
KINGSTON ELECTRICITY DISTRIBUTION LIMITED

2006
Annual Report
CDM Third Tranche
Funding

Prepared by Utilities Kingston for
Kingston Electricity Distribution Limited

March 31, 2007

INTRODUCTION

As set out in the 'Guideline for Annual Reporting of CDM Initiatives' Kingston Electricity Distribution Limited hereby submits its Conservation and Demand Management (CDM) Annual Report for 2006 to the Ontario Energy Board.

Of the 5 items approved in its CDM Approved Plan, LED Retrofit Program - was started and completed in 2005, the Smart Meter Program was started in 2005 and completed in 2006 and the Partnership / Marketing / Education Program was started in 2006.

This report provides an analysis for the LED Retrofits program (completed 2005), the Smart Meter Program (completed 2006) and the Partnership / Marketing / Education Program segments completed in 2006.

EVALUATION OF THE CDM PLAN

The attached Appendix A provides an overview of the effectiveness of our CDM Plan. It includes the two residential Partnership/Marketing/Education Programs completed in 2006 and the Smart Meter amount for 2006.

DISCUSSION OF THE PROGRAMS

LED - Retrofits Completed in 2005

The LED – Retrofit Program was completed in 2005, the discussion of this program was included in the 2005 CDM Annual Report

Smart Meters – 3rd Tranche Portion Completed in 2006

To enable Kingston Electricity Distribution Limited in supporting the Minister of Energy's commitment to the installation of SMART meters, a pilot program for residential SMART meters commenced in 2005.

This program will provide Kingston Electricity Distribution Limited with the experience and knowledge needed to efficiently expand the use of SMART meters over the next few years. It will also provide customers participating in the pilot program with an incentive to conserve or shift energy use. One of the key elements of the program is the assessment of communication technologies.

During 2006, we purchased Smart Meters at a cost of \$16,214 and incurred \$12,062 to install meters and data collections systems. This amount has been reported in Appendix C.

Partnership / Marketing / Education

In 2006, two programs were initiated targeting the residential sector.

In the fall a Christmas Light Exchange was organized with a local retail outlet. The premise of the program was to exchange, one for one, old inefficient incandescent Christmas light strings for new LED Christmas light strings. On this one day event 750 strings of LED Christmas lights were exchanged for over 2,000 strings of incandescent Christmas lights. The total resource cost (TRC) benefits were based on a one to one replacement on the 750 LED lights strings. KEDL also converted two public display Christmas Trees to LED type light strings. The TRC Benefits and Costs are included in Appendix B2 attached to this report.

Late in 2006 a customer 'awareness' program was set up to distribute 1,000 compact fluorescent bulbs to KEDL customers. The CFL's were distributed to walk-in KEDL customers to promote energy efficiency. To help dispel the misconceptions about compact fluorescents having poor light/colour quality, the bulbs chosen were Energy Star, miniature, 13 w, 'daylight' type with a high colour rendering index (CRI) and a 7 year life expectancy rating. Feedback from customers has been very positive. The TRC Benefits and Costs are included in Appendix B3 attached to this report.

System Optimization / Reduction of Distribution Losses

The System Optimization / Reduction of Distribution Losses program has not commenced and is currently under review.

Electric Hot Water Efficiencies Change-outs

The Electric Hot Water Efficiencies Change-outs program has not commenced and is currently under review.

LESSONS LEARNED

Kingston Electricity Distribution Limited has learned that conservation initiatives require considerable staff resources; in 2006, a dedicated Conservation and Demand Management Advisor position was added to coordinate the OEB approved Conservation and Demand Management Plan and the ongoing Ontario Power Authority's CDM programs.

CONCLUSION

Kingston Electricity Distribution Limited is striving to meet the Minister's direction which is consistent with the direction of our Shareholder and a number of community partners.

Kingston Electricity Distribution Limited will continue to promote a culture of conservation in 2007 through the approved CDM programs and the Ontario Power Authority's CDM initiatives.

Sincerely,



James A. Keech
President & CEO

CONTACTS

J. Keech, President and C.E.O.

K. Mundell, Conservation & Demand Management Advisor

Appendix A - Evaluation of the CDM Plan

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

	⁵ Cumulative Totals Life-to-date	Total for 2006	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	⁴ Smart Meters	Other #1	Other #2
Net TRC value (\$):	\$ 54,969,64	\$ 54,701	\$ 54,701	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
Benefit to cost ratio:	1.8273	4.53	4.53	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Number of participants or units delivered:	1956	1750	1750								
Lifecycle (kWh) Savings:	1265678	826,400	826,400	0	0	0	0	0		0	0
Report Year Total kWh saved (kWh):	293390	117,680	117,680	0	0	0	0	0		0	0
Total peak demand saved (kW):	49.65	30	30	0	0	0	0	0		0	0
Total kWh saved as a percentage of total kWh delivered (%):	0.0388%	0.0155%	0.0155%								
Peak kW saved as a percentage of LDC peak kW load (%):		0.021%	0.021%								
¹ Report Year Gross C&DM expenditures (\$):	\$ 43,774	\$ 43,774	\$ 15,498	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,276	\$ -	\$ -
² Expenditures per kWh saved (\$/kWh):	\$ 0.02	\$ 0.05	\$ 0.02	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
³ Expenditures per kW saved (\$/kW):	\$ 523.76	\$ 1,479.35	\$ 523.76	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
Utility discount rate (%):	7.79										

- ¹ Expenditures are reported on accrual basis.
² Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
³ Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.
⁴ Please report spending related to 3rd tranche of MARR funding only. TRC calculations are not required for Smart Meters. Only actual expenditures for the year need to be reported.
⁵ Includes total for the reporting year, plus prior year, if any (for example, 2006 CDM Annual report for third tranche will include 2005 and 2004 numbers, if any).

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. Name of the Program: LED Retrofits - Traffic Control Lights

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

Replace incandescent traffic light bulbs with LED bulbs

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent bulbs		
Efficient technology:	LED bulbs		
Number of participants or units delivered for reporting year:			
Measure life (years):	5		
Number of Participants or units delivered life to date	206		

B. TRC Results:

	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):		\$ 30,247.00
² TRC Costs (\$):		
Utility program cost (excluding incentives):		\$ 22,680.00
Incremental Measure Costs (Equipment Costs)		\$ 7,298.56
Total TRC costs:		\$ 29,978.56
Net TRC (in year CDN \$):		\$ 268.44
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	#DIV/0!	1.01

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):		Summer			20.06
		Winter			20.06
				Cumulative	Cumulative
				Lifecycle	Annual Savings
Energy saved (kWh):	439278		87855	439278	175710
Other resources saved :					
	Natural Gas (m3):				
	Other (specify):				

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):

lifecycle

in year

Energy savings (kWh):

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):

Energy generated (kWh):

Peak energy generated (kWh):

Fuel type:

Other Programs (specify):

Metric (specify):

D. Actual Program Costs:**Reporting Year****Cumulative Life to Date**

Utility direct costs (\$):

Incremental capital:

\$ 22,680.00

Incremental O&M:

Incentive:

Total:

\$ 22,680.00

Utility indirect costs (\$):

Incremental capital:

Incremental O&M:

Total:

E. Assumptions & Comments:

The LED Retrofits - Traffic Control Lights program was completed in 2005

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

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. Name of the Program: Partnership/Marketing/Education

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

Led Christmas Light Exchange

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	5 Watt Christmas Light	9 Watt Christmas Lights C9	
Efficient technology:	LED Christmas Lights	LED Christmas Lights	
Number of participants or units delivered for reporting year:	760	34	
Measure life (years):	30	30	
Number of Participants or units delivered life to date	760	34	

B. TRC Results:	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):	\$ 35,294.89	\$ 35,294.89
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 12,762.00	\$ 12,762.00
Incremental Measure Costs (Equipment Costs)	\$ -	\$ -
Total TRC costs:	\$ 12,762.00	\$ 12,762.00
Net TRC (in year CDN \$):		\$ 22,532.89
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ 2.77	\$ 2.77

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	Summer	0		0
	Winter	6.59		6.59
	lifecycle		in year	Cumulative Lifecycle
Energy saved (kWh):	410400	13680	410400	13680
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):		
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	<i>lifecycle</i>	<i>in year</i>
Energy savings (kWh):		

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	
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D. <u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
Utility direct costs (\$):	Incremental capital:	\$ 12,762.00	\$ 12,762.00
	Incremental O&M:		
	Incentive:		
	Total:	\$ 12,762.00	\$ 12,762.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

The LED Christmas Light Exchange Program exchanged on a 1 to 1 basis a set of incandescent lights for a set of LED lights. In actuality more than 2000 sets of incandescent lights were exchanged for 750 sets of LED lights. In addition 10 strings of C7 size LED lights were provided to light a KEDL sponsored tree in City Park and 34 strings of C9 size LED lights were supplied to light a tree at City Hall.

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. Name of the Program: Partnership/Marketing/Education

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

Compact Fluorescent Lamp Promotion

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:	1000		
Measure life (years):	4		
Number of Participants or units delivered life to date	1000		

B. TRC Results:

	Reporting Year	Life-to-date TRC Results:
¹ TRC Benefits (\$):	\$ 34,904.31	\$ 34,904.31
² TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 2,736.00	\$ 2,736.00
Incremental Measure Costs (Equipment Costs)	\$ -	\$ -
Total TRC costs:	\$ 2,736.00	\$ 2,736.00
Net TRC (in year CDN \$):		\$ 32,168.31
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ 12.76	12.75742161

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

Cumulative Results:

Conservation Programs:

<u>Conservation Programs:</u>				
Demand savings (kW):	Summer	0		0
	Winter	23		23

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):		
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	<i>lifecycle</i>	<i>in year</i>
Energy savings (kWh):		

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		
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D. <u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
Utility direct costs (\$):	Incremental capital:	\$ 2,736.00	\$ 2,736.00
	Incremental O&M:		
	Incentive:		
	Total:	\$ 2,736.00	\$ 2,736.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

Compact Fluorescent Lamp Promotion - this program was established to promote the use of Compact Fluorescent Lamps in conjunction with another utility awareness program. CFL's were given to KEDL customers that came into the office for bill payments and inquiries.

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

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

Appendix C - Program and Portfolio Totals

Report Year: 2006

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		Report Year Gross C&DM Expenditures (\$)
										Demand (kW) Saved		
Xmas LED Light Exchange	\$	35,295	\$	12,762	\$	22,533	2.77	13,680	410,400	7	\$	12,762
CFL promotion	\$	34,904	\$	2,736	\$	32,168	12.76	104,000	416,000	23	\$	2,736
Name of Program C						-	0.00					
Name of Program D						-	0.00					
Name of Program E						-	0.00					
Name of Program F						-	0.00					
Name of Program G						-	0.00					
Name of Program H						-	0.00					
Name of Program I						-	0.00					
Name of Program J						-	0.00					
*Totals App. B - Residential	\$	70,199	\$	15,498	\$	54,701	4.53	117,680	826,400	30	\$	15,498
Residential Indirect Costs not attributable to any specific program												
Total Residential TRC Costs												
*Totals TRC - Residential												

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		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 (\$)
	(PV)										
Name of Program A					\$ -	-	0.00			0	\$ -
Name of Program B					\$ -	-	0.00			0	\$ -
Name of Program C					\$ -	-	0.00			0	\$ -
Name of Program D					\$ -	-	0.00			0	\$ -
Name of Program E					\$ -	-	0.00			0	\$ -
Name of Program F					\$ -	-	0.00			0	\$ -
Name of Program G					\$ -	-	0.00			0	\$ -
Name of Program H					\$ -	-	0.00			0	\$ -
Name of Program I					\$ -	-	0.00			0	\$ -
Name of Program J					\$ -	-	0.00			0	\$ -
Totals App. B - Commercial											

Commercial Indirect Costs not attributable to any specific program

Total TRC Costs

	\$	-	
**Totals TRC - Commercial	\$	-	0.00

3. Institutional Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$	0.00				
Name of Program B			\$	0.00				
Name of Program C			\$	0.00				
Name of Program D			\$	0.00				
Name of Program E			\$	0.00				
Name of Program C			\$	0.00				
Name of Program G			\$	0.00				
Name of Program H			\$	0.00				
Name of Program I			\$	0.00				
Name of Program J			\$	0.00				
**Totals App. B - Institutional			\$	0.00	0	0	0	\$

Institutional Indirect Costs not attributable to any specific program

Total TRC Costs

	\$	-	
**Totals TRC - Institutional	\$	-	0.00

4. Industrial Programs

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

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

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

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 (\$)
28,276

8. Other #1 Programs

Note: To ensure the integrity of the formulas, please insert the additional rows as required.

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

LED Retrofits - Traffic Control Lights	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 B			\$	0.00				\$
Name of Program C			\$	0.00				
Name of Program D			\$	0.00				
Name of Program E			\$	0.00				
Name of Program F			\$	0.00				
Name of Program G			\$	0.00				
Name of Program H			\$	0.00				
Name of Program I			\$	0.00				
Name of Program J			\$	0.00				
*Totals App. B - Other #1	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Other #1 Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Other #1	\$ -	\$ -	\$ -	0.00				

9. Other #2 Programs

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

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

Name of Program A	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 B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
*Totals App. B - Other #2			\$ -	0.00	0	0	0	\$ -
Other #2 Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ -						
**Totals TRC - Other #2	\$ -	\$ -	\$ -	0.00				

LDC's CDM PORTFOLIO TOTALS

TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
*TOTALS FOR ALL APPENDIX B	\$ 70,199	\$ 15,498	4.53	117,680	826,400	30	43,774
Any other Indirect Costs not attributable to any specific program							
TOTAL ALL LDC COSTS		\$ 15,498					
**LDC PORTFOLIO TRC	\$ 70,199	\$ 15,498					

* 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.