

**Peterborough Distribution Inc.**  
**RP-2004-0203/EB-2004-0409**  
**Conservation and Demand Annual Report**  
**March 31, 2006**

## **Introduction**

Our Conservation and Demand Management program consists of seven initiatives that are described below.

### **Installation of Thermal Storage Electric Heaters**

In co-operation with the local social housing authority, the LDC will provide financial, technical and administrative assistance to convert approximately 600 electrically heated units from baseboard electric heating to electric thermal storage heating.

### **Radio Signals to Control Appliances and Shift Usage to Off Peak Periods**

The LDC will develop a radio signal system that may be used by customers to control appliances and shift discretionary use of electricity to off peak times.

### **Infra-Red Camera to Detect Heat Loss in Buildings and to Detect Line Losses**

The LDC will purchase an infra-red camera. In co-operation with Peterborough Green Up, a survey of buildings will be performed at the customer's request. Green Up will conduct its survey with the intent of reducing consumption of electricity and other environmental considerations.

### **Energy Star Appliance Promotion**

The program provides for a \$50 incentive for each Energy Star rated appliance purchased by customers.

### **Appliance Load Monitors**

The LDC will purchase a number of load monitors, which indicate to the customer the size of the electric load and how much energy it is consuming. The monitors will be loaned to customers who will use them to learn how much energy is being used by various appliances and devices within their home or business.

### **Cool Shops (previously called Development of EnerGuide for Small Business)**

Provide funding to assist Peterborough Green-Up to develop, test and provide a pilot demonstration for Cool Shops for Small Business. The LDC will provide funding and some in-kind contributions.

### **Public Education Programs**

At present, the LDC provides a safety program to all of the schools within its service territory. This program will be augmented to provide electricity conservation along with the safety messages. The LDC will participate in trade shows, home shows and other venues, and will provide information through the various media, regarding conservation and demand management information.

## **Evaluation of the CDM Plan**

Please see enclosed Appendix A.

## **Discussion of the Program**

Please see enclosed Appendix B for each of our CDM programs.

## **Lessons Learned**

Lessons learned in 2005 as the Conservation and Demand program was implemented are as follows for our initiatives:

### **Energy Star**

- There was confusion initially since appliances were labeled Energy Star but did not qualify according to the catalogue or website. Coordination with appliance retailers was required so that they communicated to customers that models had to qualify officially for the Energy Star Rebate program
- It took longer than expected to do the research to make sure that the appliance that was purchased by the customer was in fact an energy star appliance and met with the requirements
- We found that by using the website for the list of energy star appliances, it provided us with the most up to date list and was

much more efficient than looking it up in the catalogue that became outdated quickly

- At first we rebated a straight \$50.00 per appliance, however, some customers were requesting a \$50 rebate on a \$60 appliance. We changed our policy to pay out the maximum \$50 or 15% of the cost of the appliance.
- A rebate program will become less effective as appliance retailers start carrying only Energy Star appliances.

This program was successful in generating interest in Energy Star appliances and encouraging customers who might have focused on other appliance features to consider energy efficiency as part of the purchase decision.

We intend to continue with this initiative for the remainder of the CDM plan.

### **Storage Heating**

- This initiative has allowed us to extend our past experience with shifting demand from on peak to off peak by using radio control signals through the SCADA program
- We were pleasantly surprised at how much of the load was actually shifted to off peak by the implementation of this initiative
- We have been able to demonstrate the savings to the social housing authority because of the availability of TOU rates
- This initiative has helped us educate the customer and raise their awareness of the benefits of energy conservation

This initiative was successful in shifting consumption from on peak to off peak in partnership with the local municipality. In accordance with the requirements of the TRC, the benefits calculated for Appendix B reflect a savings of consumption but not of demand.

We intend to continue with this initiative for the remainder of the CDM plan.

### **Radio Signal**

- We have found that this initiative requires more administration time than expected as customers have many questions and request information on how the program works and the potential benefits and savings

- For the pilot, we initially targeted customers that are committed to conservation and demand management
- More public education will attract further participants
- Participants, for the most part, are reporting that, although their appliances and water heating are shut off during certain times of the day, they are not being inconvenienced by the appliance control
- Installing a smart meter at these residences and providing TOU rates readily demonstrates the financial savings to our participants

In accordance with the requirements of the TRC, the benefits calculated for Appendix B reflect a savings of consumption and on peak summer demand.

We intend to continue with this initiative for the remainder of the CDM plan.

### **Infra Red Camera**

- Our expectation of conducting building audits at the customer's request has not been realized. We expected that our partner, Peterborough Green-Up, would be able to perform home audits but we discovered that it takes much longer to do an audit than originally expected and the camera is more complicated to use than expected. Given this experience in actual application, we have determined that Peterborough Green-Up does not have the resources to perform this function.

This initiative has been discontinued.

### **Load Monitor**

- We have found that, although there is a fair amount of interest by the public, customers are busy and tend not to make a special trip to pick up a load monitor
- We feel that making the load monitors more accessible to the public for pick up and drop off purposes would increase the participation rate but we want to ensure that customers report on the results and their anticipated action plan
- We will begin taking a load monitor to a high bill complaint location to help resolve the complaint
- We created an in-house reporting program that reduced the manual collection of data and produced more information to aid in the annual reporting

This initiative is break-even in financial terms but provides the intangible benefits of educating customers in addition to giving them the means to make an individual direct contribution to energy conservation.

We intend to continue with this initiative for the remainder of the CDM plan.

### **Cool Shops**

- If given significant enough financial incentives, small business owners will purchase simple, turnkey, energy efficient products for their business
- Businesses need a significant financial incentive in order to consider and implement T12 > T8 lighting retrofits. In the eyes of a business owner, this is a huge capital investment which most businesses are not able to take part in
- There may be a greater opportunity to encourage the T12 > T8 lighting retrofits in participating cities if a number of local, qualified electrician contractors are recommended and promoted through the program
- The reason not all businesses in each community participated in the program was mostly due to landlords/owners not being present or available to speak to. In addition, some business owners did not have time to do an audit or were simply not interested in participating
- For future program expansion, partnerships should be developed with local community groups to help increase credibility and awareness of the program

Participation in the Cool Shops initiative was helpful for us because it was more efficient to join with other cities in this joint service offering. This initiative was successful because it provides business owners with the assistance and encouragement to invest in energy conservation.

We intend to continue with this initiative for the remainder of the CDM plan.

### **Conclusion**

Our CDM plan has been a success. It enabled us to learn about our individual initiatives and, importantly, to learn about smart meters, its associated technologies and the billing of TOU rates.

We find that customers are interested in energy conservation but need encouragement to take action in achieving energy savings.

We underestimated how long it takes to implement initiatives in general and how onerous it is to report on the initiatives.

Five of six initiatives showed a positive TRC ratio in addition to their intangible benefits. These initiatives plus the Public Education program will be continued for the remainder of the CDM program.

**Appendix A - Evaluation of the CDM Plan**

	Total	Residential	Commercial	Institutional	Industrial Agricultural	LDC System	CDM Marketing (Public Education)	Other 2	Other 3	Other 4
Net TRC Value (\$)	757,745.55	531,008.97	331,014.58				(104,278.00)			
Benefit to cost ratio:	1.36	1.43	1.44				0			
Number of participants or units delivered	3,455	2,649	806				0			
Total kWh to be saved over the lifecycle of the plan (kWh)	22,456,290	11,079,597	11,376,693				0			
Total in year kWh saved (kWh)	114,663	85,916	28,747				0			
Total peak demand saved (kW)	51	51	-							
Total kWh saved as a percentage of total kWh delivered (%)	0.01%									
Peak kW saved as a percentage of LDC peak kw Load (%)	0.04%									
Gross program life C&DM expenditures (\$)	1,233,818.49	996,555.36	132,985.13				104,278.00			
Expenditures per kWh saved (\$/kWh)	0.05	0.09	0.01							
Utility discount rate (%)	0.0799									

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Energy Star Appliances

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

There was a flood in Peterborough in July 2004. Peterborough applied for and received approval to rebate customers \$50 per Energy Star appliance purchased to an approved amount of \$25,000. The CDM proposal continued the program and removed the requirement that the appliance had to be flood-damaged. The program involves the customer completing a form and bringing in the receipt. Customer Service activity involves researching that the appliance qualifies as an Energy Star appliance and applying the rebate to the customer's utility account. Appliance retailers participated in the program by notifying customers that it was available and by providing forms. The program participation rate has been favourable. It is expected that we will be able to disburse the number of appliance rebates for which we budgeted.

**Measure(s):**

	Replace appliance		
Base case technology:	Non energy star appliance		
Efficient technology:	Energy star appliance		
Number of participants or units delivered	1660		
Measure life (years):	15		

B. **TRC Results:**

TRC Benefits (\$):	\$	185,665.26
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 10,108.60
	Participant cost:	\$ 151,192.80
	<b>Total TRC costs:</b>	<b>\$ 161,301.40</b>
<b>Net TRC (in year CDN \$):</b>	<b>\$</b>	<b>24,363.86</b>
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	<b>\$</b>	<b>1.15</b>

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	<i>Summer</i>	
	<i>Winter</i>	
	<i>lifecycle</i>	<i>in year</i>
<i>Energy saved (kWh):</i>	1,414,734.52	62437.5
<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 begining of year (%):</i>	
<i>Distribution system power factor at end of year (%):</i>	

**Line Loss Reduction Programs:**

<i>Peak load savings (kW):</i>		
	<i>lifecycle</i>	<i>in year</i>
<i>Energy savngs (kWh):</i>		

**Distributed Generation and Load Displacement Programs:**

<i>Amount of DG installed (kW):</i>	
<i>Energy generated (kWh):</i>	
<i>Peak energy generated (kWh):</i>	
<i>Fuel type:</i>	

**Other Programs (specify):**

*Metric (specify):*

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**D. Program Costs\*:**

*Utility direct costs (\$):*

*Incremental capital:*

10,018.10

*Incremental O&M:*

40.50

*Incentive:*

-

*Total:*

\$10,058.60

*Utility indirect costs (\$):*

*Incremental capital:*

*Incremental O&M:*

50.00

*Total:*

\$50.00

*Participant costs (\$):*

*Incremental equipment:*

151,192.80

*Incremental O&M:*

-

*Total:*

\$151,192.80

\$161,301.40

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**E. Comments:**

We got approval from the OEB to run this program in 2004 because of a flood in Peterborough which required many customers to replace appliances.

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Storage Heating

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

In co-operation with the local social housing authority, the LDC will provide financial, technical and administrative assistance to convert approximately 200 electrically heated units from baseboard electric heating to electric thermal storage heating. This is expected to transfer electrical demand from peak to off peak per unit converted. The conversion will reduce the electric bill of the social housing authority or customer. Assuming that carbon fuel, coal, is burnt in peaking generating stations, there will be a reduction in greenhouse gas production. This initiative has been very successful because TOU rates are available. It is expected that we will be able to install the number of storage units for which we budgeted.

**Measure(s):** Add storage heat to existing heating system

<i>Base case technology:</i>	Baseboard heating system		
<i>Efficient technology:</i>	Storage heat system		
<i>Number of participants or units delivered:</i>	200		
<i>Measure life (years):</i>	18		

B. **TRC Results:**

<i>TRC Benefits (\$):</i>		\$	1,158,312.89
<i>TRC Costs (\$):</i>			
	<i>Utility program cost (less incentives):</i>	\$	846,200.00
	<i>Participant cost:</i>	\$	-
	<i>Total TRC costs:</i>	\$	846,200.00
<i>Net TRC (in year CDN \$):</i>		\$	312,112.89
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>			1.37

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	Summer	
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	Winter	
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):	6,348,722	6,678.9
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):	
Energy savngs (kWh):	<i>lifecycle</i>

**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. **Program Costs\*:**

<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	600,000.00
	<i>Incremental O&amp;M:</i>	246,200.00
	<i>Incentive:</i>	
	<i>Total:</i>	\$846,200.00
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	
	<i>Incremental O&amp;M:</i>	-
	<i>Total:</i>	\$0.00
<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	-
	<i>Incremental O&amp;M:</i>	-
	<i>Total:</i>	-
		\$846,200.00

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E. **Comments:**

The benefits have been calculated using the Assumptions and Measures List which indicates for number 58 Electric Storage Furnace a savings of 1810 kWh and no summer on peak savings.

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Public Education

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

This initiative includes participation in trade shows, home shows and advertisement through various media to promote conservation and demand management. As such, it can be considered a cost to be allocated across the entire CDM portfolio. Its benefits are recognized in the other initiatives in the CDM portfolio. Its costs are related to marketing and advertising in the amount of \$55,248 spent to-date and a further \$49,030 budgeted for the balance of the program.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	promote electrical safety		
<i>Efficient technology:</i>	promote conservation and demand		
<i>Number of participants or units delivered:</i>			
<i>Measure life (years):</i>	3		

B. **TRC Results:**

<i>TRC Benefits (\$):</i>	\$	-
<i>TRC Costs (\$):</i>		
<i>Utility program cost (less incentives):</i>	\$	104,278.00
<i>Participant cost:</i>	\$	-
<i>Total TRC costs:</i>	\$	104,278.00
<i>Net TRC (in year CDN \$):</i>	-\$	104,278.00
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$	-

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	Summer	
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	Winter	
	<i>lifecycle</i>	<i>in year</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 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):	
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D. **Program Costs\*:**

<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	
	<i>Incremental O&amp;M:</i>	104,278.00
	<i>Incentive:</i>	
	<i>Total:</i>	\$104,278.00
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	
	<i>Incremental O&amp;M:</i>	-
	<i>Total:</i>	\$0.00
<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	-
	<i>Incremental O&amp;M:</i>	-
	<i>Total:</i>	-
		\$104,278.00

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E. **Comments:**

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Radio signal to control appliances

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

The LDC has developed a radio signal system that may be used by customers to control appliances and shift discretionary use of electricity to off peak times. The signals provided by the LDC at no cost will accommodate the automatic disabling of appliances connected to the in-home controller and the enabling of the appliance at a time which is off peak. Appliances such as electric water heaters, dishwashers, clothes washers, electric dryers, have their electricity consumption shifted to off peak times. The controller has a manual override button to permit the customer to use the appliance during a control period. This initiative applies to all residential customers, however, some customers will receive more benefit than others, depending on their consumption patterns. Assuming that carbon fuel, ie coal, is burnt in peaking generating stations, there will be a reduction in greenhouse gas production as a result of this initiative. This initiative has been successful because of the availability of TOU rates. Based on our experience to-date, we believe that 65 participants over the life of the 3 year program is realistic, which is dramatically less than the 4500 participants c

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	Appliance consumption not controlled		
<i>Efficient technology:</i>	Appliance consumption controlled		
<i>Number of participants or units delive</i>	65		
<i>Measure life (years):</i>	12		

B. **TRC Results:**

<i>TRC Benefits (\$):</i>	\$	291,166.84
<i>TRC Costs (\$):</i>		
<i>Utility program cost (less incentives):</i>	\$	97,500.00
<i>Participant cost:</i>	\$	-
<i>Total TRC costs:</i>	\$	97,500.00
<i>Net TRC (in year CDN \$):</i>	\$	193,666.84
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$	2.99

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	<i>Summer</i>	
	<i>Winter</i>	
	<i>lifecycle</i>	<i>in year</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>	50.5
<i>Energy shifted On-peak to Mid-peak (kWh):</i>	153270
<i>Energy shifted On-peak to Off-peak (kWh):</i>	13260
<i>Energy shifted Mid-peak to Off-peak (kWh):</i>	11375

**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:**

<i>Peak load savings (kW):</i>		
	<i>lifecycle</i>	<i>in year</i>
<i>Energy savngs (kWh):</i>		

**Distributed Generation and Load Displacement Programs:**

<i>Amount of DG installed (kW):</i>	
<i>Energy generated (kWh):</i>	
<i>Peak energy generated (kWh):</i>	

Fuel type:

**Other Programs (specify):**

Metric (specify):

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**D. Program Costs\*:**

<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	38,870.00
	<i>Incremental O&amp;M:</i>	38,350.00
	<i>Incentive:</i>	
	<i>Total:</i>	\$77,220.00

<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	
	<i>Incremental O&amp;M:</i>	20,280.00
	<i>Total:</i>	\$20,280.00

<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	-
	<i>Incremental O&amp;M:</i>	-
	<i>Total:</i>	\$97,500.00

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**E. Comments:**

The benefits of this program used the TRC Assumptions and Measures List for the control of the water heater. These measures were then extrapolated to the control of appliances based on the Base Annual Energy Usage of the water heater versus the appliances. The benefits includes kWh savings and on peak summer demand savings.

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Infra-Red Camera

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

The LDC has purchased an infra-red camera. In co-operation with Peterborough Green Up, building audits were to have been performed at the customer's request. Peterborough Green Up was to conduct its audit with the intent of reducing consumption of electricity and other environmental considerations. The building owner could then take remedial measures on the building. This service was to have been available to all electricity customers, however, Peterborough Green Up has indicated that it does not have the resources to be able to continue with this initiative. The camera will, however, be used to scan the electric distribution lines within the LDC to detect places where conductors and transformers are abnormally hot and thereby reduce losses in the electric distribution system. Although faults have been located and corrected, these faults have been found in the past by hiring a contractor to perform the distribution loss evaluation. Therefore, no net new kWh or kW savings have been attributed to this initiative. This initiative has been unsuccessful and is now discontinued.

Measure(s):	Detect building heat loss	Detect line loss	Measure 3 (if applicable)
Base case technology:	n/a	contractor	
Efficient technology:	infra-red camera	infra-red camera	
Number of participants or units delivered:	0	12	
Measure life (years):	n/a	10	

B. **TRC Results:**

TRC Benefits (\$):	\$	-
TRC Costs (\$):		
Utility program cost (less incentives):	\$	82,985.13
Participant cost:	\$	-
Total TRC costs:	\$	82,985.13
Net TRC (in year CDN \$):	-\$	82,985.13
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$	-

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	<i>Summer</i>		-
	<i>Winter</i>		-
		<i>lifecycle</i>	<i>in year</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:**

<i>Peak load savings (kW):</i>		0	no net savings because we
	<i>lifecycle</i>	<i>in year</i>	would be hiring a vendor if we
<i>Energy savngs (kWh):</i>	0	0	did not have the camera

**Distributed Generation and Load Displacement Programs:**

<i>Amount of DG installed (kW):</i>	
<i>Energy generated (kWh):</i>	
<i>Peak energy generated (kWh):</i>	

Fuel type:

**Other Programs (specify):**

Metric (specify):

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D. **Program Costs\*:**

<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	63,720.00
	<i>Incremental O&amp;M:</i>	18,665.13
	<i>Incentive:</i>	-
	<i>Total:</i>	\$82,385.13

<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	
	<i>Incremental O&amp;M:</i>	600.00
	<i>Total:</i>	\$600.00

<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	
	<i>Incremental O&amp;M:</i>	
	<i>Total:</i>	-
		\$82,985.13

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E. **Comments:**

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Load Monitor

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

The LDC provides the loan of load monitors to customers who use them to measure how much energy is being used by various appliances and devices within their home or business. Customers are asked to complete a form providing information on which appliance(s) they monitored and what action they expect to take to reduce consumption or demand. Experience to-date is that customers who take advantage of the monitor are residential. Customers report that they will use the offending appliance more carefully by turning it off/down or that they intend to replace the appliance. Based on experience to-date, we estimate that the number of participants is likely to be 724 over the 3 year life of the program rather than the 1000 participants per year originally projected. This initiative will provide an energy conservation benefit but the financial benefit to the consumer is offset by the incremental cost of the energy-efficient appliance.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	n/a		
<i>Efficient technology:</i>	Load Monitor		
<i>Number of participants or units delivered:</i>	724		
<i>Measure life (years):</i>	15		

B. **TRC Results:**

<i>TRC Benefits (\$):</i>	\$	117,304.14
<i>TRC Costs (\$):</i>		
<i>Utility program cost (less incentives):</i>	\$	42,746.76
<i>Participant cost:</i>	\$	73,692.00
<i>Total TRC costs:</i>	\$	116,438.76
<i>Net TRC (in year CDN \$):</i>	\$	865.38
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$	1.01

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

**Conservation Programs:**

Demand savings (kW):	Summer		
	Winter		
		<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):		3,316,140	16,800
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 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:*

32,500.36

*Incremental O&M:*

10,246.40

*Incentive:*

*Total:*

\$42,746.76

*Utility indirect costs (\$):*

*Incremental capital:*

-

*Incremental O&M:*

-

*Total:*

\$0.00

*Participant costs (\$):*

*Incremental equipment:*

73,692.00

*Incremental O&M:*

*Total:*

\$73,692.00

\$116,438.76

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**E. Comments:**

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

# Appendix B - Discussion of the Program

## Peterborough Distribution Inc.

A. **Name of the Program:** Cool Shops Program

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

The original proposal was to develop an EnerGuide for Small Business, however, once the Cool Shops program became available, it was more efficient to join with other cities in this joint service offering. Cool Shops tried a different approach to engaging the small commercial sector in order to make it easier for businesses to participate and undergo energy efficient changes. Throughout program implementation in Peterborough, Street Teams visited all small commercial areas within the City as well as the outlying communities of Norwood and Lakefield. The program was extremely well received in Norwood and Lakefield due to the lack of programs and attention directed towards them in the past. The Street Teams provided assistance to businesses who exchanged inefficient light fixtures or bulbs to energy efficient versions. This initiative was successful because it provides business owners with the assistance and encouragement to invest in energy conservation.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	inefficient light fixtures/bulbs		
<i>Efficient technology:</i>	efficient light fixtures/bulbs		
<i>Number of participants or units delivered:</i>	794		
<i>Measure life (years):</i>	5		

B. **TRC Results:**

<i>TRC Benefits (\$):</i>	\$	1,085,049.13
<i>TRC Costs (\$):</i>		
<i>Utility program cost (less incentives):</i>	\$	50,000.00
<i>Participant cost:</i>	\$	621,049.42
<i>Total TRC costs:</i>	\$	671,049.42
<i>Net TRC (in year CDN \$):</i>	\$	413,999.71
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$	1.62

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

**Conservation Programs:**

Demand savings (kW):	Summer	
	Winter	
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):	11,376,693	28,747
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 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):*

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**D. Program Costs\*:**

*Utility direct costs (\$):*

*Incremental capital:*

*Incremental O&M:*

50,000.00

*Incentive:*

*Total:*

\$50,000.00

*Utility indirect costs (\$):*

*Incremental capital:*

-

*Incremental O&M:*

*Total:*

\$0.00

*Participant costs (\$):*

*Incremental equipment:*

621,049.42

*Incremental O&M:*

*Total:*

\$621,049.42

\$671,049.42

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**E. Comments:**

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