the diversity of Electric Water Heaters, and at one point we had almost 80% of the electric water heater load connected to our program. This will become an effective tool for our customers as we move forward implementing the "Smart Meter Initiative". Many customers will be looking for ways to take advantage of the Time-of-Use rates. The Demand Response tools we have in place will allow us to once again offer the control they need, and provide the platform to build on the educational component which will be critical to a successful implementation of Smart Metering.

2005 was a year for re-building our alliances and for renewing customer focus on Conservation. Education itself will not bring reportable results in the form of Kwh's, but our goal is to work with our local customers so that they will eagerly participate in Province wide initiatives and local programs tailored to our customers needs.

A key deliverable planned for 2006 is to provide some Solar Energy PV and Water Heating display units in the communities we serve. These display units will help consumers understand the essential components involved in installing their own "distributed generators" and will be a good educational tool for anyone wishing to take advantage of the "Net Metering" option designed by the ministry.

LDC's across the Province have joined together in unprecedented numbers to gain economies of scale and share our diverse expertise in the area of Conservation. There is no other group of companies that have collectively achieved more in promoting Conservation over the past year than the LDC's. As the delivery agents of the Conservation message, we look forward to the establishment of funding models that will allow LDC's to continue to deliver on the Conservation goals set out by the Government. Annual filings tied with rate applications may serve well from a regulatory perspective, but lack the timeliness of responding to our ever changing environment. Our industry needs to develop methods by which conservation opportunities can receive funding in a timely manner as they arise thereby providing a better chance for sustainable activities. We should also strive to recognize that internal resources of LDC's that are being utilized for Conservation carry value, and should be funded accordingly.

We look forward to a brighter future for the Province and remain dedicated to working with the Province, the OPA, the OEB, the LDC's, and private companies in the pursuit of sustainable Conservation initiatives that help support our customers.

Should you or your staff have any questions related to our comments, please contact Darius Vaiciunas from our office and he would be pleased to clarify any concerns.

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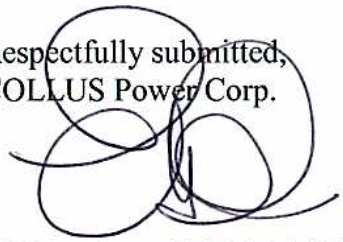
Respectfully submitted,
COLLUS Power Corp.



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Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Web Page	Demand Response	Education & Promotion	Smart Metering
Net TRC value ($):	*-$19,871*	$41,912	$27,131		-$2,220		-$54,576	-$9,226	-$9,238	-$12,019	-$1,636
Benefit to cost ratio:	*0.8*	$5.87	$9.58		N/A		N/A	N/A	N/A	N/A	N/A
Number of participants or units delivered:	*1,910*	1,204	706		N/A		N/A	N/A	N/A	N/A	N/A
Total KWh to be saved over the lifecycle of the plan (kWh):	*1,890,463.68*	1,085,237.20	805,226.48		N/A		N/A	N/A	N/A	N/A	N/A
Total in year kWh saved (kWh):	*158,967.42*	118,706.10	40,261.32		N/A		N/A	N/A	N/A	N/A	N/A
Total peak demand saved (kW):	*31.67*	27.08	4.59		N/A		N/A	N/A	N/A	N/A	N/A
Total kWh saved as a percentage of total kWh delivered (%):	*0.042%*	*0.032%*	*0.011%*		N/A		N/A	N/A	N/A	N/A	N/A
Peak kW saved as a percentage of LDC peak kW load (%):	*0.052%*	*0.044%*	*0.008%*		N/A		N/A	N/A	N/A	N/A	N/A
Gross in year C&DM expenditures ($):	*$124,542*	$6,230	$29,398		$2,220		$54,576	$9,226	$9,238	$12,019	$1,636
Expenditures per KWh saved ($/kWh):*	$0.0659	$0.0057	$0.0365		N/A		N/A	N/A	N/A	N/A	N/A
*Expenditures per KW saved ($/kW)**:*	$3,932.5017	$230.0591	$6,401.7115		N/A		N/A	N/A	N/A	N/A	N/A

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.

Annual Energy	375,021,935
Peak Demand	61,058

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** "Lighten Your Electricity Bill" (Residential)

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

COLLUS Power participated with 31 other LDC's in a coupon campaign with Canadian Tire. Energyshop.com was engaged to design, deliver and track the program. Customers were provided with a bill insert containing energy-savings coupons. Customers had until December 31, 2005 to redeem their point of purchase coupons at any local Canadian Tire outlet. Canadian Tire sent the coupon to a redemption house, who then sorted by utility and product. This program helped increase public awareness of energy conservation and demand management, as well as contribute to the overall development of an energy conservation culture in Ontario.The program results showed a significant increase in total sales of the targetted products accross the province.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	See Attached report from Seeline Group for additional details.		
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):	*$*	*50,513.00*
TRC Costs ($):		
Utility program cost (less incentives):	$	2,730.00
Participant cost:	$	5,871.00
Total TRC costs:	$	8,601.00
Net TRC (in year CDN $):	$	41,912.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	5.87

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

Conservation Programs:

Demand savings (kW):	*Summer*	6.26	
	Winter	27.08	
	lifecycle	*in year*	
Energy saved (kWh):	*1,085,237.20*	118,706.10	
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:	$ 2,730.00
	Incentive:	$ 3,500.00
	Total:	$ 6,230.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	*$5,871.00*
	Total:	$5,871.00

E. Comments:

The success of the program was directly related to the cooperative efforts of the 32 participating LDC's, Canadian Tire, EnergyShop.com, and the SeeLine Group. Many of our customers had thrown away their original coupons and contacted us asking for a replacement after hearing the advertisements on the radio, along with seeing additional information when visiting the Canadian Tire store. The lesson learned here, is for us to ensure we prepare additional advertising well in advance of running such a program to ensure customers are looking for their coupons when they open their monthly invoices.

After talking to other LDC's that had even higher results, we found that the primary reason for that was tied to incremental activities promoting the program. Therefore, we anticipate providing additional local resources to bolster the success of the next province wide collaborative program.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Decorative Lighting Efficiency (Commercial)

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

We worked with our three municipalities to exchange some seasonal and year-round incandescent lighting to LED lighting. The program provided the municipalities with a 2 for 1 exchange, allowing them to increase their lighting at the same time as reducing consumption. Some of the lights are seasonal while others are deployed year-round decorating the main streets to entice tourism. We worked with various retail outlets to purchase the required lights. A local Merchant sold some of the lights to us at a reduced (volume) price with hopes that customers seeing their product on the street would then seek them out. The majority of the lights were purchased from a wholesaler as we wanted commercial grade lighting that would stand up to extended (non-seasonal) use.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent Decorative Lights	7 watt Seasonal Lights	5 Watt Street Decorations
Efficient technology:	LED Decorative Lights	LED Wave Technology	LED Replacement
Number of participants or units delive	485 Strings of LED Lights	67 Strings of Lights	154 Strings of Lights
Measure life (years):	20	20	20

B. **TRC Results:**

TRC Benefits ($):	*$*	*30,294.35*
TRC Costs ($):		
Utility program cost (less incentives):	$	3,162.90
Participant cost:	$	-
Total TRC costs:	$	3,162.90
Net TRC (in year CDN $):	$	27,131.45
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	9.58

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

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter	4.59	
	lifecycle	*in year*	
Energy saved (kWh):	*805,226.48*	40,261.32	
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:	$ 29,397.95
	Incentive:	
	Total:	$ 29,397.95
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

The LED Light exchange program offered the Municipalities a free exchange on a 2 for 1 basis (2 LED strings of lights for 1 incandescent string). The program had multiple goals. 1. Reduce energy consumption of the decorative lighting. 2. Assist the Municipalities in setting the example for the rest of the public. 3. Provide a wide distribution of LED lights giving the public a realistic demonstration of the effects and beauty of the lights, and 4. Provide the message that conservation does not mean doing without. The 2 for 1 option allowed the Municipalities to put up twice as many lights as in previous years, while reducing their energy use by significant amounts. We were surprised at how difficult it was to gain buy-in from those responsible for the lighting. Even though most of the LED lights were high end commercial grade products (and therefore more expensive technologies), there was a lot of trepidation over the colour rendition of the LED technologies. We anticipate this objection will pass over time as people as the lights become something they are used to seeing 365 days of the year.

*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:** Power Factor Audit & Support (Industrial)

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

This program was put in place to assist our Industrial Customers with their overall energy portfolio, targetting Energy, Demand, Power Factor, and general conservation activities as related to electricity, water, and gas. To date, we have hosted a general breakfast meeting with the IESO and arranged for two different Auditors (both enrolled with NRCAN) to work with our two largest industries. The industrial processes are lengthy, so there have been no reportable results available as of the end of 2005. Preliminary expectations are very positive and we expect significant results in 2006.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):	*-$ 2,219.95*
TRC Costs ($):	
Utility program cost (less incentives):	
Participant cost:	
Total TRC costs:	
Net TRC (in year CDN $):	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

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:	$ 2,219.95
	Incentive:	
	Total:	$ 2,219.95
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

COLLUS Power has been working with our customers for many years helping them with their Power Factor and overall electricity use. As such, most of the "low hanging fruit" was picked a long time ago, generally leaving only high cost projects with long paybacks. Our focus now will be on working with our customers to make conservation part of their daily production planning process. This concept has been adopted by one of our key industries, and the preliminary results seem very promising. Prior to Market Opening, all of our Industrial Customers with loads over 100 KW were equipped with Interval meters. Most of the industries access the data from their meters on a regular basis through a WEB based product provided by Utilismart. As part of the installation, staff from COLUS Power would spend from 6 to 8 hours with the customers demonstrating how to use the WEB information. The staff interraction with the customer was not limited to electrical staff but involved their finance, production, upper management, and maintenance staff to ensure a well rounded understanding of their energy use.

*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 Web Site (All Classes)

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

This particular program will provide the members of the CHEC group and their customers a common conservation WEB Page. The investment in this program will provide our collective customers with a one-stop location where they can find information and links to a wide variety of conservation initiatives, programs, and technologies. The program costs also cover the hiring an individual to help with developing and updating the web page and providing overall conservation activity support as we work through the steep learning curve of building and delivering conservation programs to our customers.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):		*-$ 9,225.98*
TRC Costs ($):		
	Utility program cost (less incentives):	
	Participant cost:	
	Total TRC costs:	
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 9,225.98
	Incentive:	
	Total:	$ 9,225.98
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

The Web Page is still in development. The greatest benefit from this expenditure is the overall coordination of CDM activities for the collective 16 LDC's in the CHEC group. The individual hired to perform these duties has provided a common voice as a primary contact between the CHEC group and the various agencies such as the Ministry, the OPA, OEB, and the massive numbers of consultants and entities soliciting our members to purchase their services. The concept of a central contact for the CHEC group has allowed our members to continue with the rigorous requirements of their normal activities while at the same time provide our customers with some quality deliverables on the road to building a Conservation Culture in the Province.

*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 (LDC System)

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

System Optimization is a program involving an in-depth modelling of the loads across the distribution system, in an attempt to discover imbalances and methods by which overall electricity losses can be reduced. Each Fuse, Wire, Transformer, and Distribution Substation has resistive loads that consume electricity in proportion to the loads passed through them. In 2005, we began phase one of the System Optimization process. Phase one involved the hiring of an experienced consultant to do field inspections and computer modelling of the system. Phase two will begin in 2006 and will involve incorporating the findings of the study where overall costs are justifiable.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):		*-$ 54,575.60*
TRC Costs ($):		
	Utility program cost (less incentives):	
	Participant cost:	
	Total TRC costs:	
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

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:	$ 54,575.60
	Incentive:	
	Total:	$ 54,575.60
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

The study has identified small opportunities for system enhancements. A total of less than one tenth of one percent potential demand and energy reduction. Although the identified potential is small, the study provides postitive reinforcement for the ongoing efforts that COLLUS Power has invested in maintaining a reliable and well managed system. Each of the recommendations from the study will be reviewed carefully to ensure that there is a true cost benefit to the customers and that the activities will provide sustainable benefits in light of changing load patterns and growth in the system.

*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:** Investigate / Implement Demand Response Programs

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

COLLUS Power began deploying a VHF Water Heater Load Control System starting in 1995 as part of an overall Conservation program targeted to provide capacity relief on the Transmission System feeding the area. The results were so impressive that we expanded the system to provide control services for four other LDC's. Deregulation and the associated rate mechanisms changed the landscape significantly, requiring the system to be shut down in May 2002. In total, the system had the installed ability to control over 5 Mw of load across the four LDC's. COLLUS has upgraded some Software and Central Control technology to ensure the system will be available for load shedding in concert with the intorduction of Smart Metering and TOU rates.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):		*-$ 9,237.74*
TRC Costs ($):		
	Utility program cost (less incentives):	
	Participant cost:	
	Total TRC costs:	
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

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:	$ 9,237.74
	Incentive:	
	Total:	$ 9,237.74
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

COLLUS staff have worked with a number of LDC's in 2005 investigating opportunities to re-start our control systems in a sustainable fashion. Synchronized load control tests by six different LDC's revealed minor issues with some of the systems that had been sitting idle for a few years. A positive result from these tests was the ability to identify the faulty components, and for staff to re-familiarize themselves with their operation. We are confident our Demand Response system is ready to respond if required for a Capacity, Transmission, or Distribution emergency while we await the implementation of Time of Use rates for our customers. At the present time, it appears that our best course of action is to re-activate our systems in sync with the installation of the Smart Meters, as our studies have shown the direct customer savings would likely off-set the anticipated incremental customer charge for smart metering. At the same time, the Load Control System will become a great tool in helping customer accept and understand the new metering tecnology.

*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:** Education & Promotion

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

COLLUS Power is committed to helping build a Culture of Conservation. It is our true belief that to build the culture, we need to show consistency in message, and lay a strong foundation upon which we can build sustainable customer activity. As part of our customer awareness campaign, we have worked with our local Radio and Television stations to both develop and deliver the conservation message. Due to our direct ties to the Municipalities we service, and our long standing commitment to our communities, both the Radio and Television stations provided us with attractive pricing for our "Public Service Messages". This reinforces the fact that LDC's have a great opportunity to continue working locally and bring value to building a Conservation Culture.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):	*-$ 12,018.75*
TRC Costs ($):	
Utility program cost (less incentives):	
Participant cost:	
Total TRC costs:	
Net TRC (in year CDN $):	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

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:	$ 12,018.75
	Incentive:	
	Total:	$ 12,018.75
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

The ads we ran were consistent with the information currently available to customers on our Utility WEB site. We ran multiple ads both on Radio and on the Television. In running our campaign, we purposely chose two different approaches for the different mediums. On the Radio - whe chose to provide short 30 second commercial ads that offered simple energy conservation tips. We prepared 10 different spots to run at different times of the year. Each season, the related spots would be heard up to 8 times per day, and as a bonus the Radio station is providing us with an opportunity to come in and do a special interview that we can tailor to enhance the support of more specific conservation initiatives. The Television ads also run 4 times per day, 5 days a week, and their prime objective is to remind people that we should all care about conservation. Similar to the Radio Station, we have been provided with opportunities to come in and participate in a local community program to discuss conservation initiatives, and plan on utilizing these spots to enhance more specific conservation initiatives such as Province wide initiatives sponsored by the OPA.

*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 Metering Initiative

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

COLLUS Power is an active participant in the Ontario Utilities Smart Metering Work Group (OUSM). The prime goal of the group is to coordinate and document detailed reviews of Smart Meter Pilot Projects, and provide guidance to the Minister on key technical issues surrounding the implementation of Smart Metering. The group consists of of Utilities, Meter Manufacturers, Software Vendors, and Retailers. By working together, we have been able to limit the number of pilot projects and at the same time delve deeply into all aspects of evaluation. The results of our analysis have been made available to the Ministry of Energy Staff, as well as all the members. Our CDM spending on this project is limited to our membership fees.

Measure(s):

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

B. **TRC Results:**

TRC Benefits ($):		*-$ 1,636.36*
TRC Costs ($):		
	Utility program cost (less incentives):	
	Participant cost:	
	Total TRC costs:	
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 1,636.36
	Incentive:	
	Total:	$ 1,636.36
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

COLUS Power plans to continue working with the OUSM work group in an effort to ensure that as Smart Meter Deployment ramps up across the Province, the LDC's will be able to continue seamlessly provide settlement services for our customers. Another critical factor will be the ability to maintain operational settlements with the IESO, the Retailers, the Generators, and the OPA. By working together with the OUSM group, we bring many industry experts to the table, and increase our chances of a successful rollout of Smart Meters accross the Province which will undoubtedly become the cornerstone of many CDM projects in years to come.

*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
Collingwood Utility Services

By
SeeLine Group Inc.
416-703-8695

February 2006

1.0 Introduction

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

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

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

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

2.0 Program Objectives

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

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

3.0 Program Results

3.1 Technology Savings Assumptions

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

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

Compact Fluorescent Bulbs

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

LED Seasonal Lights

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

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

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

Ceiling Fans

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

Programmable Thermostats

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

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

Indoor Timers

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

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

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

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

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

Outdoor Timers

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

EnerGuide for Homes

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

3.2 Summary of Program Participation

Technology	Number of Participants	Free Ridership
Compact Fluorescent Bulbs	869	10.0%
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	116	10.0%
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	115	10.0%
Programmable Thermostat - Space Heating, Existing Single Family Detached	14	10.0%
Programmable Thermostat - Space Cooling, Existing Single Family Detached	36	10.0%
Timer - Outdoor Light	25	10.0%
Timer - Indoor - Light	5	10.0%
Timer - Indoor - Air Conditioners	5	10.0%
Ceiling Fan	19	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	81,670	4	326,680.13
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	0.00	4646.01	30.00	139,380.41
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	0.00	1762.78	30.00	52,883.27
Programmable Thermostat - Space Heating, Existing Single Family Detached	0.00	18036.46	18.00	324,656.26
Programmable Thermostat - Space Cooling, Existing Single Family Detached	5.22	5089.89	18.00	91,618.07
Timer - Outdoor Light	0.00	6570.00	20.00	131,400.00
Timer - Indoor - Light	0.27	441.36	20.00	8,827.20
Timer - Indoor - Air Conditioners	0.78	489.60	20.00	9,792.00
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		**118,706**		**1,085,237**

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	$19,903	$1,565	$ -	**$18,338**	**12.72**
LED Christmas Lights (indoor or outdoor) Replacing 5w Christmas Lights C-7 (25 Lights)	$4,324	$209	$-	**$4,116**	**20.71**
LED Christmas Lights (indoor or outdoor) Replacing Incandescent Mini Lights	$1,641	$207	$-	**$1,434**	**7.93**
Programmable Thermostat - Space Heating, Existing Single Family Detached	$12,363	$738	$-	**$11,625**	**16.75**
Programmable Thermostat - Space Cooling, Existing Single Family Detached	$6,164	$1,920	$-	**$4,244**	**3.21**
Timer - Outdoor Light	$4,883	$450	$-	**$4,433**	**10.85**
Timer - Indoor - Light	$467	$32	$-	**$436**	**14.83**
Timer - Indoor - Air Conditioners	$768	$32	$-	**$737**	**24.38**
Ceiling Fan	$-	$718	$-	**($718)**	**0.00**
EnerGuide for Existing Homes - Space Heating	$-	$-	$-	**$-**	**n/a**
Program Costs	$-	$-	$2,730	**($2,730)**	**0.00**
Total	**$50,513**	**$5,869**	**$2,730**	**$41,914**	**5.87**

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	
				$ -															