

St. Thomasenergyinc.

We're Your Local Power Distributor

March 28, 2008

Ontario Energy Board
27th Floor
2300 Yonge Street
Toronto, Ontario
M4P 1E4

Attention: Board Secretary

Dear Sir/Madam:

**St. Thomas Energy Inc. - RP-2004-0203\EB-2002-0523
- Conservation and Demand 2007 Annual Report**

The above referenced report is attached in the format requested by The Ontario Energy Board.

This application has been filed in the following OEB requested format:

- electronically through the Board's web portal, one (1) electronic version of the complete Report in searchable format in the prescribed file naming format;
- emailed to boardsec@oeb.gov.on.ca. one (1) electronic version of the complete Report in PDF format and the Appendices in Excel format in the prescribed file naming format and;
- couriered in paper format: five (5) paper copies of the complete Report including a CD containing an electronic copy of all files sent via email.

Respectfully submitted for the Board's consideration.



Brian Hollywood,
President and Chief Executive Officer

St. Thomas Energy Inc. Conservation and Demand 2007 Annual Report

1 INTRODUCTION

1.1 Background

On November 2004, St. Thomas Energy Inc. (STEI) filed an application for a Final Order pre-approving its Conservation and Demand Management (CDM) Plan. The board released its decision and STEI received final approval on February 8, 2005.

STEI CDM Plan incorporates several programs and each program was granted funding to support activities and implementation. As the programs developed, there was little interest or response from the public on some of the programs, while others were more popular. As a result, a request for re-allocation of the approved funding, as well as an extension to use the funding until December 2008, was submitted on October 24, 2007 and the Board's decision approving these requests was received November 19, 2007. *Please see Table 1 for the summary of the programs with the approved and revised budget.*

Program Names	Initial Approved Budget	Revised Budget
Customer Survey	\$1,000.00	\$0.00
Conservation Website	\$5,000.00	\$0.00
Education and Promotion	\$18,000.00	\$5,000.00
Partnership and Sponsorship	\$15,000.00	\$75,000.00
Energy Audit / Projects	\$50,000.00	\$20,000.00
System Optimization	\$20,000.00	\$30,000.00
Renewable Energy Study	\$25,000.00	\$0.00
Investigate Demand Response Programs	\$20,000.00	\$0.00
Co-Generation Opportunities	\$15,000.00	\$0.00
Provide Customers with Energy Tools	\$15,000.00	\$54,000.00
Signal / Street Lighting Efficiency	\$20,000.00	\$20,000.00
Total	\$204,000.00	\$204,000.00

Table 1. Summary of CDM Programs and Budgets

1.2 Purpose and Scope

The Ontario Energy Board (OEB) ordered that STEI, as an LDC, should file quarterly reports and annual reports to track the development of the proposed CDM initiatives. This document reports on STEI's progress in energy conservation and demand management initiatives and on the resulting conservation achievements for the year 2007.

1.3 Previous CDM Activities

1.3.1 Year 2005

Activities in 2005 were limited to "Education and Promotion". It included STEI's involvement in the procurement of information booklets from the Ontario Government. The booklet was entitled as "Tips to help you...Conserve Energy and Save Money". These were distributed to walk-in customers and by telephone and electronic mail requests. The remaining booklets were distributed to the public through promotional events for other conservation programs throughout the year 2007.

1.3.2 Year 2006

Activities in the year 2006 were focused on two areas: Partnerships and Sponsorships, and Signal / Street Lighting Efficiency. STEI got involved in partnering with the Ontario Ministry of Small Business and Entrepreneurship, the Independent Electricity System Operator and Natural Resources Canada on a customized energy management workshop for general services customers which was entitled "The Bottom Line on Energy Management". The event took place in St. Thomas on September 20, 2006. STEI was also involved in the procurement, installation and connection of 2035 LED Christmas Lights for the City of St. Thomas' Christmas Decorations at the City Hall.

2 EVALUATION OF THE CDM PLAN

For the past 3 years, STEI progressively implemented our CDM plan. In 2006, we managed to engage our customers on several programs. These programs continued to gather more responses and became more successful in 2007. But among the overall portfolio, a few programs were successfully completed, a few had measurable results that are sufficient for this report and others were not implemented at all. The specific programs to apply the evaluation measures are:

Partnerships and Sponsorships:	Earth Day Campaign
System Optimization:	System Loss Reduction
Provide Customers with Energy Tools:	Utilismart Web Access
Energy Audits:	Retrofit Program for Small Businesses
Signal / Street Light Efficiency	Traffic Light Replacements

Please refer to Appendix A and Appendix C for complete evaluation of each program.

3 DISCUSSION OF PROGRAMS

The highlights of the 2007 Conservation and Demand Management Programs are outlined below. For more elaborated descriptions of the programs, please refer to Appendix B, Discussion of the Programs.

3.1 Partnerships and Sponsorships

Project Name: Earth Day Environmental Action Campaign
Status: In-progress
Target: All customers, mainly residential customers

Actions:

- Provides residential customers with a Conservation Kit through a fund raising campaign to benefit students of local schools in St. Thomas.
- Compact fluorescent lights (CFL) are distributed to the public during promotional campaigns for conservation of energy.
- During the mall promotional event, a display showing the difference of energy consumption between CFL and incandescent light was available for the public.

Total Resource Cost: - \$46,090.65

Comments:

TRC came out to be negative because not all kits were deployed. The project will continue until the end of the year 2008. STEI is looking for sports organizations, youth clubs or schools who are willing to work with them in another fundraising project to deploy all the remaining kits.

Reference: Appendix B1

3.2 System Optimization

Project Name: System Loss Reduction
Status: In-Progress
Target: STEI Distribution System

Actions:

- Distribution system software was purchased to help plan future developments on the network system and to look for opportunities to optimize the system.
- Engineers attended 3-day training in Montreal on October 2007 as a start for utilizing the software.
- The network model was built and preliminary studies were finished.

Total Resource Cost: Not Applicable

Comments:

The preliminary network model was built and simulated losses in an acceptable range (approximately 2.5%). This compared favourably with the last 5 year average of 3.09%.

Reference: Appendix B2

3.3 Provide Customers with Energy Tools

Project Name: Utilismart Energy Management
Status: In-Progress
Target: Industrial Customers

Actions:

- STEI provided industrial and commercial customers that were interval metered with capability of retrieving their meter data along with training on how to access these data as well as how to use these data to properly manage their electricity usage.
- The customers started accessing their data independently since July 2007.

Total Resource Cost: Not Applicable

Comments:

Currently, there are 24 customers (both industrial and commercial class) enrolled on the Utilismart Energy Management Program. Most of them are still on the process of learning how they can take advantage of the information available to them.

Reference: Appendix B3

3.4 **Energy Audit / Projects**

Project Name: Retrofit Program for Smaller Businesses
Status: In-Progress
Target: Small Business Customers

Actions:

- Reviewed customer's retrofit projects that were not qualified under the OPA's Electricity Retrofit Incentive Program.

Total Resource Cost: \$470.48

Reference: Appendix B4

3.5 **Signal / Street Light Efficiency**

Project Name: Traffic Lights Replacements
Status: Completed
Target: STEI Distribution System

Actions:

- STEI supported City of St. Thomas' Traffic Lights Replacement Project by subsidising 10% of the project's total cost.
- The city's traffic lights were replaced with Light-Emitting Diode Modules.

Total Resource Cost: \$149,745.46

References: Appendix B5

4 LESSONS LEARNED

4.1 Partnerships and Sponsorships

- ✓ Cost Sharing – Through partnering with other utilities to execute the Earth Day Campaign, STEI and other participants took advantage of eliminating some expenses through cost sharing. It enabled STEI to minimize the project cost and continued to provide the best value to pursue the project.
- ✓ Fundraising Opportunities – At the beginning of this project, the only intention of STEI is to educate the public on simple ways to save electricity and money. But through the fundraising opportunities given to the local schools, STEI was able to help them produce funds for their future environmental activities. Maximizing the opportunities in a single project will then be taken into consideration in planning future projects.
- ✗ Marketing Activities – The main reason why there was a small percentage of deployment of the conservation kits was due to lack of marketing activities. Aside from the students who did house to house selling and advertisement in the local paper, no other promotional events were held last year. Comparing these to other projects of STEI, marketing was found-out to be a big factor in the success of these kinds of projects.

4.2 System Optimization

- ✓ Long-term Investment – Even though STEI's distribution network is not as big and sophisticated as other LDCs, it is significantly developing every year. STEI purchased distribution system software as an aid to optimize the system. After becoming familiar with the software, more applications were found that will be useful for STEI's daily operations and future development. It is then considered as a good long term investment for STEI.
- ✗ Developing Contacts – Most of the time, exchanging ideas and opinions with others is a great source of knowledge. STEI is looking forward to attending a user group conference for the purchased software to gain more knowledge from other users' experiences and mistakes to make the most out of the software.

4.3 Provide Industrial Customers with Energy Tools

- ✓ Providing Incentives – STEI discovered that subsidising the customer’s monthly cost to access their meter data was a big factor to convince them to enrol in the program. Most customers are determined to do their part if they know that they will get benefits out of it.
- ✗ Provide More Knowledge – So far, significant results were not seen yet with this program because the enrolled customers need to attend more seminars or workshops to get more knowledge on utilizing their meter data to improve their electricity usage.

4.4 Energy Audits / Projects

- ✓ Measured Initiatives – It was surprising that for a small LDC like STEI, a number of customers participated in the OPA’s Electricity Retrofit Incentive Program. A few customers, such as owners of small businesses, are willing to undergo energy efficient retrofits but tend to change their mind because of not meeting the minimum requirements. It is difficult for small establishments to achieve ERIP’s minimum requirements; consequently this program will provide some financial support.

4.5 Signal / Street Light Efficiency

- ✓ Setting an Example – STEI set a good example by supporting this major energy efficient project in the city of St. Thomas. This involvement showed STEI’s sincerity in promoting conservation of electricity which inspired customers to follow and start conserving in their own ways or by participating in the programs offered to them.

5 CONCLUSIONS

St. Thomas Energy Inc. had higher level of activities in 2007 compared to previous years. Most of the Third Tranche Funds were spent through the projects launched and implemented this year. A re-allocation of funds was necessary due to some changes on the approved Conservation and Demand Management Plan. Some programs were cancelled and some were successfully implemented such as Partnerships and Sponsorships, System Optimization, Energy Audits, Signal / Street Light Efficiency and Providing Industrial Customers with Energy Tools.

The programs were evaluated according to the Ontario Energy Board's cost effectiveness test (Total Resource Cost). Some programs had negative TRCs because the energy efficient equipment was not yet completely deployed (refer to Appendix A). All incomplete programs will continue up to December 31, 2008 as approved by the Board and a final cost effectiveness test will be provided and submitted at that time.

Appendix A - Evaluation of the CDM Plan

Highlighted boxes are to be completed manually, white boxes are linked to Appendix C and will be brought forward automatically.

	⁵ Cumulative Totals Life-to-date	Total for 2007	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	⁴ Smart Meters	Traffic Lights	Other #2
Net TRC value (\$):	\$113,209.29	\$ 104,125	\$ (46,091)	\$ 470	\$ -	\$ -	\$ -	\$ -		\$ 149,745	\$ -
Benefit to cost ratio:	1.65	1.65	0.39	1.60	0.00	0.00	0.00	0.00		2.80	0.00
Number of participants or units delivered:	2312	2312	1068	12	0	0	0	0	0	1232	0
Lifecycle (kWh) Savings:	3,670,164	3,670,164	734,784	15,540	0	0	0	0		2,919,840	0
Report Year Total kWh saved (kWh):	478,788	478,788	183,696	3,108	0	0	0	0		291,984	0
Total peak demand saved (kW):	147	147	80	2	0	0	0	0		65	0
Total kWh saved as a percentage of total kWh delivered (%):	0.130500805	0.130500805	0.050069083	0.000847132	0	0	0	0		0.079584591	0
Peak kW saved as a percentage of LDC peak kW load (%):	0.247917353	0.247917353	0.135436081	0.002576836	0	0	0	0		0.109904436	0
¹ Report Year Gross C&DM expenditures (\$):	\$153,691.15	\$ 143,649	\$ 75,206	\$ 216	\$ -	\$ 21,760	\$ -	\$ 26,467	\$ -	\$ 20,000	\$ -
² Expenditures per kWh saved (\$/kWh):	\$0.04	\$ 0.04	\$ 0.10	\$ 0.01	\$ -	\$ -	\$ -	\$ -		\$ 0.01	\$ -
³ Expenditures per KW saved (\$/kW):	\$ 1,048.20	\$ 979.71	\$ 938.91	\$ 141.73	\$ -	\$ -	\$ -	\$ -		\$ 307.69	\$ -
Utility discount rate (%):	6.5481										

¹ Expenditures are reported on accrual basis.

² Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings

³ Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.

⁴ Please report spending related to 3rd tranche of MARR funding only. TRC calculations are not required for Smart Meters. Only actual expenditures for the year need to be reported.

⁵ Includes total for the reporting year, plus prior year, if any (for example, 2006 CDM Annual report for third tranche will include 2005 and 2004 numbers, if any).

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Earth Day Campaign

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

Earth Day Campaign is a fund-raising project for local schools in St. Thomas. The students distributed a Conservation Kit that contains 4 Fluorescent Lights, water flow measurement bag and toilet testing die tablets. The intention is to educate the consumers on simple ways to conserve electricity and water - such as replacing their incandescent lights with fluorescent lights. After the campaign, fluorescent lights were given away during promotional events in the city. Excess conservation kits will be deployed before the end of 2008.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent Light		
Efficient technology:	Fluorescent Light		
Number of participants or units delivered for reporting year:	1068		
Measure life (years):	4		
Number of Participants or units delivered life to date	18000		

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):	\$ 29,115.81	\$ 29,115.81
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 5,689.02	\$ 5,689.02
Incremental Measure Costs (Equipment Costs)	\$ 69,517.44	\$ 69,517.44
Total TRC costs:	\$ 75,206.46	\$ 75,206.46
Net TRC (in year CDN \$):	-\$ 46,090.65	-\$ 46,090.65
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ 0.39	\$ 0.39

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

Conservation Programs:

	Summer	Winter	Cumulative Lifecycle	Cumulative Annual Savings
Demand savings (kW):	39.516	40.584	734,784	183,696
Energy saved (kWh):	734,784	183,696	734,784	183,696
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 beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):

lifecycle

in year

Energy savings (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. Actual Program Costs:

Utility direct costs (\$):

Incremental capital:

\$ 57,931.20

Cumulative Life to Date

\$ 57,931.20

Incremental O&M:

\$ 4,569.82

\$ 4,569.82

Incentive:

Total:

\$ 62,501.02

\$ 62,501.02

Utility indirect costs (\$):

Incremental capital:

\$ 11,586.24

Incremental O&M:

\$ 1,119.20

Total:

\$ 12,705.44

\$ 11,586.24

\$ 1,119.20

\$ 12,705.44

E. Assumptions & Comments:

Providing the public with energy efficient lights and other conservation materials increased their knowledge in conservation of electricity. Feedbacks are continuously coming from customers saying that the conservation kits were very efficient and useful. Residents of St. Thomas started replacing their lights with CFLs. St. Thomas Energy Inc. will look for more partnership and sponsorship opportunities to push the completion of the program before the end of 2008.

¹ Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

² For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** System Optimization

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

St. Thomas Energy Inc. is conducting studies on the distribution system network to find opportunities to reduce the system losses. Power engineering software was purchased and utilized to build a system model for the distribution network. Engineers are working on several analyses such as reduction of line losses, switching optimization, load balancing, capacitor placement and load growth predictions.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Manual Study of System Optimization		
Efficient technology:	System Optimization using the Software		
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):		
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 13,266.58	\$ 13,266.58
Incremental Measure Costs (Equipment Costs)	\$ 13,200.00	\$ 13,200.00
Total TRC costs:	\$ 26,466.58	\$ 26,466.58
Net TRC (in year CDN \$):		

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

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

Conservation Programs:

Demand savings (kW):	Summer				
	Winter				
		<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
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 beginning of year (%):		
Distribution system power factor at end of year (%):		

Line Loss Reduction Programs:

Peak load savings (kW):			
	<i>lifecycle</i>	<i>in year</i>	
Energy savings (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):		
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D. <u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	\$ 11,000.00	\$ 11,000.00
	<i>Incremental O&M:</i>	\$ 11,055.49	\$ 11,055.49
	<i>Incentive:</i>		
	<i>Total:</i>	\$22,055.49	\$ 22,055.49
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	\$ 2,200.00	\$ 2,200.00
	<i>Incremental O&M:</i>	\$ 2,211.09	\$ 2,211.09
	<i>Total:</i>	\$ 4,411.09	\$ 4,411.09

E. Assumptions & Comments:

Based on the initial study - load allocation, the system has a loss of 2.68% - taking into consideration the line losses and equipment losses. STEI is still in the process of studying the best option to consider in reducing the system loss.

¹ Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.
² For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Utilismart Energy Management

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

Some industrial customers of STEI are utilizing interval meters in their premises. STEI provided them with a tool – Energy Management Web Access to improve the utilization of the meters. The web tool provides the users the following: electricity usage readings, meter data validation, demand value calculation and power consumption calculation.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	No Energy Tool		
<i>Efficient technology:</i>	Interval Metering with Energy Tool		
<i>Number of participants or units delivered for reporting year:</i>	24		
<i>Measure life (years):</i>			
<i>Number of Participants or units delivered life to date</i>	24		

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):		
² TRC Costs (\$):		
<i>Utility program cost (excluding incentives):</i>	\$ 21,759.60	\$ 21,759.60
<i>Incremental Measure Costs (Equipment Costs)</i>		
Total TRC costs:	\$ 21,759.60	\$ 21,759.60
Net TRC (in year CDN \$):		
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>		

C. Results: (one or more category may apply)	Cumulative Results:			
Conservation Programs:				
<i>Demand savings (kW):</i>	<i>Summer</i>			
	<i>Winter</i>			
	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<i>Energy saved (kWh):</i>				
<i>Other resources saved :</i>				
<i>Natural Gas (m3):</i>				
<i>Other (specify):</i>				
Demand Management Programs:				
<i>Controlled load (kW)</i>				
<i>Energy shifted On-peak to Mid-peak (kWh):</i>				
<i>Energy shifted On-peak to Off-peak (kWh):</i>				
<i>Energy shifted Mid-peak to Off-peak (kWh):</i>				
Demand Response Programs:				
<i>Dispatchable load (kW):</i>				
<i>Peak hours dispatched in year (hours):</i>				
Power Factor Correction Programs:				
<i>Amount of KVar installed (KVar):</i>				
<i>Distribution system power factor at beginning of year (%):</i>				
<i>Distribution system power factor at end of year (%):</i>				

Line Loss Reduction Programs:

Peak load savings (kW):			
	<i>lifecycle</i>	<i>in year</i>	
Energy savings (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):		
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<u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
Utility direct costs (\$):	Incremental capital:	\$ 18,133.00	\$ 18,133.00
	Incremental O&M:		
	Incentive:		
	Total:	\$ 18,133.00	\$ 18,133.00
Utility indirect costs (\$):	Incremental capital:	\$ 3,626.60	\$ 3,626.60
	Incremental O&M:		
	Incentive:		
	Total:	\$ 3,626.60	\$ 3,626.60

E. Assumptions & Comments:

As of the moment, the data gathered is not enough to determine the energy savings out of this program. The intent is to study the effect of the data management website after 1 year of enrolment. A comparison of the customer's consumption from the previous years to year 2007 is one way of determining the effectiveness of the program.

¹ Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

² For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Retrofit Program for Small Businesses

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

This project was influenced by OPA’s Electricity Retrofit Incentive Program but is intended for smaller businesses. This is for some customers who are doing energy efficient retrofits in their premises but don’t meet the ERIP’s qualifications. The application process and evaluation is similar to ERIP.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Inefficient T12s		
Efficient technology:	4-lamp high performance T8 fixtures		
Number of participants or units delivered for reporting year:	12		
Measure life (years):	5		
Number of Participants or units delivered life to date	12		

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):	\$ 1,250.48	\$ 1,250.48
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ -	\$ -
Incremental Measure Costs (Equipment Costs)	\$ 780.00	\$ 780.00
Total TRC costs:	\$ 780.00	\$ 780.00
Net TRC (in year CDN \$):	\$ 470.48	\$ 470.48
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ 1.60	1.60

C. Results: (one or more category may apply)	Cumulative Results:			
Conservation Programs:				
Demand savings (kW):	Summer	0.78	0.78	0.78
	Winter	0.744	0.744	0.744
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	15,540	3,108	15,540	3,108
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 beginning of year (%):				
Distribution system power factor at end of year (%):				

Line Loss Reduction Programs:

Peak load savings (kW):			
	<i>lifecycle</i>	<i>in year</i>	
Energy savings (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):		
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D. <u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	\$ -	\$ -
	<i>Incremental O&M:</i>	\$ -	\$ -
	<i>Incentive:</i>	\$ 180.00	180
	<i>Total:</i>	\$ 180.00	\$ 180.00
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	\$ 36.00	\$ 36.00
	<i>Incremental O&M:</i>		
	<i>Total:</i>	\$ 36.00	\$ 36.00

E. Assumptions & Comments:

The incentive amount provided to the customer was calculated by following ERIP's prescriptive lighting project worksheet. The program will continue supporting small businesses in St. Thomas who will undergo energy efficient retrofits but will not qualify on ERIP's requirements.

¹ Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

² For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Traffic Light Replacements

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

STEI supported the city's project to replace the traffic lights with Light Emitting Diode modules. There are approximately 1,232 traffic incandescent light bulbs replaced with LED modules. Roughly 1/3 or 410 bulbs were 116 Watts and the remaining 2/3 were 69 Watts. The new LED modules are 8 Watt each. STEI covered 10% of the project's cost which is approximately \$200,000.00

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent Traffic Lights		
Efficient technology:	LED Modules		
Number of participants or units delivered for reporting year:	1232		
Measure life (years):	10		
Number of Participants or units delivered life to date	1232		

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):	\$ 233,115.46	\$ 233,115.46
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 20,000.00	\$ 20,000.00
Incremental Measure Costs (Equipment Costs)	\$ 63,370.00	\$ 63,370.00
Total TRC costs:	\$ 83,370.00	\$ 83,370.00
Net TRC (in year CDN \$):	\$ 149,745.46	\$ 149,745.46
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.80	2.80

C. Results: (one or more category may apply)	Cumulative Results:		
Conservation Programs:			
Demand savings (kW):	Summer	32.65	32.65
	Winter	32.65	32.65
	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>
Energy saved (kWh):	2,919,840	291,984	2,919,840
Other resources saved :			<i>Cumulative Annual Savings</i>
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 beginning of year (%):			
Distribution system power factor at end of year (%):			

Line Loss Reduction Programs:

Peak load savings (kW):			
	<i>lifecycle</i>	<i>in year</i>	
Energy savings (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):		
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<u>D. Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
Utility direct costs (\$):	Incremental capital:	\$ 20,000.00	\$ 20,000.00
	Incremental O&M:		
	Incentive:		
	Total:	\$ 20,000.00	\$ 20,000.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The TRC Results was calculated based from OEB's assumption (LED EXIT lights projects).

¹ Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

² For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix C - Program and Portfolio Totals

Report Year: 2007

1. Residential Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
<i>Earth Day Campaign</i>	\$ 29,115.81	\$ 75,206.46	-\$ 46,091	0.39	183,696	734,784	80	\$ 75,206
<i>Name of Program B</i>			\$ -	0.00				
<i>Name of Program C</i>			\$ -	0.00				
<i>Name of Program D</i>			\$ -	0.00				
<i>Name of Program E</i>			\$ -	0.00				
<i>Name of Program F</i>			\$ -	0.00				
<i>Name of Program G</i>			\$ -	0.00				
<i>Name of Program H</i>			\$ -	0.00				
<i>Name of Program I</i>			\$ -	0.00				
<i>Name of Program J</i>			\$ -	0.00				
*Totals App. B - Residential	\$ 29,116	\$ 75,206	-\$ 46,091	0.39	183,696	734,784	80	\$ 75,206
<i>Residential Indirect Costs not attributable to any specific program</i>								
Total Residential TRC Costs		\$ 75,206						
**Totals TRC - Residential	\$ 29,116	\$ 75,206	-\$ 46,091	0.39				

2. Commercial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Retrofit Program	\$ 1,250.48	\$ 780	\$ 470	1.60	3,108	15,540	2	\$ 216
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Commercial	\$ 1,250	\$ 780	\$ 470	1.60	3,108	15,540	2	\$ 216
Commercial Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ 780						
**Totals TRC - Commercial	\$ 1,250	\$ 780	\$ 470	1.60				

3. Institutional Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Institutional	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Institutional Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Institutional	\$ -	\$ -	\$ -	0.00				

4. Industrial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Utilismart Energy Management			\$ -	0.00				\$ 21,760
Name of Program C			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Industrial	\$ -	\$ -	\$ -	0.00	0	0	0	\$ 21,760
Industrial Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Industrial	\$ -	\$ -	\$ -	0.00				

5. Agricultural Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Agricultural	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Agricultural Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Agricultural	\$ -	\$ -	\$ -	0.00				

6. LDC System Programs


List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
<i>System Loss Reduction</i>			\$ -	0.00				\$ 26,467
<i>Name of Program C</i>			\$ -	0.00				
<i>Name of Program D</i>			\$ -	0.00				
<i>Name of Program E</i>			\$ -	0.00				
<i>Name of Program F</i>			\$ -	0.00				
<i>Name of Program G</i>			\$ -	0.00				
<i>Name of Program H</i>			\$ -	0.00				
<i>Name of Program I</i>			\$ -	0.00				
<i>Name of Program C</i>			\$ -	0.00				
*Totals App. B - LDC System	\$ -	\$ -	\$ -	0.00	0	0	0	\$ 26,467
<i>LDC System Indirect Costs not attributable to any specific program</i>								
Total TRC Costs		\$ -						
**Totals TRC - LDC System	\$ -	\$ -	\$ -	0.00				

7. Smart Meters Program


Only spending information that was authorized under the 3rd tranche of MARR is required to be reported for Smart Meters.

Report Year Gross C&DM Expenditures (\$) 

8. Traffic Lights Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Traffic Light Efficiency	\$ 233,115.46	\$ 83,370.00	\$ 149,745	2.80	291,984	2,919,840	65	\$ 20,000
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Traffic Lights	\$ 233,115	\$ 83,370	\$ 149,745	2.80	291,984	2,919,840	65	\$ 20,000
Traffic Lights Indirect Costs not attributable to any specific program 								
Total TRC Costs		\$ 83,370						
**Totals TRC - Traffic Lights	\$ 233,115	\$ 83,370	\$ 149,745	2.80				


9. Other #2 Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Other #2	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Other #2 Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Other #2	\$ -	\$ -	\$ -	0.00				

LDC's CDM PORTFOLIO TOTALS

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
*TOTALS FOR ALL APPENDIX B	\$ 263,482	\$ 159,356	\$ 104,125	1.65	\$ 478,788	\$ 3,670,164	146.62	\$ 143,649
Any <i>other</i> Indirect Costs not attributable to any specific program								
TOTAL ALL LDC COSTS		\$ 159,356						
**LDC' PORTFOLIO TRC	\$ 263,482	\$ 159,356	\$ 104,125	1.65				

* The savings and spending information from this row is to be carried forward to Appendix A.

** The TRC information from this row is to be carried forward to Appendix A.