

2006 OEB Annual

Conservation and Demand Management Report

Submitted By:

Welland Hydro-Electric System Corp.

RP- 2004-0203/EB- 2004-0523

April 2, 2007



**Welland Hydro-Electric System Corp.
2006 Conservation and Demand Management Annual Report**

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Board Secretary at Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
Suite 2700
Toronto, ON
M4P 1E4

**2006 Annual Conservation and Demand Management Report
RP-2004-0203 / EB 2004-0523**

Building on the foundation established in 2005, united CDM efforts were evident in 2006 on several fronts for Welland Hydro carrying forward and expanding proven programs in 2006, and pursuing new opportunities.

With its Niagara Erie Public Power Alliance (NEPPA) partners, Welland Hydro expanded the Conserver Joe Family Education Package of advertising, print and website communication with Ontario's first electricity conservation DVD distributed in elementary schools.

Another successful NEPPA initiative was the Refrigerator Retirement program which saw almost 150 older refrigerators and freezers retired from service and recycled from Welland.

The Every Kilowatt Counts program from the OPA was implemented in Welland with great effect in 2006. More than 14,000 energy efficiency products were purchased by consumers, ranging from lighting to thermostats and fans.

With the Region of Niagara, Welland Hydro continued relamping intersection traffic and pedestrian lights with LED technology that will save on both energy costs and relamping costs for years to come.

The details of these, and other 2006 CDM programs are set out in the accompanying 2006 Conservation and Demand Management Annual Report that Welland Hydro is pleased to submit.

We are proud of our CDM efforts in 2006, but recognize that the many initiatives over the past two years only represent a beginning. Energy efficiency and demand management is a continual cycle for both the deliverers and users of electricity, reinvesting in ever-improving efficiency.



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Regards,
NEPPA Member
Perry Orosz
Director of Customer Service
Welland Hydro-Electric System Corp.



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1.0 Introduction

The year 2006 marked the second full year of Welland Hydro's Conservation and Demand Management (CDM) Plan, implemented in conjunction with its Niagara Erie Public Power Alliance (NEPPA) partners, and directed at helping all customers of Welland's distribution system use this vital public resource more efficiently.

Welland Hydro-Electric System Corp serves an urban area of 86 square kilometers and some 22,364 electricity customers in the City of Welland, its sole shareholder. A combination of residential less than 50 kW General Service customers, greater than 50 kW General Service customers, and Large Use customers, have benefited from the CDM plan since its implementation commenced two years ago.

At the centre of its CDM strategy is Welland Hydro-Electric System Corp's commitment to promote a sustainable conservation culture with customers, and the community at large. To leverage greater value from each of its CDM initiatives, the LDC also participates on a regional level with its NEPPA partners on programming, to capture economies of scale in resourcing, and to deliver consistent messages to electricity consumers across 11 LDC service areas with some 525,000 customers and a total of \$5.5 million of CDM funding.

2.0 Evaluation of the CDM Plan

Overall, conservation and demand management activities expanded in 2006 for Welland Hydro customers through continued successful programs, program extensions, and the redirection of less effective initiatives toward those with proven CDM benefits. These included the introduction of an educational DVD for Grade 5 students, the roll-out of Ontario Power Authority's Every Kilowatt Counts program, a continuation of the OUSM Smart Metering group, and direct engagement of both small and large commercial customers on CDM through a Breakfast Seminar. Welland Hydro also developed a partnership with the City of Welland and Region of Niagara through the LED Traffic Light Conversion Program.

The established working relationship of NEPPA partners helped create a mutual CDM foundation in 2005, which was built upon in 2006. This important CDM partnership convened monthly meetings to plan and direct joint new CDM programming, find more efficient resourcing, and developed a strategy to derive the fullest value possible for



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emerging OPA CDM programs. During the year, NEPPA members cooperated on the production and distribution of educational DVDs to 155 elementary schools throughout member service areas continued a smart meter effort, for residential and small business customers.

Experience from 2005 helped Welland Hydro adjust its CDM Plan and refocus efforts more effectively in 2006. While the smart meter program for residential and small businesses moved ahead, it was determined that smart meters did not appeal to large businesses (> than 50 kW), which generally pay time-sensitive rates already. As a result, efforts for larger businesses were redirected to the Breakfast Seminar program.

In the Mass Market segment, the arrival of centrally planned programs from the OPA made it practical to shift from Lighten Your Electricity Bill into such initiatives as Every Kilowatt Counts.

Municipally, the LED traffic light relamping program was implemented in four main intersections of Welland.

As set out in Appendix A, Welland Hydro expended \$98,805 on CDM programming in 2006 on seven core CDM initiatives or programs, resulting in a net TRC benefit of \$551,136. The spending by program is detailed in the accompanying table.



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| Program | Target Customers | Shared Initiative with NEPPA | Total KWh / kW Savings | Actual Expenditure to Dec 31, 2006 |
|--|--|---|-------------------------------|---|
| Co-Branded Mass Market | Residential and less than 50 kW business | Every Kilowatt Counts (OPA) Conserver Joe DVD for schools | 8,408,684 kWh / 391 kW | \$ 6,837.74 |
| Residential Audit / Breakfast Seminars | Residential / >50kW | Redirected to Refrigerator Bounty / Local | - | \$ 6,841.84 |
| Refrigerator Bounty | Residential | OPA | 1,569,802 kWh / 71 kW | \$ 25,560.00 |
| Smart Meter Low volume | Residential <50 kW Business | NEPPA and OUSM | - | \$ 11,949.18 |
| Smart Meter Large | >50 kW | Discontinued | - | \$ 6,128.77 |
| LED Traffic Lights | All | Local relamping at 4 intersections | 637,868 kWh / 12 kW | \$ 5,197.67 |

3.0 Discussion of the Programs

Completed Projects

Every Kilowatt Counts. A program managed by the Conservation Bureau (OPA), Every Kilowatt Counts combined direct mail and in-store coupon promotions for a variety of energy efficient products and activities. According to the OPA figures, a total of 14,892 units, including compact fluorescent lights, thermostats, and fans went home with customers as a result of Welland Hydro-Electric System Corp direct mail campaign, and in-store coupons. Another page of this program saw 1934 LED light strings into service during the holiday season, including some 37 strings of LED lights to replace incandescent lighting used for the City of Welland’s holiday display. A school poster contest for EKC helped raise community awareness of the program.

Conserver Joe DVD. This initiative builds on the Conservation Family theme that was envisioned in 2005. Produced in partnership with NEPPA and Niagara College, the DVD is targeted at Grade 5 students at some 150 schools throughout the Niagara Region to



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help bring energy conservation into their environmental awareness. This is currently the only energy conservation DVD in distribution to Ontario schools.

Refrigerator Retirement. Energyshop.com was engaged by six NEPPA partners including Welland Hydro-Electric System Corp to design, deliver and track a secondary refrigerator retirement program between early July and the end of September. The participating LDCs sent bill inserts to customers and promoted the program in the media, customers to remove secondary refrigerators. Participating customers received a \$30 coupon (face value) as an incentive to contribute a working refrigerator or freezer that was at least 10 years old. Appliances were picked up, decommissioned and recycled. The coupons could be redeemed at Canadian Tire stores for CFL lighting and timers. Welland Hydro had 148 customers participate, who subsequently redeemed their coupons for 146 CFL bulb packs (6 per pack) and 102 timers. The program netted more than 156,000 kWh in energy savings and will reduce peak load by about 40 kW in both summer and winter.

Ongoing Projects

Website- www.conserverjoe.com This website, launched in 2005, was updated in 2006, with the addition of an energy usage calculator to help customers better understand and use energy. .

Large Customer Breakfast Seminar/Audit. Again in 2006, Welland Hydro hosted a breakfast seminar for large customers (>50 kW General Service) to help raise awareness of the opportunity that CDM affords businesses to operate more efficiently and competitively. As part of the program, customers were invited to participate in an online program, which enables customers to analyze their energy use with the Utilismart Energy Audit tool. Thus far, eight large customers have signed on to the program.

Smart Meters Residential and < 50kW GS. In conjunction with NEPPA and the OUSM Group, residential and smaller General Service customers participated in a program to test smart meter technology and communication capabilities. The learning from this test will enable Welland Hydro to more effectively install smart metering technology and leverage better value for customers over the longer term.

LED Traffic Lights. During 2006, Welland Hydro relamped incandescent traffic and pedestrian lights at four Welland intersections with LED equivalents. Seven intersections are scheduled for relamping in 2007.



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Voltage Conversion. A second voltage conversion from 4kV to 27.6kV to benefit small and larger business customers on Niagara Street in Welland is scheduled for completion in 2007. This \$400,000 investment will be completed in 2007. Energy and load savings will be fully assessed and reported after completion.

4.0 Lessons Learned

The new technologies that will enable conservation and demand management to become an integral part of daily energy use require significant learning on the part of both the LDC and its customers. In 2006, Welland Hydro-Electric System Corp. learned the importance of partnerships in understanding new technologies and how they are best harnessed.

This learning was evident in the testing of smart meter technologies with NEPPA partners that will benefit customers when fully implemented. Joint efforts with the Region also helped both parties more fully appreciate the value and benefits of LED traffic lights – not only for the energy and load savings, but the fact that relamping will need to occur much less frequently than with incandescent traffic lighting.

While understanding new technologies and their full application potential is essential to LDCs, it is equally important that this knowledge be transferred to electricity users. That way, behavioural changes can embed themselves in product purchasing decisions, energy use habits, and in a general awareness of a conservation approach to lifestyle. It underscores the importance of continued transformational communications such as the Conserver Joe DVD that speaks to a young demographic in school, helping shape a conservation culture long before they become adult consumers. Similarly, an energy savings poster contest in two schools also helped promote energy conservation in the Grade 5 Curriculum. To promote change on a broader scale, the LDC participated in the Region of Niagara Water Conservation Festival in September in 2006 as well as on the City of Welland Water Conservation Committee.

Similarly, knowledge transfer is vitally important for business customers who are aware of the benefits of energy conservation, but are not able to understand how it can be fully leveraged within their enterprise to give it priority in their investment decisions. That is why the Breakfast Seminar program and the online Utilismart evaluation tool are vitally important locally. It brings the LDC and customers together to transfer knowledge and to provide feedback as to which approaches and methods will best work.



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Finally, the implementation of provincial programs such as Every Kilowatt Counts and other initiatives by the OPA were welcome additions to the CDM portfolio in 2006. It eliminates the “left out” feeling that some LDC customers have felt when neighbouring jurisdictions offered popular programs to their customers. The OPA programs, particularly for the consumer segment, are administrated and communicated more effectively from a centralized agency, while the LDC is able to do what it does best, by being the local conduit for these programs. To that end, Welland Hydro was proud to serve on the Program Design Group of the Ontario Power Authority (OPA) to develop a portfolio of OPA CDM programs.

5.0 Conclusion

In 2006, Welland Hydro contributed an additional 475 kW and 1,877,116 kWh in demand and energy savings in 2006, eclipsing last year’s CDM results by some 0.36% and 2.21% respectively.

The LDC continued to strengthen its CDM relationship with all categories of customers, as well as with important stakeholders such as the OPA, NEPPA, and the Region of Niagara.

The most successful activities in 2006 in terms of kWh, kW and TRC values were:

- Co-Branded Mass Market - Conserver Joe Multimedia, Program Support, and Training
- Don't Be a Fridge Magnet - Refrigerator Retirement
- LED Traffic Light / Streetlight Replacement

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 | LED Traffic Light | Other #2 |
|--|---|----------------|-------------|------------|---------------|------------|--------------|------------|---------------------------|-------------------|----------|
| <i>Net TRC value (\$):</i> | \$ 489,576 | \$ 459,976 | \$ 441,946 | \$ - | \$ - | \$ - | \$ - | \$ - | | \$ 18,030 | \$ - |
| <i>Benefit to cost ratio:</i> | 2.69 | 6.30 | 7.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | 1.87 | 0.00 |
| <i>Number of participants or units delivered:</i> | 56,860 | 16,072 | 16,018 | 50 | | | | | | 4 | |
| <i>Lifecycle (kWh) Savings:</i> | 15,415,523 | 10,616,354 | 9,978,486 | 0 | 0 | 0 | 0 | 0 | | 637,868 | 0 |
| <i>Report Year Total kWh saved (kWh):</i> | 2,193,001 | 1,877,116 | 1,770,804 | 0 | 0 | 0 | 0 | 0 | | 106,311 | 0 |
| <i>Total peak demand saved (kW):</i> | 174 | 66 | 54 | 0 | 0 | 0 | 0 | 0 | | 12 | 0 |
| <i>Total kWh saved as a percentage of total kWh delivered (%):</i> | 1.56% | 2.27% | 2.13% | | | | | | | 0.14% | |
| <i>Peak kW saved as a percentage of LDC peak kW load (%):</i> | 0.08% | 0.06% | 0.05% | | | | | | | 0.01% | |
| ¹ <i>Report Year Gross C&DM expenditures (\$):</i> | \$ 229,585 | \$ 61,802 | \$ 32,398 | \$ 6,129 | \$ - | \$ - | \$ - | \$ - | \$ 18,078 | \$ 5,198 | \$ - |
| ² <i>Expenditures per kWh saved (\$/kWh):</i> | \$ 0.01 | \$ 0.01 | \$ 0.00 | \$ - | \$ - | \$ - | \$ - | \$ - | | \$ 0.01 | \$ - |
| ³ <i>Expenditures per kW saved (\$/kW):</i> | \$ 1,317.30 | \$ 932.37 | \$ 598.31 | \$ - | \$ - | \$ - | \$ - | \$ - | | \$ 428.29 | \$ - |
| <i>Utility discount rate (%):</i> | 7.625 | | | | | | | | | | |

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:** Co-Branded Mass Market - Conserver Joe Multimedia, Program Support, and Training

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

A program managed by the Conservation Bureau (OPA), Every Kilowatt Counts combined direct mail and in-store coupon promotions for a variety of energy efficient products and activities. The project included discounts for ceiling fans, LED Christmas Lights, Compact Fluorescent Lights and Outdoor Timers. The Conserver Joe DVD initiative expanded the Conservation Family theme of and was produced in partnership with NEPPA and Niagara College, the DVD is targeted at Grade 5 students at some 150 schools throughout the Niagara Region to help bring energy conservation into their environmental awareness. A school poster contest for EKC also helped raise community awareness of the program.

Measure(s):

| | EKC - Compact Fluorescent Lights | EKC - Dimmer Switch | EKC - Ceiling Fans |
|--|----------------------------------|-------------------------------|------------------------|
| <i>Base case technology:</i> | 60W Incandescent | 2 100 Watt incandescent bulbs | Average existing stock |
| <i>Efficient technology:</i> | CFL Screw-In 15W | Dimmer Switch | Ceiling Fan |
| <i>Number of participants or units delivered for reporting year:</i> | 12716 | 47 | 12 |
| <i>Measure life (years):</i> | 4 | 10 | 8 |

| | | | |
|---|-------|----|----|
| <i>Number of Participants or units delivered life to date</i> | 14134 | 47 | 12 |
|---|-------|----|----|

| | EKC - Motion Sensor Switch | EKC - Programmable Thermostats (Space Cooling) | EKC - Programmable Thermostats (Space Heating) |
|--|-------------------------------|--|--|
| <i>Base case technology:</i> | 3 100 Watt incandescent bulbs | Average existing stock | Average existing stock |
| <i>Efficient technology:</i> | Motion Detector | Programmable Thermostat | Programmable Thermostat |
| <i>Number of participants or units delivered for reporting year:</i> | 14 | 58 | 68 |
| <i>Measure life (years):</i> | 10 | 18 | 18 |

| | | | |
|---|----|-----|-----|
| <i>Number of Participants or units delivered life to date</i> | 14 | 146 | 156 |
|---|----|-----|-----|

| | EKC - Seasonal LEDs (5 Watt) | EKC - Seasonal LEDs (Mini Lights) | EKC - Timers |
|--|--|--|---|
| <i>Base case technology:</i> | 5 WATT Christmas lights C-7(64 lights) | Incandescent Mini Lights | 2 Flood Lights, 75W Incandescent, on 50% time |
| <i>Efficient technology:</i> | LED Christmas Lights (indoor or outdoor) | LED Christmas Lights (indoor or outdoor) | Light Timers |
| <i>Number of participants or units delivered for reporting year:</i> | 967 | 967 | 43 |
| <i>Measure life (years):</i> | 30 | 30 | 20 |

| | | | |
|---|------|------|-----|
| <i>Number of Participants or units delivered life to date</i> | 1212 | 1212 | 103 |
|---|------|------|-----|

B. **TRC Results:**

| | Reporting Year | Life-to-date TRC Results: |
|--|----------------|---------------------------|
| ¹ TRC Benefits (\$): | \$ 416,840.53 | \$ 531,598.54 |
| ² TRC Costs (\$): | | |
| Utility program cost (excluding incentives): | \$ 6,837.74 | \$ 11,695.75 |
| Incremental Measure Costs (Equipment Costs) | \$ 39,707.90 | \$ 53,807.90 |
| Total TRC costs: | \$ 46,545.64 | \$ 65,503.65 |

| | | | | |
|----------------------------------|----|------------|----|------------|
| Net TRC (in year CDN \$): | \$ | 370,294.89 | \$ | 370,390.69 |
|----------------------------------|----|------------|----|------------|

| | | | | |
|--|--|------|--|------|
| Benefit to Cost Ratio (TRC Benefits/TRC Costs): | | 8.96 | | 8.12 |
|--|--|------|--|------|

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

Cumulative Results:

Conservation Programs:

| | | | |
|-----------------------------|---------------|-----|-----|
| Demand savings (kW): | <i>Summer</i> | 14 | 14 |
| | <i>Winter</i> | 391 | 391 |

| | <i>lifecycle</i> | <i>in year</i> | <i>Cumulative Lifecycle</i> | <i>Cumulative Annual Savings</i> |
|--------------------------------|------------------|----------------|-----------------------------|----------------------------------|
| Energy saved (kWh): | 8,408,684 | 1,488,151 | 10,560,228 | 1,698,131 |
| Other resources saved : | | | | |
| <i>Natural Gas (m3):</i> | | | | |
| <i>Other (specify):</i> | | | | |

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>D. Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|--|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ 6,837.74 | \$ 11,695.75 |
| | Incentive: | \$ - | \$ 6,881.00 |
| | Total: | \$ 6,837.74 | \$ 18,576.75 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ 2,124.24 |
| | Total: | \$ - | \$ 2,124.24 |

E. Assumptions & Comments:

For Compact Fluorescent Lights, the number taken from the OPA figures is multiplied by 2.77 in the Spring and 2.86 in the Fall. For the TRC calculation of Ceiling Fans, "Contractor service (charge / air flow fix)" was used in the calculator. For Programmable Thermostats, the Baseboard Programmable Thermostats were classified as Space Heating, and the remaining Pstats were split half and half between Space Heating and Space Cooling. The Seasonal LEDs were split half and half between 5 Watt and Mini Lights. Timers were assumed to be Outdoor in the TRC calculation.

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 b

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Don't Be a Fridge Magnet - Refrigerator Retirement

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

Energysshop.com was engaged by six NEPPA partners including Welland Hydro-Electric System Corp to design, deliver and track a secondary refrigerator retirement program between early July and the end of September. The participating LDCs sent bill inserts to customers and promoted the program in the media, customers to remove secondary refrigerators. Participating customers received a \$30 coupon as incentive to contribute a working refrigerator or freezer that was at least 10 years old. Appliances were picked up, decommissioned and recycled. The coupons could be redeemed at Canadian Tire stores for CFL lighting and timers.

Measure(s):

| | Refrigerator Retirement | Freezer Retirement | Compact Fluorescent Lights |
|--|-------------------------|------------------------|----------------------------|
| <i>Base case technology:</i> | Average existing stock | Average existing stock | 60W Incandescent |
| <i>Efficient technology:</i> | Recycling Program | Recycling Program | CFL Screw-In 15W |
| <i>Number of participants or units delivered for reporting year:</i> | 146 | 2 | 876 |
| <i>Measure life (years):</i> | 6 | 6 | 4 |
| <i>Number of Participants or units delivered life to date</i> | 6 | 2 | 876 |

| | Indoor Timer |
|--|-------------------------------|
| <i>Base case technology:</i> | 2 100 Watt incandescent bulbs |
| <i>Efficient technology:</i> | Timer - Indoor Light |
| <i>Number of participants or units delivered for reporting year:</i> | 102 |
| <i>Measure life (years):</i> | 10 |
| <i>Number of Participants or units delivered life to date</i> | 102 |

| B. TRC Results: | Reporting Year | Life-to-date TRC Results: |
|--|---------------------|---------------------------|
| ¹ TRC Benefits (\$): | \$ 91,157.07 | \$ 91,157.07 |
| ² TRC Costs (\$): | | |
| <i>Utility program cost (excluding incentives):</i> | \$ 4,150.00 | \$ 4,150.00 |
| <i>Incremental Measure Costs (Equipment Costs)</i> | \$ 15,355.80 | \$ 15,355.80 |
| Total TRC costs: | \$ 19,505.80 | \$ 19,505.80 |
| Net TRC (in year CDN \$): | \$ 71,651.27 | \$ 71,651.27 |
| <i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i> | 4.67 | 4.67 |

| C. Results: (one or more category may apply) | Cumulative Results: | | | |
|---|----------------------------|----------------|-----------------------------|----------------------------------|
| Conservation Programs: | | | | |
| <i>Demand savings (kW):</i> | <i>Summer</i> | 40 | 40 | |
| | <i>Winter</i> | 71 | 71 | |
| <i>Energy saved (kWh):</i> | <i>lifecycle</i> | <i>in year</i> | <i>Cumulative Lifecycle</i> | <i>Cumulative Annual Savings</i> |
| <i>Other resources saved :</i> | 1,569,802 | 282,653 | 1,569,802 | 282,653 |
| | <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> | | | | |

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

| | |
|--|--|
| | |
| | |

Demand Response Programs:

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

| | |
|--|--|
| | |
| | |

Power Factor Correction Programs:

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

| | |
|--|--|
| | |
| | |
| | |

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|-------------------------------------|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ 4,150.00 | \$ 4,150.00 |
| | Incentive: | \$ 21,410.00 | \$ 21,410.00 |
| | Total: | \$ 25,560.00 | \$ 25,560.00 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ - |
| | Total: | \$ - | \$ - |

E. Assumptions & Comments:

In the Indoor Timer TRC calculation, the dimmer switch was used.

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 b

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** LED Traffic Light / Streetlight Replacement

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

During 2006, Welland Hydro-Electric System Corp. relamped incandescent traffic and pedestrian lights at four Welland intersections with LED equivalents.

Measure(s):

| | LED Traffic Lights | Measure 2 (if applicable) | Measure 3 (if applicable) |
|---|-----------------------------|---------------------------|---------------------------|
| Base case technology: | Incandescent Traffic Lights | | |
| Efficient technology: | LED Traffic Lights | | |
| Number of participants or units delivered for reporting year: | 4 | | |
| Measure life (years): | 6 | | |
| Number of Participants or units delivered life to date | 4 | | |

| B. TRC Results: | Reporting Year | Life-to-date TRC Results: |
|---|---------------------|---------------------------|
| ¹ TRC Benefits (\$): | \$ 38,820.33 | \$ 38,820.33 |
| ² TRC Costs (\$): | | |
| Utility program cost (excluding incentives): | \$ - | \$ - |
| Incremental Measure Costs (Equipment Costs) | \$ 20,790.68 | \$ 20,790.68 |
| Total TRC costs: | \$ 20,790.68 | \$ 20,790.68 |
| Net TRC (in year CDN \$): | \$ 18,029.65 | \$ 18,029.65 |
| Benefit to Cost Ratio (TRC Benefits/TRC Costs): | 1.87 | 1.87 |

| C. Results: (one or more category may apply) | Cumulative Results: | | | |
|--|----------------------------|---------|----------------------|---------------------------|
| Conservation Programs: | | | | |
| Demand savings (kW): | Summer | 12 | 12 | |
| | Winter | 12 | 12 | |
| | lifecycle | in year | Cumulative Lifecycle | Cumulative Annual Savings |
| Energy saved (kWh): | 637,868 | 106,311 | 637,868 | 106,311 |
| Other resources saved : | | | | |
| Natural Gas (m3): | | | | |
| Other (specify): | | | | |
| Demand Management Programs: | | | | |
| Controlled load (kW) | | | | |
| Energy shifted On-peak to Mid-peak (kWh): | | | | |
| Energy shifted On-peak to Off-peak (kWh): | | | | |
| Energy shifted Mid-peak to Off-peak (kWh): | | | | |
| Demand Response Programs: | | | | |
| Dispatchable load (kW): | | | | |
| Peak hours dispatched in year (hours): | | | | |
| Power Factor Correction Programs: | | | | |
| Amount of KVar installed (KVar): | | | | |
| Distribution system power factor at beginning of year (%): | | | | |
| Distribution system power factor at end of year (%): | | | | |

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|-------------------------------------|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | | \$ - |
| | Incremental O&M: | \$ 5,197.67 | \$ 5,197.67 |
| | Incentive: | \$ - | \$ - |
| | Total: | \$ 5,197.67 | \$ 5,197.67 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ - |
| | Total: | \$ - | \$ - |

E. Assumptions & Comments:

3.034 kW were assumed, operating 7X24 for TRC results.

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 b

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Smart Meter < 50 kW

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

We are actively participating on working groups to ensure our ability to select and meet targeted timelines as set by the OEB and MOE. All costs incurred include are incremental costs to participate on committees, and our portion of consultant fees (OUSM). The intent of the program is evaluating different smart metering technology available to residential customers and present the results back to the province. There are more than 40 utilities participating in the OUSM group to design the program. This is a smart meter education program.

Measure(s):

| | Smart Meter | Measure 2 (if applicable) | Measure 3 (if applicable) |
|---|-----------------------------|---------------------------|---------------------------|
| Base case technology: | Stock Meter | | |
| Efficient technology: | Smart Metering - Low Volume | | |
| Number of participants or units delivered for reporting year: | | | |
| Measure life (years): | | | |
| Number of Participants or units delivered life to date | | | |

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

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

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

Conservation Programs:

| | Summer | Winter | Cumulative Lifecycle | Cumulative Annual Savings |
|-------------------------|-----------|---------|----------------------|---------------------------|
| Demand savings (kW): | | | | |
| Energy saved (kWh): | lifecycle | in year | | |
| Other resources saved : | | | | |
| Natural Gas (m3): | | | | |
| Other (specify): | | | | |

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|-------------------------------------|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ 11,949.18 | \$ 11,949.18 |
| | Incentive: | \$ - | \$ - |
| | Total: | \$ 11,949.18 | \$ 11,949.18 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ 7,180.56 |
| | Total: | \$ - | \$ 7,180.56 |

E. Assumptions & Comments:

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 b

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Smart Meter > 50 kW

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

Welland Hydro discontinued this pilot in 2006 and redirected the funding to other CDM activities.

Measure(s):

| | Measure 1 | Measure 2 (if applicable) | Measure 3 (if applicable) |
|---|----------------------------|---------------------------|---------------------------|
| Base case technology: | Standard Commercial Meters | | |
| Efficient technology: | Interval Meters | | |
| Number of participants or units delivered for reporting year: | | | |
| Measure life (years): | | | |
| Number of Participants or units delivered life to date | | | |

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

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|-------------------------------------|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | \$ - | \$ 3,516.00 |
| | Incremental O&M: | \$ 6,128.77 | \$ 6,128.77 |
| | Incentive: | \$ - | \$ - |
| | Total: | \$ 6,128.77 | \$ 9,644.77 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ 2,052.28 |
| | Total: | \$ - | \$ 2,052.28 |

E. Assumptions & Comments:

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 b

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

Appendix B - Discussion of the Program

(complete this Appendix for each program)

A. **Name of the Program:** Large User and Large Commercial Customer Breakfast / Audit Program

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

A large user and large commercial breakfast information seminar was held on March 21, 2006 and 50 of our largest customers were in attendance. Welland Hydro also provided the Utilismart Energy audit and cost projection tools for customers on interval meters. Customers have rarely logged on to check usage of energy or pricing of energy.

Measure(s):

| | Measure 1 | Measure 2 (if applicable) | Measure 3 (if applicable) |
|---|-------------------|---------------------------|---------------------------|
| Base case technology: | | | |
| Efficient technology: | Breakfast Seminar | | |
| Number of participants or units delivered for reporting year: | 50 | | |
| Measure life (years): | | | |
| Number of Participants or units delivered life to date | | | |

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

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

| | | |
|-------------------|--|--|
| Metric (specify): | | |
|-------------------|--|--|

| <u>Actual Program Costs:</u> | | <u>Reporting Year</u> | <u>Cumulative Life to Date</u> |
|-------------------------------------|----------------------|------------------------------|---------------------------------------|
| Utility direct costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ 6,128.77 | \$ 6,128.77 |
| | Incentive: | \$ - | \$ - |
| | Total: | \$ 6,128.77 | \$ 6,128.77 |
| Utility indirect costs (\$): | Incremental capital: | \$ - | \$ - |
| | Incremental O&M: | \$ - | \$ 4,522.43 |
| | Total: | \$ - | \$ 4,522.43 |

E. Assumptions & Comments:

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 Demand (kW) Saved | Report Year Gross C&DM Expenditures (\$) |
|---|-------------------|------------------|---------------------|--------------------|-----------------------------|-------------------------|------------------------------|--|
| Co-Branded Mass Market | \$ 416,841 | \$ 46,546 | \$ 370,295 | 8.96 | 1,488,151 | 8,408,684 | 14 | \$ 6,838 |
| Refrigerator Retirement Program | \$ 91,157 | \$ 19,506 | \$ 71,651 | 4.67 | 282,653 | 1,569,802 | 40 | \$ 25,560 |
| 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 | \$ 507,998 | \$ 66,051 | \$ 441,946 | 7.69 | 1,770,804 | 9,978,486 | 54 | \$ 32,398 |
| Residential Indirect Costs not attributable to any specific program | → | | | | | | | |
| Total Residential TRC Costs | | \$ 66,051 | | | | | | |
| **Totals TRC - Residential | \$ 507,998 | \$ 66,051 | \$ 441,946 | 7.69 | | | | |

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 (\$) |
|------------------------------------|-------------------|----------------|---------------------|--------------------|-----------------------------|-------------------------|------------------------------|--|
| Breakfast / Audit Program | \$ - | \$ - | \$ - | 0.00 | 0 | 0 | 0 | \$ 6,129 |
| Name of Program B | | | \$ - | 0.00 | | | | |
| Name of Program C | | | \$ - | 0.00 | | | | |
| Name of Program D | | | \$ - | 0.00 | | | | |
| Name of Program E | | | \$ - | 0.00 | | | | |
| Name of Program F | | | \$ - | 0.00 | | | | |
| Name of Program G | | | \$ - | 0.00 | | | | |
| Name of Program H | | | \$ - | 0.00 | | | | |
| Name of Program I | | | \$ - | 0.00 | | | | |
| Name of Program J | | | \$ - | 0.00 | | | | |
| *Totals App. B - Commercial | \$ - | \$ - | \$ - | 0.00 | 0 | 0 | 0 | \$ 6,129 |

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 | 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 J | | | \$ | - | 0.00 | | | | |
| *Totals App. B - Industrial | \$ | - | \$ | - | 0.00 | 0 | 0 | 0 | \$ - |
| Industrial Indirect Costs not attributable to any specific program | → | | | | | | | | |
| Total TRC Costs | | \$ | - | | | | | | |
| **Totals TRC - Industrial | \$ | - | \$ | - | 0.00 | | | | |

5. Agricultural Programs

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

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

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

6. LDC System Programs

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

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

| | TRC Benefits (PV) | TRC Costs (PV) | \$ Net TRC Benefits | Benefit/Cost Ratio | Report Year Total kWh Saved | Lifecycle (kWh) Savings | Total Peak Demand (kW) Saved | Report Year Gross C&DM Expenditures (\$) |
|-------------------|-------------------|----------------|---------------------|--------------------|-----------------------------|-------------------------|------------------------------|--|
| 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 | | | | |
| *Totals App. B - LDC System | \$ | - | \$ | - | 0.00 | 0 | 0 | 0 | \$ - |

LDC System Indirect Costs not attributable to any specific program →

| | | | | | | | | | |
|----------------------------------|----|----|----|---|----|---|------|--|--|
| Total TRC Costs | | \$ | - | | | | | | |
| **Totals TRC - LDC System | \$ | - | \$ | - | \$ | - | 0.00 | | |

7. Smart Meters Program

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

Report Year Gross C&DM Expenditures (\$) → \$ 18,077.95

8. LED Traffic Light 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 (\$) |
|---|-------------------|----------------|---------------------|--------------------|-----------------------------|-------------------------|------------------------------|--|
| LED Traffic Lights | \$ 38,820 | \$ 20,791 | \$ 18,030 | 1.87 | 106,311 | 637,868 | 12 | \$ 5,198 |
| 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 - LED Traffic Light | \$ 38,820 | \$ 20,791 | \$ 18,030 | 1.87 | 106,311 | 637,868 | 12 | \$ 5,198 |
| LED Traffic Light Indirect Costs not attributable to any specific program → | | | | | | | | |
| Total TRC Costs | | \$ 20,791 | | | | | | |
| **Totals TRC - LED Traffic Light | \$ 38,820 | \$ 20,791 | \$ 18,030 | 1.87 | | | | |


9. Other #2 Programs

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

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

| | TRC Benefits (PV) | TRC Costs (PV) | \$ Net TRC Benefits | Benefit/Cost Ratio | Report Year Total kWh Saved | Lifecycle (kWh) Savings | Total Peak Demand (kW) Saved | Report Year Gross C&DM Expenditures (\$) |
|---|---|----------------|---------------------|--------------------|-----------------------------|-------------------------|------------------------------|--|
| Name of Program A | | | \$ - | 0.00 | | | | |
| Name of Program B | | | \$ - | 0.00 | | | | |
| Name of Program C | | | \$ - | 0.00 | | | | |
| Name of Program D | | | \$ - | 0.00 | | | | |
| Name of Program E | | | \$ - | 0.00 | | | | |
| Name of Program C | | | \$ - | 0.00 | | | | |
| Name of Program G | | | \$ - | 0.00 | | | | |
| Name of Program H | | | \$ - | 0.00 | | | | |
| Name of Program I | | | \$ - | 0.00 | | | | |
| Name of Program J | | | \$ - | 0.00 | | | | |
| *Totals App. B - Other #2 | \$ - | \$ - | \$ - | 0.00 | 0 | 0 | 0 | \$ - |
| <i>Other #2 Indirect Costs not attributable to any specific program</i> |  | | | | | | | |
| 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 | \$ 546,818 | \$ 86,842 | \$ 459,976 | 6.30 | \$ 1,877,116 | \$ 10,616,354 | \$ 66 | \$ 61,802 |
| <i>Any other Indirect Costs not attributable to any specific program</i> |  | | | | | | | |
| TOTAL ALL LDC COSTS | | \$ 86,842 | | | | | | |
| **LDC' PORTFOLIO TRC | \$ 546,818 | \$ 86,842 | \$ 459,976 | 6.30 | | | | |

* 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.