



CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

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March 31, 2006

Ontario Energy Board
2300 Yonge Street
P.O. Box 2319
Toronto, ON M4P 1E4

Attn: Board Secretary

**Re: Cambridge & North Dumfries Hydro Inc. – RP-2004-0203/EB-2005-0199
Conservation and Demand Management Annual Report**

Enclosed please find five (5) hard copies and two (2) electronic copies of Cambridge & North Dumfries Hydro Inc.'s 2005 Conservation and Demand Management Annual Report.

The electronic copies are provided on the enclosed CD-ROM. One copy includes the report in MS-Word format with the Appendices in MS-Excel format while the other copy includes the entire report in Adobe Acrobat (PDF) format.

Yours truly,

CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.

A handwritten signature in dark ink, appearing to read "John Grotheer", is written over a faint, light blue watermark of the Energy+ logo.

John Grotheer,
President and CEO

Report on
2005 Conservation & Demand Management Program
Cambridge and North Dumfries Hydro Inc.
RP-2004-0203/EB-2005-0199

Submitted to
Board Secretary
Ontario Energy Board

March 31, 2006

John Grotheer
President and CEO
Cambridge and North Dumfries Hydro Inc.



Prepared by:

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Director, Customer Information Services & Conservation

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CDM Program Coordinator

This report provides an overview and evaluation of the Conservation and Demand Management programs undertaken by Cambridge and North Dumfries Hydro Inc. in 2005.

I. INTRODUCTION

Cambridge & North Dumfries Hydro Inc. is a local distribution company that serves over 47,000 customers in the City of Cambridge and Township of North Dumfries. Our Vision is to be a leader in innovation and the preferred choice in the delivery of energy.

On November 30, 2004, an application was filed with the Ontario Energy Board (the Board) for an Interim Order pre-approving a Conservation and Demand Management (CDM) Plan. On December 23, 2004 the Board issued an Interim Order approving Cambridge and North Dumfries Hydro's application. On January 12, 2005 Cambridge and North Dumfries Hydro Inc. submitted an application to the Board for an Order approving their CDM Plan. The Board assigned File No. RP-2004-0203 / EB-2005-0199 to the application.

The elements of Cambridge and North Dumfries Hydro's CDM Plan include: distribution system efficiency improvements, utility building energy usage assessments, a traffic and street light replacement program, a 'smart' meter pilot, an awareness and energy audit initiative for small business, programs targeted to the residential segment (such as education, home inspections, appliance buy-backs and funding for various energy efficient home products) and staff training and development. The total budget for the CDM Plan was consistent with the third installment of incremental Market Adjusted Revenue Requirement (MARR) in the amount of \$2,161,652.

On March 18, 2005 the Board granted approval of the CDM Plan in the amount of \$2,161,652, and concluded the CDM Plan satisfied the Minister of Energy's condition of a financial commitment to reinvest the equivalent of one year incremental MARR in conservation and demand management.

In 2005, Cambridge & North Dumfries Hydro Inc. began to implement programs targeted to customers in the Residential Class, Small Commercial Class, Mid/Large Commercial Industrial Class and our Government and Institutional Customer Base. In addition, programs were implemented to improve the efficiency of the company's own assets. Finally, numerous programs were introduced to educate consumers and promote the development of a Culture of Conservation across all customer classes.

Cambridge & North Dumfries Hydro Inc. has introduced the EarthWise™ brand to our community. The EarthWise™ brand is used on all of our Conservation and Demand Management programs, initiatives and advertising, and has become recognized as our "calling card" for programs related to conservation and energy efficiency.

II. EVALUATION OF THE CDM PLAN

The following Programs are reported on herein:

1. Total Customer Base

- 1.1 Compact Fluorescent Light Bulb Giveaways
- 1.2 Customer Education
- 1.3 Switch to Cold Campaign

2. Residential Customer Base

- 2.1 Heat Bank
- 2.2 Home Energy Evaluations
- 2.3 Incentive Program
- 2.4 Smart Thermostats
- 2.5 Festive Light Exchange

3. Small Commercial Customer Base

- 3.1 On site Energy Audits

4. Mid-Large Commercial/Industrial Customer Base

- 4.1 Interval (Smart) Meters, Web Presentment and Consulting

5. Government/Institutional Customer Base

- 5.1 Street Light Retrofit
- 5.2 LED Traffic Light Conversion

6. Local Distribution Company Asset Base

- 6.1 Lighting Retrofit – Corporate Offices

All Programs undertaken in 2005 resulted in overall positive Total Resource Cost values.

A summary of these programs is shown in Appendix A.

6.2 III. DISCUSSION OF THE PROGRAMS

1. Total Customer Base

1.1 Compact Fluorescent Light Bulb (CFL) Giveaways

Cambridge & North Dumfries Hydro Inc. distributed 16,677 13/15 watt and 23 watt compact fluorescent light bulbs in 2005 through a number of initiatives and promotions throughout the year. These include:

Food Bank: CFLs and energy savings tips were provided to Food Bank recipients as a means to help people conserve energy and lower their utility bills.

Golf Tournament: CFLs were distributed along with energy savings tips to participants of a charity golf tournament to raise awareness and promote conservation.

Energy Kits: Energy kits consisting of CFLs literature and energy savings tips were distributed at environmental forums, service clubs and to employees.

1.2 Customer Education

Cambridge & North Dumfries Hydro Inc. embarked on programs designed to raise awareness and promote a Culture of Conservation. These programs included newspaper and magazine advertising, corporate web site upgrades including a dedicated Conservation section and Energy Calculator and promotional graphics on one of the company's cube vans.

Advertising in the Cambridge Times reaches an audience of 39,480.

After implementing the Energy Conservation upgrades to the Web Site in May, the average number of unique visitors rose from 1077 to 1474, a 2.55% increase. Average number of "hits" per month rose from 55,445 to 77,394, a 2.29% increase.

1.3 Switch to Cold Campaign

Cambridge & North Dumfries Hydro Inc. also participated in the Canadian Energy Efficiency Alliance's "Switch to Cold" campaign in which 48,000 - \$1 off coupons were distributed. The expiry date of these coupons has not yet been reached, but it is assumed there will be redemption rate of between 3 and 5 per-cent.

2. Residential Customer Base

2.1 Heat Bank

Cambridge & North Dumfries Hydro Inc. provided funds to facilitate home energy audits for recipients of heating assistance funds with the belief that it would help these people conserve energy and lower their utility bills.

2.2 Home Energy Evaluations

Funding was provided to the Residential Energy Efficiency Project (REEP) of Waterloo Region to subsidize home energy audits including an assessment of major electrical appliances and 2 free compact fluorescent bulbs.

This program did not yield significant energy savings in its first year compared to the costs, however, a significant portion of this program is geared towards customer education, awareness and the creation of a “conservation culture”.

2.3 Incentive Program

Cambridge & North Dumfries Hydro Inc. provided incentives of \$1,500 each for the installation of a geothermal ground source heating/cooling system or solar water heating system.

In 2005, 2 ground source heating systems and 1 solar water heating system were installed by customers and the grants were paid.

2.4 Smart Thermostats

Funding was provided for programmable “smart” thermostats to be installed in electrically heated social housing units. These devices incorporate motion sensor technology to activate the set back feature.

2.5 Festive Light Exchange

Cambridge & North Dumfries Hydro Inc. undertook a Festive Light Exchange whereby customers could exchange up to 5 strings of old, incandescent festive lights for up to 5 strings of new, energy efficient lights. 15,000 strings of lights were exchanged at this event.

3. Small Commercial Customer Base

3.1 On-Site Energy Audits

In 2005, an Energy Audit process was developed by in-house staff. An advertisement was placed in the Chamber of Commerce magazine offering this service to small commercial customers. Although circulated to 1,600 businesses, we did not receive any calls or requests for this service.

4. Mid-Large Scale Commercial/Industrial Base

4.1 Interval (Smart) Meters, Web Presentment and Consulting

An investment of approximately \$30,200 for new meters and ancillary equipment was made so that all customers with demands of 200 kW and above would have Interval Meters.

All customers with demands of 200 kW and above were provided with access to a web presentment product that allows the customer to log in and review their energy consumption patterns.

50 selected customers were provided with 18 months of free services by a professional consulting firm to assist them in managing their energy use and looking for opportunities to reduce their demand, consumption and costs.

This program began in late December, 2005 and, as such, there is no meaningful energy savings data available.

5. Government / Institutional Base

5.1 Streetlight Retrofit

In 2005, Cambridge & North Dumfries Hydro Inc. replaced 770 old mercury vapour (MV) streetlights with newer, more energy efficient high pressure sodium (HPS) lights.

- 216 – 100 watt HPS replaced 175 watt MV
- 499 – 150 watt HPS replaced 250 watt MV
- 55 - 250 watt HPS replaced 400 watt MV

5.2 LED Traffic Light Conversions

Cambridge & North Dumfries Hydro Inc.'s CDM Plan includes funds to subsidize the conversion of older traffic lights to new, energy efficient LED systems. No funds were dispersed to the traffic authorities in 2005. It is expected that this work will commence in 2006.

Approximately \$60 was spent in 2005 on preliminary planning work for this project.

6. Local Distribution Company Asset Base

6.1 Lighting Retrofits – Corporate Offices

Lighting in the Cambridge & North Dumfries Hydro Inc. offices were converted to more energy efficient lighting, and motion sensors were installed in selected locations.

IV. LESSONS LEARNED

The following summarizes the lessons learned in 2005 as a result of Conservation and Demand Management Programs undertaken:

- Advertising and the development of a Conservation Culture are difficult to quantify in terms of energy savings. Both the direct advertising and the indirect benefits of program promotions likely have raised awareness and resulted in conservation.
- Work needs to be done to track and quantify energy savings that result from professional audits and the recommendations that come from those audits. Smart Meters may enable measurement of improvements resulting from efficiency upgrades and lifestyle changes in the future.
- The initial implementation of Home Energy Audits in 2005 has identified additional requirements for improvement in reporting by the third-parties executing the program. These improvements will help better align measures to OEB reporting requirements.
- Programs that were planned and executed in-house yielded the highest net TRC values (Festive Light Exchange and CFL Bulb Giveaways).
- Small Commercial and Mid-Large Commercial/Industrial Programs have yet to yield results as these programs have just recently got underway.

V. CONCLUSION

The following table summarizes total spending on Cambridge & North Dumfries Hydro Inc.'s Conservation and Demand Management Program to the end of 2005:

<u>CAMBRIDGE AND NORTH DUMFRIES HYDRO INC.</u>					
<u>Conservation and Demand Management Reporting Summary</u>					
<u>December 31, 2005</u>					
<u>RP-2004-0203 / EB-2005-0199</u>					
<u>Program Name</u>	<u>Program Status</u>	<u>Rate Class Targeted</u>		<u>Total Approved Budget</u>	<u>Expenditures "Life-to-Date"</u>
Program 1 Consumer Education and Development Culture					
	Active	All	Capital	\$ -	\$ -
			Operating	\$ 285,000	\$ 75,268
Program 2 Conservation and Demand Management Initiatives					
	Active	Residential	Capital	\$ -	\$ -
			Operating	\$ 990,000	\$ 305,966
Program 3 Small Business Customer Base					
	Active	GS < 50kW	Capital	\$ -	\$ -
			Operating	\$ 100,000	\$ 1,221
Program 4 Mid to Large Commercial/Industrial Customer Base					
	Active	GS > 50kW	Capital	\$ 70,000	\$ 30,194
			Operating	\$ 130,000	\$ 101,209
Program 5 Government/Institutional Customer Base					
	Active	Other	Capital	\$ -	\$ -
			Operating	\$ 400,000	\$ 248,501
Program 6 Local Distribution Company - Asset Base					
	Active	Other	Capital	\$ 186,652	\$ 43,318
			Operating	\$ -	\$ -
				Capital	\$ 256,652
				Operating	\$ 1,905,000
				Total	\$ 2,161,652
					\$ 805,677

In the first year of the program, Cambridge & North Dumfries Hydro Inc. has spent approximately 37% of the total program costs.

VI. APPENDICES

Appendix “A” – Evaluation of the CDM Plan

Appendix “B” – Discussion of Programs

Appendix A - Evaluation of the CDM Plan

	Total Customer Base	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Other 1	Other 2	Other 3
<i>Net TRC value (\$):</i>	411581.71	252068.13		9895.26			17277.96			
<i>Benefit to cost ratio:</i>	7.19	0.87		-0.96			-0.39			
<i>Number of participants or units delivered:</i>	19117	15758		770			345			
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	7547888	9452023		7785536			666965			
<i>Total in year kWh saved (kWh):</i>	2009	2035		2030			2030			
<i>Total peak demand saved (kW):</i>	37	32		73			21			
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.46	0.58		47.4			0.0406			
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.0115	0.00995		0.227			0.00652			
<i>Gross in year C&DM expenditures (\$):***</i>	71664.63	307501.89	1226.72	249747.87	132061.75		43534.92			
<i>Expenditures per kWh saved (\$/kWh)*:</i>	0.0095	0.0325		0.0321			0.0653			
<i>Expenditures per kW saved (\$/kW)**:</i>	48.88	62.13		17.05			163.67			
<i>Utility discount rate (%):</i>	7.5									

*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.

***Includes Indirect Costs of Programs and may not match table shown in Report Conclusions. Some of these costs were originally allocated to Program 1.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Total Customer Base - Program 1

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

This program includes: Compact Fluorescent Light Bulb (CFL) Giveaways, Advertising and Customer Education and the "Switch to Cold" Coupon Campaign. See Section III of the report body (1.1-1.3) for further information.

Measure(s):

	15W/13W CFL Giveaway	23W CFL Giveaway	Switch to the Cold Campaign
<i>Base case technology:</i>	60W Incandescent bulb	100W Incandescent Bulb	Average Stock Washing Detergent
<i>Efficient technology:</i>	15/13W	23W CFL	Cold Water Washing Detergent
<i>Number of participants or units delivered:</i>	16044	633	2440
<i>Measure life (years):</i>	4	4	1

B. **TRC Results:**

<i>TRC Benefits (\$):</i>		\$	361,312.58
<i>TRC Costs (\$):</i>			
	<i>Utility program cost (less incentives):</i>	\$	1,069.13
	<i>Participant cost:</i>	\$	49,200.00
	<i>Total TRC costs:</i>	\$	50,269.13
<i>Net TRC (in year CDN \$):</i>		\$	411,581.71
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>		\$	7.19

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

Conservation Programs:

<i>Demand savings (kW):</i>	<i>Summer</i>	37
	<i>Winter</i>	390
<i>Energy saved (kWh):</i>	<i>lifecycle</i>	7547888
<i>Other resources saved :</i>	<i>in year</i>	2009

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 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:	<input type="text"/>
	Incremental O&M:	\$ <input type="text" value="1,069.13"/>
	Incentive:	\$ <input type="text" value="70,237.84"/>
	Total:	\$ <input type="text" value="71,306.97"/>

Utility indirect costs (\$):	Incremental capital:	<input type="text"/>
	Incremental O&M:	<input type="text" value="357.66"/>

	<i>Total:</i>	357.66
<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	49200
	<i>Incremental O&M:</i>	
	<i>Total:</i>	49200

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

*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:** Residential - Program 2

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

This program includes: Heat Bank Energy Audits, Home Energy Evaluations, Incentives for Ground Source Heat Pumps and Solar Water Heaters, Smart Thermostats and Festive Light Exchange. See Section III of the report body (2.1-2.5) for further information.

Measure(s):	Heat Bank - Pilot WWOW - Water Heating	Heat Bank - Pilot WWOW - Thermal Envelope Improvements	Smart Thermostats	REEP Initiative - CFL	REEP Initiative - Solar Water Heating	REEP Initiative - Geothermal Heat Pump	Festive Light Exchange
Base case technology:	Average Existing Stock	Average Existing Stock	Average Existing Stock	60W Incandescent bulb	Current Standard Electric Water Heating	Elec. Res. Heating, DX Cooling	5W Christmas Lights
Efficient technology:	Efficient Showerhead, Faucet Aerator	Caulking Products	Programmable Thermostat	15 W CFL	Solar Assisted Water Heating	Ground Source Heat Pump	LED Christmas Lights
Number of participants or units delivered:	4	2	83	666	1	2	15000
Measure life (years):	12	25	18	4	18	20	30

B. **TRC Results:**

TRC Benefits (\$):	\$ 117,549.35
TRC Costs (\$):	
Utility program cost (less incentives):	\$ 72,918.78
Participant cost:	\$ 61,600.00
Total TRC costs:	\$ 134,518.78
Net TRC (in year CDN \$):	\$ 252,068.13
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	0.87

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

Conservation Programs:

Demand savings (kW):	Summer	32
	Winter	168
Energy saved (kWh):	lifecycle	9452023
	in year	2035
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. Program Costs*:

Utility direct costs (\$):

Incremental capital:

Incremental O&M:

Incentive:

Total:

\$ 151,361.18

\$ 154,605.00

\$ 305,966.18

Utility indirect costs (\$):

Incremental capital:

Incremental O&M:

Total:

1535.71

1535.71

Participant costs (\$):

Incremental equipment:

Incremental O&M:

Total:

61600

61600

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

*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:** C & DM Small Business - Program 3

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

This program includes: On Site Energy Audits for Small Commercial establishments. See Section III of the report body (3.1) for further details.

Measure(s):

	The Spectrum		
Base case technology:			
Efficient technology:			
Number of participants or units delivered:	1600		
Measure life (years):			

B. **TRC Results:**

TRC Benefits (\$):			
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 beginning 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:	<input type="text"/>
	Incremental O&M:	<input type="text"/>
	Incentive:	\$ 1,220.60
	Total:	\$ 1,220.60
Utility indirect costs (\$):	Incremental capital:	<input type="text"/>
	Incremental O&M:	6.12

Total: 6.12

Participant costs (\$):

Incremental equipment:

Incremental O&M:

Total:

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

*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:** Industrial - Program 4

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

This program includes: Installation of new Interval (Smart) Meters, provision of Web Presentment Tools and free consulting services. See Section III of the report body (4.1) for further details.

Measure(s):

	Smart Meters		
<i>Base case technology:</i>			
<i>Efficient technology:</i>			
<i>Number of participants or units delivered:</i>			
<i>Measure life (years):</i>			

B. **TRC Results:**

<i>TRC Benefits (\$):</i>	
<i>TRC Costs (\$):</i>	
<i>Utility program cost (less incentives):</i>	
<i>Participant cost:</i>	
<i>Total TRC costs:</i>	
<i>Net TRC (in year CDN \$):</i>	
<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>			
	<i>Summer</i>		
	<i>Winter</i>		
	<i>lifecycle</i>		<i>in year</i>
<i>Energy saved (kWh):</i>			
<i>Other resources saved :</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):

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:	\$ 101,209.07
	Incentive:	\$ 30,193.54
	Total:	\$ 131,402.61
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	659.14

Total: 659.14

Participant costs (\$):

Incremental equipment:

Incremental O&M:

Total:

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

*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:** Government/Institutional - Program 5

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

This program includes: Street Light Retrofits and LED Traffic Light Conversions. See Section III of the report body (5.1-5.2) for further details.

Measure(s):

	Replace MV 175 with HPS 100	Replace MV 250 with HPS 150	Replace MV 400 with HPS 250
Base case technology:	Mercury Vapour 175 bulb	Mercury Vapour 250	Mercury Vapour 400
Efficient technology:	High Pressure Sodium 100 bulb	High Pressure Sodium 150	High Pressure Sodium 250
Number of participants or units delivered:	216	499	55
Measure life (years):	25	25	25

B. **TRC Results:**

TRC Benefits (\$):	-\$	238,546.87
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 248,442.13
	Participant cost:	\$ -
	Total TRC costs:	\$ 248,442.13
Net TRC (in year CDN \$):	\$	9,895.26
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	-\$	0.96

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

Conservation Programs:

Demand savings (kW):	Summer	73
	Winter	948
Energy saved (kWh):	lifecycle	7785536
	in year	2030
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 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:	\$ 59.24
	Incentive:	\$ 248,442.13
	Total:	\$ 248,501.37
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	1246.5
	Total:	1246.5
Participant costs (\$):	Incremental equipment:	
	Incremental O&M:	
	Total:	

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

*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:** LDC System - Program 6

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

This program includes: Corporate Offices Lighting Retrofits. See Section III of the report body (6.1) for further details.

Measure(s):

	3W LED Exit Sign	175W Metal Halide Lamp	T8 32W Bulbs	T5 HO Lamps	Occupancy Sensor Control
Base case technology:	15W Incandescent Exit Sign	250MV Bulb	T12 75W Bulb	400W Metal Halide	On/Off Switch
Efficient technology:	3W LED Exit Sign	175W Metal Halide Lamp	T8 32W Bulbs	T5 HO Lamps	Occupancy Sensor Control
Number of participants or units delivered:	18	7	303	7	10
Measure life (years):	25	4	5	5	10

B. TRC Results:

TRC Benefits (\$):		-\$	11,122.04
TRC Costs (\$):			
	Utility program cost (less incentives):	\$	-
	Participant cost:	\$	28,400.00
	Total TRC costs:	\$	28,400.00
Net TRC (in year CDN \$):		\$	17,277.96
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		-\$	0.39

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

Conservation Programs:

Demand savings (kW):	Summer	21
	Winter	23
Energy saved (kWh):	lifecycle	666965
	in year	2030
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 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:	<input type="text"/>
	Incremental O&M:	\$ <input type="text"/> 3,710.00
	Incentive:	\$ <input type="text"/> 39,607.50
	Total:	\$ <input type="text"/> 43,317.50

Utility indirect costs (\$):	Incremental capital:	<input type="text"/>
	Incremental O&M:	<input type="text"/> 217.42
	Total:	<input type="text"/> 217.42

Participant costs (\$):	Incremental equipment:	<input type="text"/> 28400
	Incremental O&M:	<input type="text"/>
	Total:	<input type="text"/> 28400

E. Comments:

Utility Indirect Cost - Incremental O&M, has been pro-rated as a percent of the Conservation & Demand Management (C & DM) Program Budget. This value was then applied against the total indirect cost of the C & DM Program (\$4041.34.)

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