



**Conservation and Demand Side Management  
2008 Annual Report**

**Ontario Energy Board File No. RP 2004-0203  
Docket Number RP-2004-0203 / EB-2005-0214**

**March 31, 2009**



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## **BACKGROUND**

On March 15<sup>th</sup>, 2005, Clinton Power Corporation was granted final approval for its Conservation and Demand Management (“CDM”) Plan as filed with the Ontario Energy Board (“Board”) under docket number RP-2004-0203 / EB-2004-0548. The Board’s decision indicated that annual reporting “should be done on a calendar year and should be filed with the Board no later than March 31<sup>st</sup> of the following year” and would be subject to public review.

On February 2<sup>nd</sup>, 2009 the Board issued “Requirements for Annual Reporting of Conservation and Demand Management (“CDM”) Initiatives” that explained more fully the requirements for the 2008 reporting year. This report has been prepared in accordance with those guidelines.



## **INTRODUCTION**

Clinton Power Corporation (“Clinton”) provides safe and efficient distribution of electricity to 1,630 customers in Clinton Ontario. Clinton is committed to customer’s service and sees that it can play a role in assisting customers use electricity wisely to help reduce distribution system costs, customer bills, the environment and health impacts associated with electricity generation.

Clinton’s conservation strategy was to provide conservation programs to all customer classes that encourages consumers to conserve energy in all aspects of life. The plan originally filed was composed of core programs and supplemental programs. The core programs was comprised of a customer education and water heater load management while the supplemental programs consisted of LED seasonal lighting upgrades to municipal seasonal lighting and LED traffic lighting retrofits.

Over the third Tranche funding period Clinton spent \$19,070 out of the \$23,978 that was approved for the CDM Plan budget.



## EVALUATION

The initial contemplated programs included customer education and water heater load control programs. These programs were stopped midstream based on environmental and market conditions. The water heater load control program was set aside due to the serious issues surrounding the potential Legionnaire’s Disease being associated with hot water heating at the time. And while an information based education program was also contemplated, it was decided that there was more value in providing energy conservation kits that included both incentives in the form of products as well as conservation information.

In addition, the LED seasonal lighting and LED traffic lighting retrofitting projects were also being considered as alternative programs based on their popularity and feasibility given Clinton’s limited resources. And while the LED traffic light retrofits had been proposed in connection with the 2006 Ministry of Transportation (MTO) planned revamping of two sets of lighting at two intersections in Clinton, the project was delayed due to budget constraints by the MTO.

Therefore Clinton’s CDM portfolio consisted of the following programs:

- Residential Conservation Kit
- Seasonal Lighting Display Upgrades

Given the funding granted to Clinton under the Third Tranche of Market Adjusted Revenue Requirement the results achieved are significant. A summary of Clintons CDM plan performance is illustrated in Table 1 below.

**Table 1 – Conservation Program Savings Summary**

Year	Annual Savings	Life Cycle Savings	Cost Per kWh	Peak Demand Savings	Cost Per kW
2006	247,284 kWh	3,135,430 kWh	0.0061 kWh	0.357 kW	\$ 53,491.19 kW

The accumulated annual savings of 247,284 kWh’s is equivalent to powering 17 homes for one year, and over the lifetime of the technology deployed, the savings of 3,135,430 kWh’s is equivalent to powering 217 homes for one year.

Please refer to Appendix A for the complete evaluation of Clinton’s CDM plan as outlined in the in the “Requirements for Annual Reporting of Conservation and Demand Management (“CDM”) Initiatives”.



## **DISCUSSION OF PROGRAMS**

The following programs were implemented throughout the Third Tranche funding period:

- Energy Conservation Kits - Distributed in 2006
- LED Seasonal Lighting Upgrades – Upgrades took place from 2006 to 2008

Please refer to Appendix B, Discussion of Programs for a complete description of the programs as outlined in the in the “Requirements for Annual Reporting of Conservation and Demand Management (“CDM”) Initiatives”.

### **Energy Conservation Kits**

The Energy Conservation Kit program focused on providing customers with both incentives as well as educational conservation material. The Energy Conservation Kits contained the following items:

- Energetic Lighting 15 Watt Compact Fluorescent Lamp
- Earth Showerhead-Shower Coach
- Flow Meter Bag
- Hot Temperature Card
- Package of Premium Quality Door & Window Adhesive V-Type Weather-strip
- Energy Saving Switch & Outlet Gaskets
- Energy Saving Tips Booklet

Clinton partnered with the Municipality of Central Huron on the project as the Energy Conservation Kits were promoting both electric and water conservation initiatives. In addition, the Municipality of Central Huron shared the costs of the project, covering approximately 25% of the overall kit costs. As conservation goes beyond electricity, the partnership with the Municipality laid the ground work for future partnership, in which both parties benefit through sharing costs, which in turn maximizes budgets and resources, while increases potential market penetration and program exposure.

In total, Clinton distributed 1,300 Energy Conservation Kits which equates to one kit per customer. The program had a net TRC of \$ 65,942, a Benefit to Cost Ratio of 5.05, realized annual energy savings of 205,790 kWh at a cost of \$0.0045 per kWh (which is far below the blended rate) and lifecycle savings of 2,305,550 kWh. Unfortunately the Energy Conservation Kits provide minimal peak demand reduction.



## LED Seasonal Lighting Upgrade – Pole Mounted and Tree Lighting

The Seasonal Lighting Upgrade consisted of retrofitting new pole mounted seasonal lighting fixtures and a mechanical seasonal tree with LED seasonal technologies. In addition, the lighting strings that the trees surrounding the library are fitted with were replaced with LED lighting technologies. The program further demonstrated Clinton’s leadership in conservation to customers as well as provided promotion of LED seasonal lighting technology. Clinton utilized cooperative students to retrofit the fixtures at a minimal cost thereby maximizing the budget for the lighting technologies.

In addition, Clinton partnered with the local Business Improvement Association (BIA) as they cover the annual costs of lighting the seasonal lights. The BIA shared in some of the costs of the project associated with the retrofitting component.

The new LED seasonal lighting has an expected lifespan of 20 years and provides an combined annual savings of 41,494 kWh’s and a lifecycle savings of 829,880 kWh’s but provide little peak demand savings. The pole mounted seasonal lighting retrofit and the tree lighting were evaluated separately as illustrated in Appendix B. Table 2 below summarizes the results of the two programs.

**Table 2 – LED Lighting Upgrade Program Summary**

<b>Measure</b>	<b>LED Retrofit</b>	<b>New LED Tree Lighting</b>
Annual Savings	18,870 kWh’s	22,524 kWh’s
Lifecycle Savings	379,400 kWh’s	450,480 kWh’s
Net TRC	\$ 12,628	\$ 13,303
Cost Per kWh Saved	\$ 0.0081 per kWh	\$ 0.0124 per kWh

Based on the figures presented in Table 2, the program’s success speaks for itself. In addition, the program illustrated the energy savings realized by the LED technology while delivering similar lighting results.



## Comments on Program Success

Clinton feels that the programs implemented have had a positive impact on customer education levels, uptake and engagement which Clinton continues to build upon. Table 3 summarizes the programs.

**Table 3 – Program Summary**

<b>Program</b>	<b>Success</b> (High, Medium, Low)	<b>Continue</b> (Yes / No)	<b>Notes</b>
Energy Conservation Kits	High	Yes	Energy Conservation Kit's provided the necessary educational material and incentives to encourage and empower customers to implement energy conservation measures.
LED Seasonal Light Upgrade	High	Yes	Program demonstrated Clinton's commitment to conservation and supported the new seasonal LED technology.





## **LESSONS LEARNED**

Several lessons were learned over the course Third Tranche CDM Program period. Some lessons that Clinton has learned from and has built upon in their delivery of the Ontario Power Authority (OPA) CDM programs include:

### **Alter CDM Course Based on Environment**

Clinton learned early on to alter its CDM Plan accordingly, based on the external environment. This was clearly demonstrated with the water heater load control program initially contemplated. Given the serious issues surrounding Legionnaire's Disease and its association with hot water heating, Clinton opted to bench the program due to anticipated poor customer uptake and potential major liabilities.

### **Meet the Demands**

With LED lighting uptake being as substantial as it was Clinton opted to retrofit and replace existing seasonal lighting with new LED seasonal technologies to demonstrate the energy saving capabilities and lighting quality. Unfortunately due to the increase in demand, the availability decreased, which delayed the retrofit project and caused it to span a two year period. Therefore the lessons learned include not to underestimate the demand while at the same time develop programs that address customer demand.

### **Partnering For Prosperity**

Clinton partnered with the Municipality of Central Huron to deliver electricity and water programs. This partnership stretched program budgets, increased program offerings and improved market penetration and program exposure. In addition, the partnership further developed the partnership between Clinton and the municipality as well as laid the ground work for future joint initiatives. Furthermore, Clinton Partnered with the local BIA as they had a direct stake in the seasonal lighting as they covered the annual costs for lighting the displays. Lesson learned include partner with local stake holders for to increase budgets and improve program exposure.

### **CDM and Relationship Development**

Utilizing the conservation programs to build and develop long term relationships with customers, stakeholders and partners increases program exposure and success rates. By embracing CDM Clinton has been able to build new relationships and increase the strength of existing relationships with customers. In addition, these relationships can be utilized to research and pilot new programs, thereby increasing program uptake and success.



## **CONCLUSION**

Although the programs implemented under Clinton's Third Tranche funding were limited due to the budget available, the funds were maximized and the results achieved were significant. The Energy Conservation Kit partnership demonstrated leadership in conservation not only by Clinton but also by the Municipality of Central Huron. In addition, the kits provided a great lead into the Ontario Power Authority's (OPA's) Every Kilowatt Counts Coupon program which increased customer uptake.

The LED Seasonal Lighting Upgrades further demonstrated Clinton's leadership in conservation to their stakeholders and developed a partnership with the local business through partnering with the local Business Improvement Association.

As a result of the lessons Clinton learned from not only their first hand experiences but also the lessons learned by other LDC's, Clinton has achieved great success in the delivery of the OPA Programs such as the Summer Sweepstakes, The Great Refrigerator Round Up and the most successful to date Power Savings Blitz Program.

The OPA programs Clinton continues to offer, through its affiliation with Erie Thames Powerlines and ERTH Corporation's suite of companies demonstrates that small LDC's can and do delivery successful conservation programs that assist their customers in reduce their energy consumption and costs.

## **DISCUSSION ON REMAINING BALANCE OF THIRD TRANCHE BUDGETS**

Although Clinton does have a balance of \$4,908 remaining from the Third Tranche budget, the funds will be used for LED traffic light upgrades at two intersections in Clinton as the MTO is reviving the project. LED traffic lighting uses approximately 80% less energy as compared to its dated counterpart the incandescent. In addition to reduced energy consumption LED's last approximately 10 times longer, thereby decreasing maintenance costs. When considering energy savings alone, the payback period for LED Traffic Retrofit Program is 6 years, but when the maintenance savings is incorporated the payback period is a mere 2.4 years.



## 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.

	Total for 2008	Residential	<sup>5</sup> Low Income	Commercial	Institutional	Industrial	Agricultural	LDC System	<sup>4</sup> Smart Meters	Seasonal Lighting Municipal Upgrade	Seasonal Lighting Upgrade
Net TRC value (\$):	\$ 91,875	\$ 65,943	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,628	\$ 13,303
Benefit to cost ratio:	4.10	5.05	0.00	0.00	0.00	0.00	0.00	0.00	-	3.66	2.54
Number of participants or units delivered:	1,447	1,300	-	-	-	-	-	-	-	52	95
Lifecycle (kWh) Savings:	3,135,430	2,305,550	-	-	-	-	-	-	-	379,400	450,480
Report Year Total kWh saved (kWh):	247,284	205,790	-	-	-	-	-	-	-	18,970	22,524
Total peak demand saved (kW):	0.357	0.067	-	-	-	-	-	-	-	0.250	0.040
Total kWh saved as a percentage of total kWh delivered (%):	0.84%	1.76%	-	-	-	-	-	-	-	-	-
Peak kW saved as a percentage of LDC peak kW load (%):	0.00550%	-	-	-	-	-	-	-	-	-	-
<sup>1</sup> Report Year Gross C&DM expenditures (\$):	\$ 19,070	\$ 10,435	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,054	\$ 5,580
<sup>2</sup> Expenditures per kWh saved (\$/kWh):	\$ 0.0061	\$ 0.0045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0081	\$ 0.0124
<sup>3</sup> Expenditures per kW saved (\$/kW):	\$ 53,491.19	\$ 156,914.74	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,217.92	\$ 139,507.50
Utility discount rate (%):	8%										

<sup>1</sup> Expenditures are reported on accrual basis.

<sup>2</sup> Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.

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

<sup>4</sup> 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.

<sup>5</sup> Includes totals from Low Income programs that fall under both commercial and residential.



## Appendix B - Discussion of the Program

**(complete this Appendix for each program)**

A. **Name of the Program:** Residential Conservation Kits

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

The intent of the program was to provide customers with the conservation incentives and information. The kit was included one (1) Energetic Lighting 15 watt Compact Fluorescent Lamp, one (1) Earth Showerhead-Shower Coach, one (1) Flow Meter Bag, one (1) Hot Temperature Card, one (1) Package of Premium Quality Door & Window Adhesive V-Type Weatherstrip, Energy Saving Switch & Outlet Gaskets and Energy Saving Tips Booklet. The cost of the kits was split with the Municipality of Central Huron with Clinton Power providign 75% of the costs and the Municipality covering the remaining 25% of the costs. This program was implemented in 2006.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	15 Watt CFL	Weather Stripping	
<i>Efficient technology:</i>	60 Watt Incandescent	Average Existing Stock	
<i>Number of participants or units delivered for reporting year:</i>	1300	1300	
<i>Measure life (years):</i>	4	25	
<i>Number of Participants or units delivered life to date</i>	1300	1300	

B. <b>TRC Results:</b>	Reporting Year		TRC Results:		
	<sup>1</sup> TRC Benefits (\$):	\$	82,227.60	\$	82,227.60
<sup>2</sup> TRC Costs (\$):					
	Utility program cost (excluding incentives):	\$	10,434.83	\$	10,434.83
	Incremental Measure Costs (Equipment Costs)	\$	5,850.00	\$	5,850.00
	<b>Total TRC costs:</b>	\$	16,284.83	\$	16,284.83
<b>Net TRC (in year CDN \$):</b>	\$	65,942.77	\$	65,942.77	
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$	5.05	\$	5.05	

C. <b>Results:</b> (one or more category may apply)		<b>Cumulative Results:</b>	
<b>Conservation Programs:</b>			
<i>Demand savings (kW):</i>	Summer	0.000	0.000
	Winter	0.067	0.067
	<i>lifecycle</i>	<i>in year</i>	
<i>Energy saved (kWh):</i>	2,305,550.00	205,790.00	
<i>Other resources saved :</i>			
Natural Gas (m3):			
<b>Demand Management Programs:</b>			
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):			





## Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Seasonal Lighting Upgrade

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

The program covered the cost of restringing the seasonal pole mounted fixtures with new LED lighting. The estimated life of the equipment is 20 years and it will provide an annual savings of 18,970 kWh and will save 379,400 kWh over the lifecycle of the technology. The program was implemented in 2006.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	10 watt Seasonal Lights		
Efficient technology:	0.2 Watt LED Seasonal Lights		
Number of participants or units delivered for reporting year:	52		
Measure life (years):	20		
Number of Participants or units delivered life to date	52		

	Reporting Year	TRC Results:
<b>B. TRC Results:</b>		
<sup>1</sup> TRC Benefits (\$):	\$ 17,367.76	\$ 17,367.76
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 3,054.48	\$ 3,054.48
Incremental Measure Costs (Equipment Costs)	\$ 1,684.80	\$ 1,684.80
Total TRC costs:	\$ 4,739.28	\$ 3,054.48
<b>Net TRC (in year CDN \$):</b>	<b>\$ 12,628.48</b>	<b>\$ 14,313.28</b>
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	<b>\$ 3.66</b>	<b>\$ 5.69</b>

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

**Conservation Programs:**

Demand savings (kW):	Summer	-	-
	Winter	0.25	0.25
	lifecycle	in year	
Energy saved (kWh):	379,400.00	18,970.00	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

**Demand Management Programs:**

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



**Demand Response Programs:**

Dispatchable load (kW):

Peak hours dispatched in year (hours):

**Power Factor Correction Programs:**

Amount of KVar installed (KVar):

Distribution system power factor at beginning of year (%):

Distribution system power factor at end of year (%):

**Line Loss Reduction Programs:**

Peak load savings (kW):

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):

<b>D. Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	Incremental capital:	\$ -	\$ -
	Incremental O&M:	\$ 3,054.48	\$ 3,054.48
	Incentive:	\$ -	\$ -
	Total:	\$ 3,054.48	\$ 3,054.48
Utility indirect costs (\$):	Incremental capital:	\$ -	\$ -
	Incremental O&M:	\$ -	\$ -
	Incentive:	\$ -	\$ -
	Total:	\$ -	\$ -

**E. Assumptions & Comments:**

<sup>1</sup> 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.

<sup>2</sup> 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:** Seasonal Lighting Upgrade

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

The program covered the cost of new LED seasonal lights for a large mechanical Christmas Tree new lights for a variety of trees surrounding the library. The estimated life of the equipment is 20 years and it will provide an annual reduction of 22,524 kWh and a savings of 450,480 kWh over the lifecycle of the technology. The program was implemented in 2006.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	10 watt Seasonal Lights		
Efficient technology:	0.2 Watt LED Seasonal Lights		
Number of participants or units delivered for reporting year:	95		
Measure life (years):	20		
Number of Participants or units delivered life to date	95		

B. <b>TRC Results:</b>	<b>Reporting Year</b>		<b>TRC Results:</b>
<sup>1</sup> TRC Benefits (\$):	\$	21,961.80	\$ 21,961.80
<sup>2</sup> TRC Costs (\$):			
Utility program cost (excluding incentives):	\$	5,580.30	\$ 5,580.30
Incremental Measure Costs (Equipment Costs)	\$	3,078.00	\$ 3,078.00
Total TRC costs:	\$	8,658.30	\$ 5,580.30
<b>Net TRC (in year CDN \$):</b>	\$	13,303.50	\$ 16,381.50
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	\$	2.54	\$ 3.94

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

**Conservation Programs:**

Demand savings (kW):	Summer	-	-
	Winter	0.04	0.04
	<i>lifecycle</i>		<i>in year</i>
Energy saved (kWh):	450,480.00	22,524.00	
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

**Demand Management Programs:**

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





**Demand Response Programs:**

Dispatchable load (kW):

Peak hours dispatched in year (hours):

**Power Factor Correction Programs:**

Amount of KVar installed (KVar):

Distribution system power factor at beginning of year (%):

Distribution system power factor at end of year (%):

**Line Loss Reduction Programs:**

Peak load savings (kW):

Energy savings (kWh):

*lifecycle*

*in year*

**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:*

*Incremental O&M:*

*Incentive:*

*Total:*

Utility indirect costs (\$):

*Incremental capital:*

*Incremental O&M:*

*Total:*

**Reporting Year**

**Cumulative Life to Date**

\$	-	\$	-
\$	5,580.30	\$	5,580.30
\$	-	\$	-
\$	5,580.30	\$	5,580.30
\$	-	\$	-
\$	-	\$	-
\$	-	\$	-

**E. Assumptions & Comments:**

<sup>1</sup> 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.

<sup>2</sup> 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:

### 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 (\$)
Residential Conservation Kits	\$ 82,228	\$ 16,285	\$ 65,943	5.05	205,790	2,305,550	0.067	\$ 10,435
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				
<b>*Totals App. B - Residential</b>	<b>\$ 82,228</b>	<b>\$ 16,285</b>	<b>\$ 65,943</b>	<b>5.05</b>	<b>205,790</b>	<b>2,305,550</b>	<b>0.067</b>	<b>\$ 10,435</b>
<i>Residential Indirect Costs not attributable to any specific program</i>								
<b>Total Residential TRC Costs</b>		<b>\$ 16,285</b>						
<b>**Totals TRC - Residential</b>	<b>\$ 82,228</b>	<b>\$ 16,285</b>	<b>\$ 65,943</b>	<b>5.05</b>				

### 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 (\$)
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 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				
<b>*Totals App. B - Commercial</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$ -</b>
<i>Commercial Indirect Costs not attributable to any specific program</i>								
<b>Total TRC Costs</b>		<b>\$ -</b>						
<b>**Totals TRC - Commercial</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0.00</b>				



### 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		\$ 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 (\$)
	(PV)	TRC Costs (PV)						
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				
<b>*Totals App. B - Institutional</b>	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Institutional Indirect Costs <i>not</i> attributable to any specific program								
<b>Total TRC Costs</b>		\$ -						
<b>**Totals TRC - Institutional</b>	\$ -	\$ -	\$ -	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		\$ 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 (\$)
	(PV)	TRC Costs (PV)						
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				
<b>*Totals App. B - Industrial</b>	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Industrial Indirect Costs <i>not</i> attributable to any specific program								
<b>Total TRC Costs</b>		\$ -						
<b>**Totals TRC - Industrial</b>	\$ -	\$ -	\$ -	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				
<b>*Totals App. B - Agricultural</b>	\$ -	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
<i>Agricultural Indirect Costs not attributable to any specific program</i>									
<b>Total TRC Costs</b>		\$ -							
<b>**Totals TRC - Agricultural</b>	\$ -	\$ -	\$ -	\$ -	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 (\$)
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 F				\$ -	0.00				
Name of Program G				\$ -	0.00				
Name of Program H				\$ -	0.00				
Name of Program I				\$ -	0.00				
Name of Program C				\$ -	0.00				
<b>*Totals App. B - LDC System</b>	\$ -	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
<i>LDC System Indirect Costs not attributable to any specific program</i>									
<b>Total TRC Costs</b>		\$ -							
<b>**Totals TRC - LDC System</b>	\$ -	\$ -	\$ -	\$ -	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. Seasonal Lighting Municipal Upgrade 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 (\$)
Seasonal Lighting Municipal Upgrade	\$ 17,368	\$ 4,739	\$ 12,628	3.66	18,970	379,400	0.25	\$ 3,054
Seasonal Lighting Upgrade	\$ 21,962	\$ 8,658	\$ 13,303	2.54	22,524	450,480	0.04	\$ 5,580
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				
<b>*Totals App. B - Seasonal Lighting Municipal Upgrade</b>	<b>\$ 39,330</b>	<b>\$ 13,398</b>	<b>\$ 25,932</b>	<b>2.94</b>	<b>41,494</b>	<b>829,880</b>	<b>0.29</b>	<b>\$ 8,635</b>
Seasonal Lighting Municipal Upgrade Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		<b>\$ 13,398</b>						
<b>**Totals TRC - Seasonal Lighting Municipal Upgrade</b>	<b>\$ 39,330</b>	<b>\$ 13,398</b>	<b>\$ 25,932</b>	<b>2.94</b>				



## 9. Seasonal Lighting Upgrade 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 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				
<b>*Totals App. B - Seasonal Lighting Upgrade</b>	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Seasonal Lighting Upgrade Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ -						
<b>**Totals TRC - Seasonal Lighting Upgrade</b>	\$ -	\$ -	\$ -	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 (\$)
<b>*TOTALS FOR ALL APPENDIX B</b>	\$ 121,557	\$ 29,682	\$ 91,875	4.10	\$ 247,284	\$ 3,135,430	\$ 0.357	\$ 19,070
Any other Indirect Costs not attributable to any specific program		\$ -						
<b>TOTAL ALL LDC COSTS</b>		\$ 29,682						
<b>**LDC PORTFOLIO TRC</b>	\$ 121,557	\$ 29,682	\$ 91,875	4.10				

\* 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.



## Appendix D - Total Life Evaluation of the CDM Plan

Table is to be completed manually by totalling the information from each year of activity

	<sup>5</sup> Cumulative Totals Life-to-date	Residential	<sup>6</sup> Low Income	Commercial	Institutional	Industrial	Agricultural	LDC System	<sup>4</sup> Smart Meters	Seasonal Lighting Municipal Upgrade	Seasonal Lighting Upgrade
Net TRC value (\$):	\$ 91,875	\$ 65,942.77	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,628	\$ 13,303
Benefit to cost ratio:	4.10	5.05	-	-	-	-	-	-	-	3.66	2.54
Number of participants or units delivered:	747	600	-	-	-	-	-	-	-	52	95.00
Lifecycle (kWh) Savings:	3,135,430	2,305,550	-	-	-	-	-	-	-	379,400	450,480.00
Total kWh saved (kWh):	741,852	205,790	-	-	-	-	-	-	-	18,970	22,524.00
Total peak demand saved (kW):	0.357	0.067	-	-	-	-	-	-	-	0.250	0.040
Total kWh saved as a percentage of total kWh delivered (%):	2.5254%	1.76%	-	-	-	-	-	-	-	-	-
Peak kW saved as a percentage of LDC peak kW load (%):	0.00627%	12.68%	-	-	-	-	-	-	-	-	-
<sup>1</sup> Gross C&DM expenditures (\$):	\$ 19,069.61	\$ 10,434.83	-	-	-	-	-	-	-	\$ 3,054	\$ 5,580
<sup>2</sup> Expenditures per kWh saved (\$/kWh):	\$ 0.0061	\$ 0.0045	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.0081	\$ 0.0124
<sup>3</sup> Expenditures per kW saved (\$/kW):	\$ 53,491.19	\$ 156,914.74	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,217.92	\$ 139,507.50
Utility discount rate (%):	8.00										

<sup>1</sup> Expenditures are reported on cumulative basis.

<sup>2</sup> Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.

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

<sup>4</sup> Please report spending related to 3rd tranche of MARR funding only. TRC calculations are not required for Smart Meters. Actual expenditures for the total third tranche period need to be reported.

<sup>5</sup> Includes total for the reporting year, plus prior years, if any (for example, 2008 CDM Annual report for third tranche will include 2007, 2006, 2005 and 2004 numbers, if any).

<sup>6</sup> Includes totals from Low Income programs that fall under both commercial and residential.