

**Hydro One Networks Inc.**  
**Conservation and Demand Management Plan**  
**Annual Report to December 31, 2006**

**RP-2004-0203 \ EB-2005-0198**

**April 2, 2007**

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## Introduction

On February 18, 2005 Hydro One Networks Inc. (Networks) received final approval from the Board for their Conservation and Demand Management Plan (CDM Plan) covering the period 2005 – 2007. The approval was conditional upon the re-allocation to other projects of \$7.1 million that Networks planned for smart meters in 2006.

On November 1, 2005 the Board approved the re-allocation of the funds. The CDM Plan included Market Adjusted Rate of Return (MARR) funding in the amount of \$39.5 million. The initiatives approved by the Board satisfy the Minister's condition of a financial commitment to reinvest in CDM initiatives. In the decision of the Board, Networks, along with all other LDCs, was required to file both quarterly and annual reports tracking the progress of the CDM Plans. This report meets the requirement for the annual report for 2006.

On October 5, 2004, the Board issued a *Procedural Order*, which contained the reporting filing requirements (paragraphs 26 through 30) applicable to MARR CDM funding. On December 21, 2005 the Board issued the *Guideline* for Annual Reporting to the OEB, which is intended to include reporting for funding for the year ended 2005 and the third tranche MARR. On March 31, 2006 Networks submitted its first CDM Annual Report.

On October 2, 2006 the Board issued a revised TRC Guide. On March 1, 2007 changes to the reporting format were released which included a new schedule (Schedule C) and revisions to the existing schedules. On March 9, 2007 clarification regarding the schedules was also released.

In this second CDM Annual Report, Networks has complied with the requirement of the Procedural Order. Networks has also provided the information requested in the Guidelines.

## Results Summary

Networks has been successful at managing and rolling out programs across all sectors, including residential, farm, commercial and industrial, as well as the Municipalities Universities Schools and Hospital (MUSH) sector. Networks has worked with partners from the retail sector, as well as with community-based organizations, schools and governmental bodies for the successful delivery of the Conservation and Demand Management programs and management of existing / prospective participants in various initiatives. The cooperation with other Local Distribution Companies has been a valuable strategy for the development and delivery of joint programs to all electricity customers. The portfolio of programs offered confirms the Company's commitment to contribute to the goal of culture change within the province through various communication and education activities.

**Results achieved to date amount to annual energy savings of just under 100 million kWh, or the equivalent of the electricity needed to power over 8,200 homes for one year. The expected energy savings over the lifetime of the equipment are 635 million kWh, or the electricity consumption of over 53,000 homes for one year. In addition, a peak demand reduction of almost 11 MW has been achieved.**

Networks' CDM Plan has been successfully implemented in 2006 to provide a balanced approach to both conservation and load control initiatives. Our programs are designed to offer opportunities for all customers within our service territory to contribute to and benefit from a culture of conservation. As we mentioned in the 2005 CDM Annual Report, Networks' challenges are that it must cover most of the geography of the province, yet it only serves about 30% of the customers, a fact that is reflected in cost effectiveness of some individual programs. Networks' programs will deliver financial savings for our customers, as well as kilowatt hour (kWh) and kilowatt (kW) savings to contribute to meeting the Province's goals.

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The following figure provides an overview of Networks' CDM approved budget, life to date (LTD) spending as at December 31, 2006, as well as kWh and KW savings earned.

Figure 1

<b>PROGRAM</b>	<b>3 YEAR BUDGET (\$K)*</b>	<b>LTD SPENDING TO DEC 2006 (\$K)</b>	<b>Cumulative SAVINGS KW**</b>	<b>Cumulative ANNUAL SAVINGS kWh**</b>	<b>Cumulative LIFECYCLE SAVINGS kWh</b>
<b>Residential</b>					
Smart Meters	7,800	7,800	-	-	-
Real Time Monitoring Pilot	425	466	38	401,482	2,007,410
Real Time Monitoring Program	4,075	3,242	3,357	14,809,145	74,047,076
Mass Markets	1,870	1,382	4,671	81,724,679	526,034,109
LED	380	296	-	546,454	16,393,624
Low Income/Social Housing	4,400	497	6	294,078	5,263,750
Load Control Pilot	710	710	358	-	-
Load Control Program	3,500	2,117	2,169	806,435	8,780,648
<b>Total</b>	<b>23,160</b>	<b>16,510</b>	<b>10,599</b>	<b>98,582,273</b>	<b>632,526,617</b>
<b>Commercial/Industrial, Farm, MUSH</b>					
Interim Time of Use	920	632	-	-	-
C/I MUSH Conservation	600	240	21	185,396	1,870,103
C/I & Farm Load Control	3,500	2	-	-	-
Farm Energy Efficiency	750	114	9	64,000	408,009
<b>Total</b>	<b>5,770</b>	<b>988</b>	<b>30</b>	<b>249,396</b>	<b>2,278,112</b>
<b>Common</b>					
Distribution Loss Reduction	7,200	877	-	-	-
Program Management and Research	2,600	1,576	-	-	-
Communication and Education	800	463	-	286,578	1,146,312
Carrying Charge		25	-	-	-
<b>Total</b>	<b>10,600</b>	<b>2,941</b>	<b>-</b>	<b>286,578</b>	<b>1,146,312</b>
<b>Grand Total</b>	<b>39,530</b>	<b>20,438</b>	<b>10,629</b>	<b>99,118,247</b>	<b>635,951,041</b>

\*Note: The budget has been reallocated from approved plan and the reallocations are within the 20% flexibility allowed by the Board. The new allocation has already been provided to the Board in the 2006 Q4 report.

\*\*Cumulative annual and lifecycle KW and kWh savings are reported as per calculations in Appendices B.

As of year-end 2006, approximately 52% of the 2005-2007 budget had been spent. During 2006 alone Networks spent 42% of the triennial budget. This result reflects Hydro One's strategy to concentrate on pilot programs in 2005 in order to evaluate customer acceptance and effectiveness of new technologies. 2006 saw the roll out of larger scale programs, including in-home displays, residential load control, appliance pickup, residential coupon programs, social housing, low income and the first phase of smart meters. Year 2007 will be based on the continuation and successful completion of these CDM programs.

Highlights for 2006 include:

- The CDM program portfolio to date has produced approximately \$4 of societal benefits for every \$1 spent on program costs, as measured through the Total Resource Cost (TRC) test (see Appendix A).
- Networks made 30,000 PowerCost Monitors available to its customers in northern Ontario in 2006. This is the largest deployment of its kind in North America thereby providing customers with real time feedback on their actual electricity use and cost in order to enhance their ability to conserve.
- Customers responded well to the Residential Load Control Program. Enrolment reached the target of 6,000 participants ahead of schedule in December, 2006. Customers recognized the importance of load control to manage the electricity system and welcomed the opportunity to save energy.
- The Cold Shoulder Appliance Pickup program has been very successful, attracting bookings for over 4,000 operating refrigerators, freezers and room air conditioners and leading to expansion of the program from eastern Ontario to all of southern Ontario.
- Over 215,000 people visited the summer festivals across the province where the PowerSaver Tour information booths were located, with 10,000 of those customers responding to a survey, receiving a free CFL, and purchasing efficient products.
- Over 2,000 operational room air conditioners were removed from service and disposed of in an environmentally responsible manner during June, as part of the Keep Cool program.
- Hydro One customers purchased 727,000 energy efficient products during the two Every Kilowatt Counts programs, accounting for 20% of the provincial results.
- By the end of 2006, energy audits have been conducted for 13 social housing providers, representing 1,700 homes in Networks' territory. Implementation of measures will follow in 2007.
- 250 small business establishments received free energy efficiency audits.
- The PowerSaver Business Incentive program, offering up to \$50,000 in financial incentive per customer, was launched late in the year to our business, institutional and farm customers and is building momentum.

## **Program Overviews**

## **Residential: Residential In-Home Display Program**

*At 30,000 monitors this is the largest deployment of real time in-home displays in North America, providing Hydro One's customers in Northern Ontario with real time feedback on their actual electricity use and cost thereby enhancing their ability to conserve.*

### **Description:**

During 2006, Networks offered 30,000 PowerCost Monitors™ to residential customers in Northern Ontario. Customers use the Monitors to check and manage their electrical consumption in real-time. They are able to view their current usage rate and cumulative consumption in kWh, as well as an estimate of the cost of that consumption. Networks' initiative is the largest of its kind in North America.

### **Design:**

Following the completion and evaluation of the pilot project in 2005, Hydro One decided to begin the roll out of in-home displays in Northern Ontario. This region will be the last in Networks service territory to receive Smart Meters and some residential programs are not available here due to cost and logistical issues.

During 2006, Networks offered up to 30,000 PowerCost Monitors™ to its 130,000 residential customers in Northern Ontario, on a "first come, first served" basis. Eligible customers received the \$150 monitor for free, with the exception of postage and handling costs of \$8.99.

### **Intent:**

The objectives of the program were to provide a real-time feedback device to empower residential customers with the information needed to change behaviours and encourage efficiency. As reported in Networks 2005 annual report, an average of 6.5% decrease in electricity consumption was experienced by customers in the pilot.

### **Delivery:**

All aspects other than program evaluation were awarded to BlueLine Innovations as part of a turn key contract following a competitive proposal process, including product supply, marketing, customer enrolment, product delivery and customer/product support.

Customers can order the product from BlueLine via a 1-800 number or from the PowerCost Monitor™ website. BlueLine has also held a number of community events across Northern Ontario where they demonstrated the Power Cost Monitor™ and had stock available for customers to take with them.

### **Evaluation:**

The program was launched in July 2006 and by December 31, 2006 over 20,000 monitors had been delivered to Networks customers. Uptake is proceeding as planned and the target of 30,000 is expected to be reached in the spring of 2007. This will mean that about 20% of the residential customers in Northern Ontario will be equipped with in-home displays for their electricity consumption.



Networks conducted two customer surveys through an external research firm. The first survey, done in August 2006 was to gauge customer reaction to the launch of the program. The second survey, done at the end of November 2006, evaluated the reaction of customers who were using their PowerCost Monitor™. Customers reported overall satisfaction with the ordering process for their monitor (93% somewhat or very satisfied). They also report a high level of satisfaction with the operation of their monitor (80% somewhat or very satisfied). A majority of respondents (57%) reported that the monitor had already had an impact on the household use of electricity. 82% of customers with monitors reported that they would still order the monitor given the experience they had had to date. As for customers' opinion of Hydro One given their experience with the PowerCost Monitor™ program, 91% reported their opinion stayed the same or improved.

Networks staff will assess customer changes in electricity usage based on meter readings in 2007.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings KW</b>	<b>Cumulative Lifecycle kWh</b>
Real Time Monitoring Pilot	466	401,402	38	2,007,410
Res. In-Home Display Program (20,400 participants)	3,242	14,809,145	3,357	74,047,076

## **Residential: Residential Load Control Program (Smartstat)**

*Customers responded to this program exceptionally well with enrolment reaching the target of 6,000 participants ahead of schedule in December, 2006. Customer recognized the importance of load control to manage the electricity system and welcomed the opportunity to save energy.*

### **Description:**

The Smartstat residential load control program was launched in July, 2006. This program is designed to achieve up to 13 MW summer peak demand reduction by controlling participants' central air-conditioning (AC) units using web-enabled programmable thermostats, and by cycling electric water heater loads using an off/on switch.

The initial program objective was to achieve 6,000 installations in residential homes by June 1st, 2007. The initial target of 6,000 enrolments was achieved well ahead of schedule in December 2006 and as a result we set a new goal of 10,000 participants to be achieved prior to the upcoming summer.

The program offers a top-of-the line programmable thermostat including free installation and programming for all eligible participants. With this thermostat Hydro One controls customers' central AC units to reduce peak summer load on the system. The customer, meanwhile, can benefit by saving energy throughout the year and they gain the ability to remotely change the temperature settings via the internet. In cases where the customer has an electric hot water system, a load control switch will also be installed plus an energy saving tank wrap and pipe insulation for additional savings. Finally, all participants receive two free energy efficient CFLs. No cash incentives are offered in this program.

### **Design:**

Load control is carried out through an event which involves increasing the air conditioning temperature set-point by two degrees Celsius in summer afternoons for four hours at minimal or no inconvenience to the home owner. The customer cannot override the event manually but can opt out of the event or the program by calling a toll free number to make their wishes known. The experience in other jurisdictions indicates that opting out is a rare event. During 2005 pilot, none of the customers with the ability to opt out of an event exercised that option.

The load control strategy is as follows:

- Control Season: June 15 to September 15
- Control Events: 10-15 events /summer season
- AC control event duration: 4 hours (2:00-6:00 pm)
- DHW control event duration: 3 hours maximum (3:00-6:00pm)
- Air conditioning control Increase temperature by max 2 degrees C
- DHW control Switch off up to 3 hours during AC control
- Control on weekends & holidays None

### **Intent:**

The program is currently on schedule to complete 10,000 installations, providing Hydro One with up to 13MW of peak load control capacity ready for operation in June 15, 2007.

Owning a Central AC is a pre-requisite for participation in the program. This means that all program participants are equipped with smart thermostats that are ready to receive a command during a control event. In the high peak days of the summer, Hydro One will take control of the thermostats remotely and setback the temperature by two degrees Celsius, reducing load by approximately 1 kW per household. If the homeowners happen to have an electric water heater, the load reduction will be in excess of 1.5 kW per customer.

#### **Delivery:**

The program management is out-sourced as a turnkey service to Goodcents Solutions. The vendor is accountable to Hydro One for the promotion, customer enrolment, deployment, equipment installation, call center management, customer care, and weekly reporting of the results.

Hydro One is overseeing the operations and working closely with vendors throughout the implementation process. The program is currently moving forward ahead of schedule and any potential problem including customer complaints are promptly and effectively dealt with.

The installation of the thermostats and the water heater switch devices is carried out by dedicated full time contractors that have been trained and specifically assigned to the program. The installers are licensed electricians that understand their role as program delivery agents providing customer care and education. The installation of the equipment is only a component of what the installers are responsible for. While the installation is taking place, the home owner is encouraged to view a DVD describing the program objectives and explaining the technologies involved and why their participation is important. This contributes to creating a culture of conservation as one of the key objectives of this program. The thermostat is then programmed by the installer for the first time based on customer's instructions and a package is left behind including further information as well as two energy saving compact fluorescent light bulbs.

#### **Evaluation:**

Program installation progress is currently being tracked and reported on a weekly basis. Hydro One directly initiates the load control event management; determining the duration and timing of the load reduction on the system. A professional monitoring and evaluation analysis will also be carried out after the upcoming summer to determine the load reduction impact as well as the corresponding customer response and satisfaction level.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings KW</b>	<b>Cumulative Lifecycle kWh</b>
Residential Load Control Pilot	710		358	
Residential Load Control (SmartStat) 1687 instalments	2,117	806,435	2,169	8,780,648

## **Residential: Seasonal LED Light Exchange**

*Community based conservation initiatives, such as the Seasonal LED Light (SLED) exchanges, proved to be very popular as well as an effective means of getting the conservation message out to our customers.*

### **Description:**

This year was the second year of the SLED Exchange program. In 2006 the program was enhanced in that it was made available across entire Networks territory. The response exceeded initial expectations as a total of 105 community events were included in the 2006 SLED Exchange.

### **Design:**

Hydro One managed and attended 10 community events, at which customers turned in incandescent strings of lights for a string of SLEDs. The incandescent lights that were collected were taken out of service and recycled in an environmentally friendly manner.

Hydro One also provided energy efficient holiday lights free of charge to any community in our service territory that held its own SLED Exchange. Community participation was obtained through direct marketing to over 250 communities in Hydro One territory.

Due to a Safety Alert related to the manufacturer of the SLEDs that Hydro One utilized for the Exchange Program, retailer gift cards were used as a replacement for the SLEDs at the exchanges.

### **Intent:**

The objective of the SLED program was to create awareness of the benefits of SLED lights to drive market transformation as well as a change in consumer behaviour and to reduce the seasonal electrical load associated with seasonal lights. SLEDs use up to 95% less energy, last longer and emit less heat. These benefits provide both energy savings and cost savings to the customer.

### **Delivery:**

The program was delivered in three components: The first component was a SLED exchange, where customers exchanged incandescent light strings for a SLED string at Hydro One attended events. These typically larger events were for the most part well attended and were staffed by Hydro One staff and/or a outsourced event management firm.

The second phase consisted of communities self enrolling through a web based enrolment process. Individual communities that used the online application process described their event that they intended to hold and provided such details as the anticipated attendance. Initial expectations were that approximately 30 to 40 individual events would be enrolled through this process. In total almost 100 communities responded. Advertising funds were made available to the enrolled communities to assist with promotion of their events. These exchanges were community managed whereby event organizers leveraged their own festivals and events in order to obtain maximum customer participation.

The third component was a program in which SLEDs were given to municipalities for their community Christmas trees and other seasonal decorations, to replace their existing incandescent decorations. By far the largest event was providing lights to Canada's largest Christmas tree that was erected in Cobden, Renfrew County. This was a very high profile event, which received national television coverage. It was also attended by dignitaries such as the Prime Minister. A part of this third component also included the sponsorship of Owen Sounds Festival of Northern Lights, which attracts thousands of visitors annually. Funds were provided to increase the efficiency of their existing Christmas displays.

### **Evaluation:**

Sales figures from the 2005 campaign showed that market transformation was well under way and that utilities were leading the charge.

In 2006 close to 18,500 SLED strings and gift cards were provided to residential customers and to municipalities. A total of 12,500 incandescent strings were collected from customers during the 2006 exchange program. In total over 32,000 incandescent light strings have been retired to date by the Networks program.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Lifecycle kWh</b>
SLED Lighting ( More than 32,000 strings retired)	296	546,454	16,393,624

## **Residential: Cold Shoulder Appliance Pickup**

*Customers enrolled over 4,000 inefficient secondary fridges, freezers and room air conditioners for pick up and proper disposal.*

### **Description:**

The Cold Shoulder Appliance Pickup program, which launched in September 2006, provides customers with free in-home pickup of secondary, operating refrigerators, freezers and room air conditioners. The appliances are permanently removed from operation and disposed of in an environmentally responsible manner.

### **Design**

This program was designed to retire old secondary operating appliances and provide customers with an energy efficient pack that includes educational material plus some energy efficient products, such as compact fluorescent lights (CFLs) and a timer. During the first phase of the program Networks targeted the customers in Eastern Ontario through bill inserts, bill messaging, web page, newspaper and radio advertising.

### **Intent**

The intent of the program was to reduce energy consumption and demand, save customers money on their electricity bills, increase customer understanding of the benefits of energy efficiency, and increase the usage of other energy efficiency technologies (eg. CFLs and timers).

### **Delivery**

All aspects of the program, other than program marketing, are delivered through a turn key contract with the service provider, including customer enrolment, scheduling appointments, picking up and transporting the appliances, decommissioning and proper disposal. Networks planned and delivered an integrated marketing campaign to raise awareness of this initiative, utilizing bill inserts, bill messages, website, radio and newspaper advertisements.

### **Evaluation**

Customer response has been very favourable for this program, exceeding the target enrolment of 3,000 appliances in only nine weeks. Networks increased the target and over 4,000 appliances were enrolled by year end.

The majority of participating customers indicated that they had learned about the program through either the bill insert or bill message, with newspaper advertising also generating significant enrolments. Radio advertisements did not seem to generate a significant number of enrolments and have been discontinued.

The coverage area for the program was expanded to encompass the balance of southern Ontario in January 2007 and continues to enjoy success.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings kW</b>	<b>Cumulative Lifecycle kWh</b>
Appliance Pickup (4,071 units)	446	5,817,321	1,134	47,909,027

## **Residential: PowerSaver Tour**

*Over 215,000 people visited the summer festivals across the province where the PowerSaver information booths were held, with 10,000 of those customers responding to a survey and receiving a free CFL.*

### **Description:**

The PowerSaver Tour program was a joint initiative between Networks and The Home Depot aimed at promoting and achieving energy savings. During ten weeks, from June until September 2006, a co-branded truck travelled throughout rural Ontario and participated in 11 summer festival events where it displayed educational material and offered discounted energy efficient products for sale. The program was leveraged with another complementary program - Cool Shops, for small businesses.

### **Design**

The program was designed to reach the rural areas of Hydro One territory throughout an integrated and co-branded marketing campaign. The participation of a large retail brand contributed to the delivery of the program and the penetration of a wide base of customers. The delivery of the PowerSaver Tour was done through Summerhill Group to eleven scheduled events during the summer of 2006. Summerhill representatives displayed promotional and educational material and sold discounted energy efficient products. A survey was administered at Tour events in order to understand customers' attitudes towards energy conservation and the effectiveness of this Hydro One program.

### **Intent:**

The main objectives of this integrated mass market campaign were to:

- Promote customer education and contribute to culture change
- Improve the energy efficiency of small businesses and homes within Hydro One Networks rural territory
- Engage, communicate with and have a better understanding of a wide base of Hydro One customers

### **Delivery:**

All aspects of the program were contracted through a turn key contract with an external service provider, who arranged the venues, promoted the booths, managed the survey and handled the supply and sales of all products. The Tour was also supported by a dedicated website. Customers at each event completing the survey were provided a free CFL sample.

### **Evaluation:**

Over 215,000 people visited the PowerSaver information booths at summer festivals. More than 10,000 compact fluorescent lights (CFLs) were given away and just under 14,000 energy efficient products were sold at the PowerSaver information booths.



<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings kW</b>	<b>Cumulative Lifecycle kWh</b>
PowerSaver Tour (23,969 products)	314	3,170,923	8.2	17,981,316

## Residential: Keep Cool

*Over 2,000 operational room air conditioners were removed from service and disposed of in an environmentally responsible manner.*

### Description:

The Keep Cool program is geared to removing old, but still operating room air conditioners (RACs) from service. It was developed by the Clean Air Foundation and run in conjunction with several utilities in 2006.

### Design and Delivery

Networks engaged the Clean Air Foundation to carry out the Keep Cool program under a turn key contract, which ran for three weekends from June 10<sup>th</sup> to June 28<sup>th</sup>, 2006. An integrated marketing communication campaign was launched to reach electricity customers in the participating communities and inform them of the timeline for the program. People interested in the program brought their old RACs to one of the participating Home Depot or Home Hardware stores, where Clean Air representatives would collect the old units. After having filled a survey regarding the Keep Cool campaign awareness and cooling preferences, participants were given \$25 store gift card.

The program ran in Home Depot stores in York Region (Aurora and Newmarket), Owen Sound and Brockville, and also at 5 Home Hardware stores in eastern Ontario (Smith Falls, Carleton Place, Perth, Kemptonville and Almonte).

### Intent

The intent of the program was to shave summer peak demand by encouraging customers to retire old and inefficient RACs and by offering \$25 retailer gift cards.

### Evaluation

Hydro One was successful in promoting the program to its customers. In total, Hydro One retired 2,036 room air conditioners.

Program	LTD Spending to Dec 2006 (\$K)	Cumulative Annual Savings kWh	Cumulative Annual Savings kW	Cumulative Lifecycle kWh
Keep Cool (2,036 units returned)	221	1,649,160	2,071	6,596,640

## Residential: Every Kilowatt Counts

*Over 3.5 million energy efficient products were purchased with coupons in 2006, over 20% by Networks' customers.*

### Description:

In 2006, the OPA assumed responsibility for the residential coupon initiative developed and implemented by Networks and the CLD in 2005. LDC participation increased to 80 in 2006 from the initial 27 and made available to all Ontario retailers, with over 3,000 stores taking part. Through this campaign Networks customers in Ontario received educational material on energy saving together with coupons for the purchase of energy efficient equipment.

### Design

The Every Kilowatt Counts campaign was rolled out in two phases: the Spring campaign ran from May to August 2006, while the Fall campaign was available from October 1<sup>st</sup> until November 30<sup>th</sup>, 2006. Educational booklets were mailed directly to all residential customers along with coupons for related energy efficient products that could be redeemed at retail outlets across the province.

### Intent:

The objectives of this program were:

- Provide homeowners or tenants with brochures on how to easily save energy in their home or apartment;
- Provide incentives to homeowners and tenants to purchase on one or more of the easy-to-do products identified in the campaign
- Achieve savings in terms of kWh and kW

### Delivery:

Networks was actively involved in co-promoting the campaigns, providing direct mail data for its customers base to the OPA for addressing of the coupon books and co-branding them to encourage customer participation. Networks also advertised the program in newspaper ads, on its website, and produced bill messages to customers to promote the program. Pre-program and post-program surveys were conducted in April and June 2006, and the results were analyzed with respect to awareness and energy savings.

### Evaluation:

Results for the coupon program continued to be robust in 2006, with products purchased exceeding 3.5 million across the province. Networks estimates that approximately 20% of the coupons redeemed were for products purchased by its customers (or 727,000 products).

Program	LTD Spending to Dec. 2006 (\$K)	Cumulative Annual Savings kWh	Cumulative Annual Savings kW	Cumulative Lifecycle kWh
Every kW Counts (727,000 products)	117	63,671,170	1,165	382,067,926

## **Residential: Low Income Program - CMHC / NRCan**

*Up to \$3,000 is available to low income home owners for energy efficient upgrades and retrofits.*

### **Description:**

Networks is offering up to \$3,000 to qualifying low income households to be used towards upgrades and retrofits to the home designed to achieve electrical energy savings. These funds are to be used in conjunction with the funds and services that are available from Canada Mortgage and Housing Corporation's (CMHC) Homeowner Residential Rehabilitation Assistance Program (RRAP) and Natural Resources Canada's (NRCan) EnerGuide for Houses Program. Combining the three programs was intended to help achieve maximum energy savings in low-income households in Networks' service territory and create synergies in the administration of the program. This was the first program of its kind in Canada, and was the first to bring the EnerGuide for Houses program to the low-income sector. Unfortunately, in May 2006 following a change in federal government, the EnerGuide for Houses program was cancelled. The arrangement remains intact for the almost 50 houses that had already received an EnerGuide audit but no further houses are eligible.

### **Design:**

CMHC processes applicants through their RRAP program, which includes criteria to determine low-income status. Qualifying applicants then receive a health and safety assessment of their home, as well as an EnerGuide for Houses energy audit to determine the energy efficiency of their home. RRAP funding for health and safety retrofits is offered to the qualifying applicant and Networks' funds are used for energy improvements identified in the EnerGuide audit.

Networks funds the electricity improvements up to \$3,000 per home. NRCan funds the EnerGuide for Houses audits, one before and one after improvements are implemented, valued at \$300 - \$500 total.

(The NR Can program was cancelled in May 2006 thus curtailing any new applicants into the program. Existing applicants were allowed to complete their retrofits and receive their funding.)

CMHC processes applications, including screening for adherence to low income criteria, and handles all correspondence with the customer. RRAP does not fund energy efficiency improvements.

### **Intent:**

The objective of this program is to assist low income homeowners in contributing to and benefiting from conservation. Low income customers tend to have a higher prevalence of electric water heating and electric heating in their homes and they spend proportionately more of their disposable income on energy costs. Low Income customers also have fewer means to improve the efficiency of their homes and would not otherwise have had access to the EnerGuide for Houses program.

**Delivery:**

All aspects of the program are delivered under the RRAP structure. Vehicles used to promote the program have included various social agencies and municipal and provincial government agencies dealing with social and housing issues. Networks also directed customers with payment issues to the program.

**Evaluation:**

The program took nine months to negotiate contracts with two different arms of the federal government. The negotiations took place between January 2005 and September 2005, with the program launch in September 2005. Reaching the target audience and getting them to come forward was a challenge as this is a group not easily defined or self identified. Almost 50 applications had been received by the time the EnerGuide for Houses program was cancelled. Of those, approximately 30 customers had their pre-retrofit audit, 14 of whom had their retrofits completed and received their payments by December 31, 2006. It is expected most of the remaining customers will complete their retrofits in 2007.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Lifecycle kWh</b>
Low Income Program (14 customers )	47	117,793	2,944,825

## **Residential: Low Income – First Nations Pilot**

*Establishes a viable approach to the delivery of electricity efficiency retrofits and education in First Nations communities.*

### **Description:**

The First Nations Energy Conservation Project provided an integrated approach to energy conservation at the Chippewas of Georgina Island First Nation reserve, encompassing conservation education and housing retrofits. The Chippewas of Georgina Island First Nation was selected for the pilot program due to the community's location and its demonstrated knowledge and receptiveness to issues of conservation and renewable energy. In this community, Hydro One identified a total of 91 homes eligible for this program. Hydro One assigned the delivery of the program (audit, effectiveness studies and retrofit) to Windfall Ecology.

### **Design:**

The goal of this pilot program was to assess and improve the energy efficiency of the entire community. The First Nation Energy Conservation Project was comprehensive, addressing appliances, hot water, lighting, building envelope, and heating systems. The delivery process consisted of 3 phases with an education component running throughout the duration of the project:

Phase I – Auditing and installation of basic energy conservation measures;

Phase II – Installation of extended energy conservation measures;

Phase III – Verification and evaluation

All houses in the community were to be provided with education, basic energy efficiency measures and a home energy efficiency audit. The audit data for electrically heated homes was assessed with a TRC evaluation tool developed by the Program Manager, Windfall Ecology Centre, in cooperation with Green Communities Canada, to determine if extended measure retrofits were justified.

### **Intent:**

The objective of the program was to lower the disproportionate energy burden faced by the First Nation community and pilot a community approach. This objective was also in line with the Ministerial Directive to reduce energy consumption in low income housing.

### **Delivery:**

Windfall Ecology Centre, who had worked with the community over a period of time, was contracted to deliver all aspects of the program. The cancellation of EnerGuide for Houses caused some delay while Windfall pursued alternative audit funding. The OPA came on board to fund the audit portion and to expand the educational component of the program.

**Evaluation:**

There were ninety-one houses belonging to the Chippewas of Georgina Island First Nation. Seventy homes received the basic energy conservation measures and a home energy efficiency audit, eleven houses had been abandoned due to their poor condition and ten residents declined to participate. The basic measures, including compact fluorescent light bulbs, water heater pipe wrap, low flow showerheads and faucet aerators contribute an average annual savings of 256 kWh/year from each home. Fifteen electrically heated homes benefited from extended conservation measures aimed at the building envelope (attic/basement/crawl space insulation and comprehensive air sealing).

As a result of both the basic measures and the retrofits, a 5% reduction in community electricity usage was achieved. Retrofits accounted for 79% of total savings and basic measures 21%.

Retrofits for a number of houses did not quite pass TRC. The IPSP identifies a number of additional factors that are not reflected in the current avoided cost factors, which also do not place any value on winter peak demand reductions. Adjustments to the avoided costs to reflect the IPSP may result in these retrofits passing TRC. It is important that avoided costs be kept up to date so that positive savings opportunities are not forgone.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings KW</b>	<b>Cumulative Lifecycle kWh</b>
Low Income – First Nations Pilot (70 homes)	58	163,783	3	2,209,686

## **Residential: Social Housing Program**

*The social housing sector is in great need of asset renewal. However, because tenants, for the most part, do not pay their own hydro costs, there is little incentive for tenants to conserve. The Social Housing Program is an effective tool in significantly reducing energy costs of buildings and educating tenants in the wise use of energy.*

### **Description:**

This program builds on the success of the Social Housing Pilot Program launched in 2005. That pilot program consisted of three social housing providers in Networks' service territory, representing 750 units that participated in a program to improve the energy efficiency of their buildings. Networks contributed a total of \$550 per unit. The pilot program funding included \$50 per unit towards audits and up to \$500 per unit for the implementation of measures designed to achieve electrical energy savings (\$450 per unit), as well as energy awareness training (\$50 per unit). The pilot program was well received by the participating housing providers. Only minor administrative changes were required for the full program that was rolled out across the province in 2006. This program, called The Green Light Initiative, is part of the Social Housing Services Corporation (SHSC) Energy Management Program.

### **Design:**

The SHSC Energy Management is a comprehensive turnkey program designed to improve the energy efficiency of social housing properties in Ontario. Eligible program participants will have an on-site energy audit conducted and will use these findings to generate an implementation plan for their buildings. SHSC will review the plans and will then develop a funding plan for the properties' retrofit, utilizing both public and private funding. The social housing property managers and their respective boards approve the energy improvement plan and then the energy efficiency measures are carried out.

### **Intent:**

The objective of this pilot is to assist social housing providers increase the energy efficiency in their housing stock resulting in lower electricity bills, which for the most part are paid by the providers. This fact typically leaves tenants unaware of the benefits of energy conservation. Social housing properties tend to be older and often lack the funding to pursue measures to improve their energy efficiency.

### **Delivery:**

All participants in the pilot must be qualified by the SHSC. Once qualified, the properties receive an on-site energy audit. The results of the audit are made available to the property managers to use in the development of an energy management plan. This plan must be approved by their municipalities or boards before it is presented to the SHSC. The SHSC develops a plan to secure funding for the retrofits to be accomplished, leveraging both public and private funds. Networks is offering up to \$550 per unit for social housing properties in Networks' service territory.

### **Evaluation:**

Energy audits have been conducted for 13 housing providers, representing 1712 units in Networks' territory. A unit is a home or apartment within the building. The majority of the 13 participating housing providers have developed their energy management plans and are currently in the process of installing the approved measures as outlined in the energy audits.



The recommended energy saving measures have varied from standard items such as the accelerated purchase of energy efficient refrigerators, the installation of energy efficient lighting in common areas or the installation of programmable thermostats in the individual units. There have also been some innovative solutions such as the proposed installation of exterior solar walls to offset building heating costs.

At year end two housing providers with a total of 42 units had completed installation of energy their efficiency measures.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Lifecycle kWh</b>
Social Housing (42 units completed)	393	12,502	109,239

## **Residential : Communication and Education**

Communication and education (C&E) are integral parts of every program delivered by Networks, the costs of which are incorporated into program budgets. In addition to such program specific C&E, Networks also undertakes general awareness C&E on an ongoing basis and a limited number of directed C&E programs. In 2006 Networks appeared at many forums, trade shows and community events to discuss conservation and demand management and our programs and provided educational material in various bill related communications. In 2006, directed C&E programs included the SmartPack Education Initiative, the Turn Out the Light Campaign and grants to education based organizations.

### **SmartPack Education Initiative**

The initiative was developed in 2006 and is scheduled for delivery in 2007. The SmartPack Education initiative is targeted to Grade 5 students as they cover the energy component of the prescribed science curriculum. This initiative will encourage elementary school students and their households to adopt energy conservation practices within Hydro One Networks' service territory.

The SmartPacks, which are backpacks containing energy efficiency measures, such as CFLs, low flow shower heads and LED night lights, will supplement the energy efficiency curriculum being taught in public schools for the fifth grade. The energy efficiency components will provide the students with hands-on experience in installing and using the energy- and water-saving devices contained in the kits.

Not only will the SmartPack Program foster a culture of conservation among the students and their families, it will lead to real energy savings in the student's homes. A total of 5,500 SmartPacks will be distributed through 405 teachers located in 260 participating schools.

### **“Turn Out the Light” Campaign**

Networks co-sponsored a 30-second public service announcement that features Nelly Furtado and a small army of children dancing down a school hallway reminding schools and families to conserve electricity by turning off unnecessary lights. The announcement will begin appearing this summer on television stations across the province.

### **Grants:**

Networks also provided a grant to the Environmental Earth Angels for the Student Energy Challenge. The program is designed to teach students about their consumption behaviour at school and at home. It demonstrates that simple changes in behaviour can reduce energy consumption, energy bills and the burning of fossil fuels. The program is directed at Grade 5 students and provides a hands-on teaching module.

Networks also provided a grant to the Simcoe County Board of Education in partnership with several area LDCs. The grant was used for the development of teaching materials for the Grade curriculum and training of Science teachers in the delivery of the Energy modules.

### **EnviroGirl – TVOKids**

In 2006 Hydro One Networks also entered a partnership with TVOKids to create a character, EnviroGirl, who is a champion of the environment. There are a series of video shorts on conservation and the environment that will play on the air and are available on the internet, related tip sheets and a multiplayer game. Although this is a corporate sponsorship and not funded from CDM funds, CDM staff consulted with TVOKids on content for all the materials.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Lifecycle kWh</b>
Communication and Education	463	286,578	1,146,312

## Commercial / MUSH: Municipal Traffic Signal LED Retrofit Pilot & Program

*Municipalities have recognized that conversion of their traffic signals to LED technology makes good business sense. Benefits include both reduced electricity consumption as well as reduced maintenance costs.*

### Design:

LED lights provide significant energy savings and substantially increased life expectancy which reduces overall maintenance costs. Networks provided monetary incentives to a pilot municipality, the City of Owen Sound, who worked with Networks to assess the costs and savings associated with the retrofit of traffic signals from incandescent to LED technology. These cost and savings were used to establish the TRC inputs and the fixed monetary incentives available under the full program.

### Intent:

This program is designed to achieve energy conservation savings (reduced energy consumption in kilowatt hours). Currently, municipalities in Hydro One Networks' territory utilize inefficient incandescent traffic signal bulbs on a wide scale. LED signal lights are considerably more efficient, and Hydro One, through this program, will provide monetary incentives in order to facilitate earlier adoption of this technology.

### Delivery:

The first phase of this program was the execution of a pilot project in Owen Sound. The pilot served to validate the actual savings of retrofitting traffic signals. The program was then offered to all municipalities in Hydro One Networks distribution territory.

Municipalities were able to apply to Hydro One through both traditional applications as well as an online process. Hydro One supported municipalities in making their business case through useful tools such as the online energy savings calculator for traffic lights.

At year end, a total of 19 municipalities had applied to the program. This program is being marketed directly to municipalities' through direct mail campaigns. Hydro One also promoted this program at relevant conferences. Promotion in relevant trade magazines was also part of the overall marketing strategy.

### Evaluation:

At year end, one municipality (Owen Sound) with 402 traffic signals had completed their retrofit under the program, saving approximately 185,396 kWh annually. As well, a total of 19 municipalities had applied to Networks for program funding, all of which have been approved.

Program	LTD Spending to Dec 2006 (\$K)	Cumulative Annual Savings kWh	Cumulative Annual Savings kW	Cumulative Lifecycle kWh
Municipal LED Traffic Light (402 traffic signals)	37	185,396	21	1,870,103

## Commercial / MUSH: Cool Shops

*250 energy efficiency audits were carried out for small business establishments.*

### **Description:**

Cool Shops is a program developed by the Clean Air Foundation whereby electrical distribution utilities fund free audits for small businesses in their service territory. Businesses are provided with some complementary energy efficient products (such as CFLs and LED exit sign lights) and the opportunity to order other energy efficient products through a discounted order form (30%-80%, in association with Home Depot).

### **Design and Delivery**

Networks ran Cool Shops in conjunction with the PowerSaver Tour, as part of a turnkey contract. Tour representatives stopped at small businesses along their route and visited businesses near each event location. Business associations were advised in advance when the representatives would be in their area.

### **Intent:**

The main objectives of this integrated Mass Market campaign were to:

- Promote business customer education and contribute to culture change
- Improve the energy efficiency of small businesses within Hydro One Networks rural territory

### **Evaluation:**

Before the delivery of the program a target of 225 audits was set, and the objective was exceeded.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings kW</b>	<b>Cumulative Lifecycle kWh</b>
Cool Shops (250 audits)	42	154,231	8	1,336,522

## **Commercial / MUSH: Toronto Region Conservation Authority Programs**

*Municipalities, schools and hospitals are looking for innovative ways to reduce costs as they work within very confined budgets. Benchmarking is a good tool to illustrate facility energy consumption.*

### **Description:**

Networks is participating in four energy initiatives being led by the Toronto Region Conservation Authority (TRCA) as part of their Community Transformation Programs. The programs will target municipalities, hospitals and schools. Bench marking is a common component for all program participants to drive action. The projects in which Networks is participating include:

- The Mayor's Megawatt Challenge – identifies actions that can be taken to achieve energy savings in municipal buildings and single pad arenas
- Greening Health Care – encourages hospitals to work together to achieve optimal energy savings
- Sustainable Schools – identifies best practices in green design, commissioning and operations, enabling school boards to improve the energy performance of schools
- Archetype Housing Design Competition- this design competition engages architects, engineers and graduate students from across Canada to design a mass production Green Home for new community development. This component is separate from the ones described above and is funded from the education portion of the Hydro One CDM portfolio.

### **Design:**

The majority of the initiatives are comprehensive programs which include initial needs assessments, recommended initiatives to achieve savings, in addition to web-based applications to facilitate independent monitoring and benchmarking of performance to ensure savings are achieved. A key element of the program is the facilitation of information sharing among members so that best practices can be identified.

### **Intent:**

The purpose of Networks involvement in the TRCA programs is to demonstrate support of community-based programs, as well as foster co-operation with municipal local distribution companies.

### **Delivery:**

All elements relating to the delivery of programs is co-ordinated by the TRCA.

### **Evaluation:**

- The Mayor's Megawatt Challenge - Work is underway and one Hydro One municipality has enrolled in the program. Facility assessments are underway; however individual projects have not progressed to the evaluation stage.
- Greening Health Care – Discussions are underway with one hospital corporation representing two hospitals located in Hydro One territory. It is expected that they will be enrolled early in 2007.

- Sustainable Schools – Four schools have enrolled in the program. Facility assessments are underway; however individual projects have not progressed to the evaluation stage.
- Archetype Housing Design Competition- A winning design was chosen in June of 2006, which incorporates LEED - gold and Energy STAR for New Homes environmental ratings.

## **Commercial/Industrial: PowerSaver Business Incentive Program**

*For many, in this customer segment, energy conservation projects take a back seat to the “business” of operating a business. The PowerSaver **Business Incentive Program (PBIP)** brings awareness of the benefits of energy efficiency retrofits to the market place. This program can be characterised as a catalyst for customers to reprioritize their energy retrofits and to proceed with implementing them.*

### **Description:**

This program provides up to \$50,000 in financial incentives per customer to all business, institutional and farm customers that undertake energy efficiency retrofits in their facilities in order to increase their energy efficiency and lower their costs. Incentives for technologies such as lighting, motors, cooling equipment and energy efficient transformers are provided to this customer group.

### **Design:**

The program consists of fixed financial incentives for predefined technologies, as well as financial incentives for custom projects that are based on demand reduction. This program was designed to be application based and incentives are paid once retrofits are installed and operational. Qualifying customers must obtain pre-approval for all custom applications. However qualifying customers have an option of providing an application with proof of purchase and installation after project completion for certain technologies. This design element was intended to influence customer energy efficiency projects that have a very short timeline; where pre-approval is not practical. It also is intended to influence customer equipment purchases that are typically unplanned such as replacement motors.

### **Intent:**

This program addresses the need for a comprehensive CDM program targeted at the commercial, industrial, MUSH and farm sector. Segments within these sectors contain a large potential for energy conservation savings (reduced energy consumption in kilowatt hours). The intent is to promote earlier adoption of energy efficient technologies and to influence purchasing decisions for all customers undertaking retrofits of their facilities in order to reduce their overall demand and electricity consumption.

### **Delivery:**

Direct marketing campaigns were utilized to deliver this program to Networks' customers. Media advertising was also used to reach key customer segments. The program is designed to direct all customers to Networks self-serve website. The interactive website is configured to provide all of the necessary applications and forms the customer requires in order to apply to the program. The site also contains useful tools such as incentive calculators, technical guides, program guideline booklets, presentations, fact sheets and more.



Other marketing initiatives consisted of running workshops, engaging trade allies such as electrical distributors and key channel partners, such as government and industry associations. This was accomplished through face to face meetings with all of the organizations afore-mentioned as well as meeting with key customer groups.

**Evaluation:**

Applications have been received for approximately 18 projects of which 13 were approved. None of the 13 approved projects had progressed to the completion or evaluation phase by December 2006.

## **Industrial: Industrial Energy Efficiency Assessments**

*This is a systemic approach to assisting commercial and industrial customers to identify energy efficiency opportunities. As an information based project this has performed relatively well, but we have found an incentive based program such as PowerSaver Business Incentive Program ( PBIP) is more effective and responsive to our customers' needs.*

### **Description:**

The first phase of this pilot project uses the energy diagnostic tool, *One-2-Five Energy Diagnostic*, to provide customers with an assessment and benchmarking report of their current energy management practices. Thirteen of Networks' large distribution connected industrial customers had this interactive workshop performed on their premises. This workshop provided the customer with information on their energy management practices in relation to the company's own operating costs and to other similar industries, as well as suggestions on key areas for improvement and an estimation of potential energy cost savings.

The second phase of the pilot includes further detailed on-site assessments to identify specific energy efficiency measures to develop a work plan.

### **Design:**

Each participating customer has received a diagnostic report, a benchmarking report, as well as an indication of the level of savings that can be achieved in their facility. We have also secured agreement from three of thirteen customers to proceed with the second phase which includes a more in-depth energy review to identify on-site key energy savings opportunities and the development of an action plan. Once the detailed audits are completed, a repeat diagnostic session will be conducted and the next steps to take are developed, as well as a success story summarizing the improvements that have been made.

### **Intent:**

The objective of this program is to enable large industrial customers (above 2MW) to contribute to and realize savings from conservation and demand management in their facilities. Different customer types, including forestry, food and beverage, automobile and processing have been targeted so that the findings can be used to target and develop future CDM programs.

### **Delivery:**

The vendor has concluded the phase one of this pilot by completing diagnostic sessions for 13 selected customers. Three customers have agreed to engage in the phase II of the pilot to undertake detailed on-site energy audits in order to develop an actionable work plan.

**Evaluation:** 13 Industrial customers have completed their initial assessments (10 completed in 2005 another 3 in 2006). In addition, 3 customers agreed to engage in the second phase of the pilot by undertaking detailed on-site energy audits. The detailed assessments are currently being conducted and are expected to be completed in the spring of 2007.

## **Industrial: Interim Time of Use Pilot**

### **Description:**

The pilot offers customers rate incentives through the application of rates that help to shift electricity demand away from periods of maximum demand and into the off-peak periods. Depending on the difference in demand between the two time periods, customers could realize substantial savings in their distribution bills. Networks currently has three customers participating in the pilot.

### **Design:**

Hydro One Distribution received approval from the Ontario Energy Board to implement distribution time of use rates for customers whose off-peak demand consumption (kW) was at least twice their on-peak demand consumption. The demand rate is set to zero for the off peak period defined as 7pm to 7am Monday to Friday, and all day on weekends and holidays.

### **Intent:**

Determining if customers will modify their consumption patterns to take advantage of time of use rates will indicate whether Distribution charges are an impediment or a significant factor, as compared to the generation component, in promoting load shifting by customers. Encouraging commercial and industrial customers to shift their demand away from the peak will benefit both those customers and the electricity system as a whole.

### **Delivery:**

Customers whose operation patterns qualify for the interim time of use rate will be eligible to participate in the pilot. Their demand in the off peak hours must be twice that in the on peak period.

Once the customer is qualified, the appropriate metering is installed (e.g. interval meter). Consumption patterns will be reviewed to ensure that the customer continues to meet eligibility criteria.

### **Evaluation:**

While there has been some interest in learning about the details of the time of use rate by several companies, no additional customers have yet been willing to modify their operation patterns in order to qualify for the interim time of use rate. Early indications are that the distribution component of electricity rates is a not significant enough factor in the customer's total cost structure to warrant such changes to operating procedures.

## **Industrial: Demand Response Program (Double Return)**

*This is a unique demand response program that attempts to not only reduce the system's peak load but also provide customer visits and energy efficiency education to create a general awareness of conservation benefits. The customers participated in the program's first winter season at a higher than expected rate with exceptional results.*

### **Description:**

The Double Return program was launched in November 2006. The objective of the program is to reduce summer and winter peak demand in commercial and industrial facilities by up to 25 MW. The target customer group consists of approximately 750 interval meter accounts with an aggregate monthly peak load in excess of 1000 MW. To qualify for incentives, the customers need to reduce their average peak demand by at least 5% to 10% during winter and/or summer peak months.

### **Design:**

All Hydro One commercial and industrial distribution-connected customers with interval meters are eligible and therefore automatically enrolled in the program. To qualify for incentives, the participants need to achieve a minimum of 5% to a maximum of 10% peak load reduction against the corresponding monthly peak loads in the previous year. The target months in the program are December to February for the heating season and June to August for the summer.

The incentive payments are equal to double the amount of reduction in distribution charges on the customer's bill resulting from achieving a minimum of 5-10% reduction in their peak load. For every distribution dollar the customer saves by reducing their peak demand, the program will provide two dollars in incentive payments (i.e. "save once get paid twice").

The defining characteristic of this initiative is the simplicity of its design. Since this customer group's electricity usage is not highly weather sensitive, the incentives are calculated based on actual peak load reductions (not weather normalized data) to make it easier for the customers to set targets and take action. There is no need to complete any application forms; the interval metered customers are automatically enrolled in the program. The only demand made on the participants is to reduce their own peak demand to qualify for incentives.

### **Intent:**

The program goal is to reduce the distribution system peak demand by up to 25 MW in both winter and summer seasons while raising awareness and promoting a culture of conservation.

### **Delivery:**

The unique feature of this demand response program is its heavy emphasis on customer education and technical assistance to enable them to reduce their peak load. The services offered to the participants include a customized individual webpage for each customer, free walk-through audits, energy efficiency workshops, employee engagement kits, and local media advertising to acknowledge customer achievements.

The key components of the program such as marketing, education, customer service/visits, and call center activities are professionally handled by a number of specialized vendors. The program implementation team includes Summerhill Consulting Group (marketing), Kinectrics Inc. (customer visit and technical audits), Marcom Group Inc. (individual customer webpage development and operations). All activities are directly overseen and coordinated by Hydro One.

**Evaluation:**

The participants have so far shown overwhelming enthusiasm for the program and the preliminary winter results are indicating higher than expected load reductions in excess of 30MW for its first season. This is not counted in 2006 results since the winter program operated from December 1, 2006 to the end of February, 2007. The customers are also showing genuine enthusiasm for the customized webpage and the face-to-face site visits. These customers have traditionally been left to their own devices to reduce their energy costs. This program has come as a pleasant surprise to many, and they are responding with keen interest.

Since this program commenced in December 2006, the actual results and costs will not be reported until 2007. This program is designed to be highly cost-effective at \$200/kW, with an estimated total resource benefit cost ratio of 6.0.

## **Common: Distribution System Loss Reduction**

*Reduces distribution line losses, directly benefiting all Networks customers as well as reducing provincial demand during peak demand periods.*

### **Description:**

The Distribution System Loss Reduction Program involves identifying and implementing projects where incremental investments will result in an overall economic benefit to customers by reducing system delivery losses.

### **Design:**

A research report was commissioned in 2005, updated in 2006 to better reflect the distribution system, to identify the areas where Networks could pursue projects that would economically reduce system delivery losses. Identified opportunities are in the areas of power factor correction (by installation of capacitor banks) and feeder phase balancing.

### **Intent:**

Lowering distribution system delivery losses will reduce overall system demand and it will also provide additional network capacity for growth. System delivery losses are currently passed onto all customers; therefore, improvements in this area will benefit all customers.

### **Delivery:**

Distribution line studies are undertaken to determine which lines require power factor correction, what size capacitor bank is appropriate, the proper location for the capacitor bank and to establish any phase balancing that may be required. Following the study period, capacitor banks are purchased and installed, with any line balancing taking place at the time of installation. All work is carried out with Networks staff.

### **Evaluation:**

By December 31, 2006 almost all necessary studies had been completed. Purchasing, installation and phase balancing activities will commence in 2007.

## **Farms: Farm Energy Efficiency**

*A cooperative relationship has been established among the key organizations concerned with energy farm energy efficiency, which has led to the implementation of general product incentives applicable for farm activities as well as agriculture specific products and to the provision of related education material.*

### **Description:**

Networks has undertaken several initiatives to assist the farming community with electrical conservation and efficiency. These initiatives included conducting energy audits, producing informational material, as well as the signing of a Memorandum of Understanding (MOU) with the Ministry of Agriculture, Food and Rural Affairs, Ontario Power Authority, Ontario Ministry of Energy and the Ontario Federation of Agriculture, to co-operate with the development of agricultural energy efficiency initiatives.

### **Design:**

As with other aspects of this CDM program, Networks' approach to farm energy efficiency has been to seek out beneficial partners wherever possible. This has led to many co-operative efforts with the Ministry of Agriculture, Food and Rural Affairs, Ontario Power Authority, Ontario Ministry of Energy and the Ontario Federation of Agriculture, as well as other parties. These efforts contributed to the design of the prescriptive portion of the PowerSaver Business Incentive Program (lighting and motors). The prescriptive portion has been expanded to include a number of agriculture specific products.

### **Intent:**

The objective of the Farm Energy Efficiency Program is twofold: to offer the farming community the information and the tools necessary to realize savings in the energy consumption of their farms, and provide customers with incentives for moving to energy efficient agricultural technologies.

### **Delivery:**

Co-operative efforts commenced with a series of energy efficiency audits of dairy, poultry and swine operations. These efforts involved the development of audit software, tools and training materials, as well as the execution of the audits.

Assessment of the audits and the state of the industry led to the development of informational material to increase farmers' knowledge and awareness of efficiency improvements that could be applied to their operations. Fact sheets, educational television segments, as well as informational DVDs were produced.

Advertising for the PowerSaver Business Incentive Program geared towards agriculture customers is being conducted by Hydro One and its MOU partners at relevant conferences and through agricultural publications.

**Evaluation:**

The farm videos and Fact Sheets have been well received at conferences and are available via the internet. The PowerSaver Business Incentive Program was launched in the latter part of 2006 and already has paid out its first farm related incentive. Significant uptake is expected in 2007.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Annual Savings kW</b>	<b>Cumulative Lifecycle kWh</b>
Farm Energy Efficiency  (35 audits, 1 retrofit project)	114	64,000	9	408,009



## **Other: Smart Meters**

*Paperless change meter processes for the large scale deployment of smart meters have been successfully developed and field tested.*

### **Description:**

The provincial government has set targets for installing smart meters in the homes of all Ontario residents by 2010, with the first provincial target of 800,000 smart meters by 2007. Networks is taking a leadership role in the implementation of smart meters.

### **Design:**

The MARR funding for Smart Meters was intended to cover the development of business process activities related to meter installations. With the passage of Energy Act, Bill 21, Networks was able to restart the project with a pilot program in East Gwillimbury to test meter installation processes using some of the 25,000 meters purchased in 2005. Networks began installation of Smart Meters in York Region and by December 2006, had installed 28,000 residential meters.

### **Intent:**

The government's stated intent is that smart metering provide the ability to record consumption in time intervals that can be matched to price signals which differ throughout the day to reflect the true cost of power. Understanding and reacting to proper pricing is an essential component to creating a conservation culture and managing customer demand. The largest benefit of smart meters is providing customers with the ability to understand their consumption patterns so they can make effective decisions on usage.

### **Delivery:**

Although Networks has installed about 28,000 residential meters, only 19,500 were funded through CDM. More importantly, Networks implemented a paperless change meter process where service information (e.g. change meter request, GPS, barcode, store old meter reading in the new meter, etc.) can be exchanged between head office groups and field staff automatically resulting in a faster and more efficient process for mass meter deployment. Previously, the change meter process was done manually via paper records.

### **Evaluation:**

The government has not provided estimates for kWh savings and has not required the reporting of benefits for smart metering. The Smart Meter program approved by the OEB in 2005 as part of the overall CDM initiative was \$1.4 M in OM&A and \$6.4 M in capital for a total of \$7.8 M. About \$0.5 M of the approved amount was spent in 2005. Consequently, the 2006 expenditures of about \$7.3 M represent the remaining portion of the OEB's approval. Approximately 19,500 meters have been installed in 2006 through the CDM funding. Also included in the 2006 cost are expenditures for developing and implementing the overall smart meter strategy; readying the AMR and billing systems and customer communication.

<b>Program</b>	<b>LTD Spending to Dec 2006 (\$K)</b>	<b>Cumulative Annual Savings kWh</b>	<b>Cumulative Lifecycle kWh</b>
Smart Meters (19,500 meters installed)	7,800	n/a	n/a

## Other: Program Management and Research

A portion of Networks' project management and research budget has been spent on commissioning reports and sponsoring studies related to conservation and demand management. The results of these studies are being used to assist in program development and for further understanding the scope of conservation and demand management.

Some of the studies that Networks has commissioned, participated in, or funded to date include:

- Avoided Cost of Generations Study
  - Prepared by Navigant
- Distribution Loss Reduction Strategy
  - Prepared by Kinetrics
- Residential Appliance Survey
  - Networks surveyed residential, seasonal and farm customers to determine equipment penetration rates and demographics in order to facilitate the roll-out of conservation and demand management initiatives that will benefit our customer base
- Hydro One Overview of Residential Customer
  - Prepared by Antim Consulting, filed as an interrogatory response in the CDM generic hearing
- Demand Management Potential
  - Prepared by Kinetrics, filed as an interrogatory response in the CDM generic hearing

Networks is a member of the Customer Energy Solutions Interest Group (CESIG) of CEA Technologies Inc. – members include many of the provincial utilities across Canada, Natural Resources Canada and the National Rural Electric Cooperative Association out of the United States. Networks has participated in funding several CESIG initiatives, including the testing of Energy Star CFLs and the preparation of a series of reference guides similar to the Product Knowledge Guide series originally published by Ontario Hydro. Guides completed or under development include Lighting, Motors, Compressors, Heat Pumps, Power Quality, Electrotechnologies, Fans and Blowers, et cetera. All guides will be made available on Networks website as they are published.

Incremental staff costs associated with managing the CDM portfolio are charged to Program Management. Consultant and contract labour associated solely with a specific initiative are charged directly to that initiative.

## Lessons Learned

Networks' efforts in Conservation and Demand Management have identified a number of lessons learned or key findings, which will be useful for Networks and others as CDM continues to evolve in Ontario.

Some of these findings are on a macro level, based on broader policy, structures and inter-relationships, while others are more program specific.

### Customer Feedback

- Customers, especially residential customers, respond well to non-monetary incentives and seem to be motivated by environmental concerns.
- CDM programs can be a powerful mechanism in changing customer behaviour and for encouraging development of innovative market transformation technologies, such as in-home displays.
- To run successful programs in small close knit communities, it is necessary to engage the community. Public events run in conjunction with local organizations provides an opportunity to become known to the community, to answer questions, promote the program and identify "early adopters" which are key to broad based participation.
- The use of skilled local contractors and trades people provides an additional level of comfort to participants and further enhancing the skill level of local people helps to retain expertise in the community, thereby extending the application of current energy efficiency techniques into the future and into additional houses.
- Bill Inserts are the most effective and cost-efficient method to reach customers. They are also very useful for targeted programs where advertising spill would be an issue.

### Program Management

- A turn key implementation approach for multifaceted or complex programs creates a clear understanding of where responsibility lies for all deliverables and results in a speedy resolution of any issues. This has been particularly useful in programs such as load control where promotion, enrolment, installation, and customer care are interdependent activities.
- For new and emerging technologies, or for new or high risk applications in the marketplace, pilots (such as for Load Control or In-Home Displays) and/or staged rollouts are very valuable in:
  - establishing the effectiveness of the device in either reducing energy consumption or shifting peak demand
  - refining logistics, incentive levels, and product selection,
  - assessing delivery channels, marketing and delivery costs,
  - determining customer acceptance and overcoming barriers to customer participation.
- Partnering with other organizations can bring existing skills and knowledge to bear and helps avoid duplicate or counter productive activities.
- The Hydro One service territory, due to its large size but low population density, is a difficult and less attractive one for retailers, suppliers and other partners to serve.

- Application based programs have a considerable “ramp up” time required to engage customers, educate them, and to receive & process applications, all of which is required before installations can take place. In many cases the customer business cycle does not always coincide with the LDC CDM cycle. Projects may take from 6-12 months or longer to design and implement.
- Program incentives levels need to be at sufficient levels in order to catch the customer's attention. Failure to set incentives at appropriate levels may result in capturing only early adopters and an inability to sustain any growth in customer participation numbers for a particular program.
- Trade shows and community events can be leveraged to take advantage of existing infrastructure in order to generate increased program awareness, customer satisfaction and corporate image. However, they are not cost-effective in generating energy efficiency product sales and quantifiable results.

#### Evaluation

- The assessment of conservation program success should be based on customer engagement and satisfaction as well as on numerical results.
- The Assumptions and Measures spreadsheet, which is used as the basis for TRC tests, should have its assumptions updated to reflect more current data and the breadth of measures expanded to cover additional products and services, especially those being promoted by LDCs.
- The assumption basis for TRC should provide value for winter peak, not only summer peak. Many local distribution systems, including Hydro One Networks, are winter peaking.
- The assumptions for avoided cost of generation used in the TRC need to be consistent with the IPSP assumptions. For example, the current TRC assumptions placed a zero value on avoided cost of generation for three years based on an earlier IESO forecast of sufficient generation capacity. These assumptions should be adjusted prospectively for 2007.
- Savings on distribution charges only are not sufficient to encourage commercial and industrial customers to modify operations to off peak time of use rates. The generation commodity costs are much more significant savings opportunity for customers than are distribution costs.

## Conclusions

As we ended 2006 a great deal of activity was underway.

Programs had been launched, and a number had been completed with results received.

- The Mass Market programs produced very positive results.
- The Residential In-Home Monitor program was underway and expected to be completed by the Spring of 2007. The Association of Energy Services Professionals (AESP) awarded their Energy Efficient Technology Deployment of the Year award to Hydro One and Blue Line Innovations (the manufacturer of the product) for the successful deployment of the Power Cost Monitor in northern Ontario.
- The PowerSaver Business Incentive program offered to all business customers started to gain momentum.
- The Low Income and Social Housing programs were launched and have become a model for other utilities to follow.
- The Cold Shoulder Appliance Pickup program had gained considerable participation levels which led to its expansion to all of southern Ontario in early 2007

Other programs were still underway and customers still being engaged.

Programs that are expected to launch or continue into 2007 include:

- completion of the residential real-time monitoring program
- continuation of the residential load control program (SmartStat)
- further outreach of the Low Income and Social Housing programs
- commercial and industrial lighting business incentive programs, including specific incentives to our Agricultural customers
- energy efficient motors
- line loss reduction studies have been completed in 2006 and the program will be implemented in 2007
- Smart Pack educational initiative for grade 5 students is under way, and will be delivered in April 2007
- various educational initiatives, including the launch of a 30-second public announcement featuring Nelly Furtado and an army of kids promoting energy conservation

A number of other program concepts are being developed and assessed to determine whether they are appropriate for our customers and our service territory, and which may lead to their introduction during the year.

We also move forward with some remaining uncertainties:

- the results of the Integrated Power System Plan (IPSP), and its consequences on LDCs; and
- the role of the Conservation Bureau (OPA) in the CDM arena, in the face of the LDC's need to deliver CDM programs

## **Appendices**

## Appendix A - Evaluation of the CDM Plan

	Cumulative Totals Life-to- date <sup>5</sup>	Total for 2006	Residential	Commercial / MUSH	Industrial	Agricultural	LDC System	Smart Meters <sup>4</sup>	Other
<i>Net TRC value (\$):</i>	\$ 45,522,850	\$ 42,148,388	\$ 43,390,416	\$ 85,611	\$ (43,980)	\$ 290,962	\$ (877,271)		\$ (697,350)
<i>Benefit to cost ratio:</i>	3.78	4.37	5.03	1.74	0.00	18.92	0.00		0.00
<i>Number of participants or units delivered:</i>	880,233	823,376	802,008	1,783		94		19,491	
<i>Lifecycle (kWh) Savings:</i>	635,951,041	556,082,271	552,467,637	3,206,625	0	408,009	0		0
<i>Report Year Total kWh saved (kWh):</i>	99,118,247	90,949,234	90,545,607	339,627	0	64,000	0		0
<i>Total peak demand saved (kW):</i>	10,629	9,948	9,910	29	0	9	0		0
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.20%	0.35%	1.45%	0.01%	0.00%	0.003%	0.00%		
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.0002%	0.22%	N/A	N/A	N/A	N/A	N/A		
<i>Report Year Gross C&amp;DM expenditures <sup>1</sup> (\$):</i>	\$ 20,430,910	\$ 16,543,910	\$ 7,148,353	\$ 97,378	\$ 438,385	\$ 4,173	\$ 877,271	\$ 7,281,000	\$ 697,350
<i>Expenditures per Lifecycle kWh saved <sup>2</sup> (\$/kWh):</i>	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.03	\$ -	\$ 0.01	\$ -		\$ -
<i>Expenditures per KW saved <sup>3</sup> (\$/kW):</i>	\$ 1,386	\$ 1,158	\$ 976		\$ -	\$ -	\$ -		\$ -
<i>Utility discount rate (%):</i>	5.73								

<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 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

A. **Name of the Program:** Residential In-Home Display Program

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

During 2006, Networks made 30,000 Power Cost Monitors™ available to residential customers in Northern Ontario. Customers use the Monitors to check and manage their electrical consumption in real-time. They are able to view their current usage rate and cumulative consumption in kWh, as well as an estimate of the cost of that consumption. Networks' initiative is the largest of its kind in North America.

**Measure(s):**

Monitors			
Base case technology:	Ave. 11,500 kWh/yr.		
Efficient technology:	750 kWh savings - ave. 6.5%		
Number of participants or units delivered for reporting year:	19,948		
Measure life (years):	5		
Number of Participants or units delivered life to date	19,948		

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**B. TRC Results:**

TRC Results:	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 5,532,223	\$ 5,532,223
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 11,102	\$ 11,102
Incremental Measure Costs (Equipment Costs)	\$ 3,534,788	\$ 3,534,788
Total TRC costs:	\$ 3,545,890	\$ 3,545,890
Net TRC (in year CDN \$):	\$ 1,986,333	\$ 1,986,333
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	1.6	1.6

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

**Cumulative Results:**

### Conservation Programs:

<i>Demand savings (kW):</i>	<i>Summer</i>	3,357	3,357
	<i>Winter</i>	10,005	10,005

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	74,047,076	14,809,145	74,047,076	14,809,145
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:**

Utility direct costs (\$):

Incremental capital:

Incremental O&amp;M:

Incentive:

Total:

**Reporting Year****Cumulative Life to Date**

\$	11,102	\$	11,102
\$	3,231,377	\$	3,231,377
\$	3,242,479	\$	3,242,479

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:

**E. Assumptions & Comments:**

Savings per participant of 749.9 kWh and 0.17 kW were based on the evaluation of the 2005 pilot program that found average savings were 6.5% of average consumption (ave.consumption is 11,500 kWh/yr. for Northern Ontario).

Customer equipment costs include cost of monitor, tax, and shipping, plus cost of annual replacement of batteries (2 AA).

Incentive costs include cost of monitor and tax.

Costs of \$107,500 were erroneously included as Real Time Monitor in OEB Q4 Report, and were moved to Cold Shoulder program for the 2006 Annual Report.

<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

A. **Name of the Program:** Residential Real Time Monitoring Pilot (2004-2005)

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

Objectives of this pilot were to assess residential customer behaviour and quantify potential energy savings arising from the provision of real-time energy usage and cost data. The real-time monitor is an in-home display device that receives a wireless signal from a sensor placed on the exterior electro-mechanical electricity meter. The study operated from July 2004 to August 2005, thus capturing both winter and summer peak periods. Customers were able to track their energy consumption (in kWh) and cost, and also receive instant feedback on actions taken.

### Measure(s):

	Measure		
Base case technology:	Ave. 16,176 kWh/yr.		
Efficient technology:	1051 kWh savings - ave. 6.5%		
Number of participants or units delivered for reporting year:	382		
Measure life (years):	5		
Number of Participants or units delivered life to date	382		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ -	\$ 127,038
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ -	\$ 463,411
Incremental Measure Costs (Equipment Costs)	\$ -	\$ 5,730
Total TRC costs:	\$ -	\$ 469,141
Net TRC (in year CDN \$):	\$ -	-\$ 342,103
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	0.0	0.3

C. <u>Results:</u> (one or more category may apply)			<u>Cumulative Results:</u>	
<u>Conservation Programs:</u>				
Demand savings (kW):	Summer	-	38	
	Winter	-	114.4	
			Cumulative	Annual
	lifecycle	in year	Lifecycle	Savings
Energy saved (kWh):	-	-	2,007,410	401,402
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):		
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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:

Incremental O&M:

Incentive:

Total:

\$	-	\$	463,411
		\$	3,060
\$	-	\$	466,471

Utility indirect costs (\$):

Incremental capital:

Incremental O&M:

Total:


**E. Assumptions & Comments:**

Evaluation report prepared by external consultant (Dean Mountain) found 6.5% average savings.

<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

A. **Name of the Program:** Residential Load Control (Smartstat)

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

Smartstat residential load control program was launched in July, 2006. This program is designed to achieve summer peak demand reduction by controlling air-conditioning (AC) temperature set-points using web-enabled programmable thermostats, and by cycling electric water heater loads using an off/on switch. The initial program objective was to achieve 6,000 installations in residential homes by June 1st, 2007. The initial target of 6,000 enrolments was achieved well ahead of schedule in December 2006 and as a result a new goal of 10,000 participants was adopted to be achieved prior to the upcoming summer.

**Measure(s):**

	Prog Thermostats	Tank Wrap/Pipe wrap	15 w CFLs	Load Control
Base case technology:	18,103 kWh/yr	5,000 kWh/yr	139 kWh/yr	
Efficient technology:	16,637 kWh/yr	4,730 kWh/yr / 4,924 kWh/yr	35 kWh/yr	
Number of participants or units delivered for reporting year:	1687	337	1,687	1,687
Measure life (years):	18	6	4	18
Number of Participants or units delivered life to date	1,687	337	1,687	1,687

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$)	\$ 2,782,836	\$ 2,782,836
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 620,434	\$ 620,434
Incremental Measure Costs (Equipment Costs)	\$ 179,289	\$ 179,289
Total TRC costs:	\$ 799,723	\$ 799,723
Net TRC (in year CDN \$):	\$ 1,983,113	\$ 1,983,113
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.5	3.5

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

**Cumulative Results:**

**Conservation Programs:**

Demand savings (kW):		Summer	145	145
		Winter	287	287

**Demand Management Programs:**

Controlled load (kW)	2,024	2,024
Energy shifted On-peak to Mid-peak (kWh):	430,689	430,689
Energy shifted On-peak to Off-peak (kWh):	217,535	217,535
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):		
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D. <b>Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	Incremental capital:	\$ 143,855	\$ 143,855.00
	Incremental O&M:	\$ 243,231	\$ 243,231
	Incentive (capital and O&M):	\$ 1,730,147	\$ 1,730,147
	Total:	\$ 2,117,233	\$ 2,117,233
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

Assumed that half of the customers already have a programmable thermostat (50% free-ridership) pending analysis. Load control events are assumed to shift load, but not to save energy. Energy savings come from the provision of two CFLs to all participants, as well as the tank wrap and pipe insulation of homes with electric water heaters. A \$40 value was assumed for the capability to control the thermostat via the internet. The assumed value of a basic programmable thermostat without the load control features was \$60, and installation value was assumed to be \$50. The "residual" cost of the programmable thermostats of \$200 represents the utility's direct cost for the load control capability. \$101 included in direct costs was the unit cost of the water heater switches. Direct costs also included the costs of marketing, enrollment, project management, and Canon's load management system. Costs of \$1.2 million have been excluded from the TRC for thermostats and switches purchased in 2006, but not yet installed. Direct program costs include switches for hot water heaters installed (but exclude switches in inventory). Direct costs also include the difference in value between the \$40 web access feature plus the \$110 installed cost of "basic" programmable thermostat, and the full cost of the installed thermostats (\$350) that included the load control features. Demand reduction of 0.5 kW for water heaters and 1.1 kW for cooling were based on the results from the pilot program.

<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

A. **Name of the Program:** Residential Load Control Pilot (2005)

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

The objectives of this pilot were to assess residential customer response and potential load impact of controlling central air conditioning, pool pumps, and electric water heating during system peak periods, through installations of load control units and interval meters. Controls were placed on 581 devices in 416 randomly selected homes in three HONI service areas (Kingston, Simcoe, Newmarket). The project ran from July 2004 to December 2005. Participants were paid a monthly incentive for their participation.

## Measure(s):

Base case technology:				
Efficient technology:				
Number of participants or units delivered for reporting year:	0			
Measure life (years):				
Number of Participants or units delivered life to date	416			

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ -	\$ -
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ -	\$ 739,976
Incremental Measure Costs (Equipment Costs)	\$ -	\$ -
Total TRC costs:	\$ -	\$ 739,976
Net TRC (in year CDN \$):		-\$ 739,976
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		0

C. <b><u>Results:</u></b> (one or more category may apply)		<b><u>Cumulative Results:</u></b>	
<b><u>Conservation Programs:</u></b>			
Demand savings (kW):	Summer		
	Winter		

**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:

Incremental O&amp;M:

Incentive:

Total:

-\$	29,418	\$ 669,520
		\$ 41,038
-\$	29,418	\$ 710,558

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:

**E. Assumptions & Comments:**

The 358 kW in demand savings did not produce any TRC benefits due to the avoided costs for Demand being zero in 2005.

The credit to costs in 2006 reflected a correction to Hydro One Brampton's cost-sharing.

<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

## A. Name of the Program: Seasonal LED Light Exchange

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

The SLED (Seasonal Light Emitting Diode) Program was marketed to residential customers over the holiday season. This year was the second year of the SLED Exchange program, and the program was enhanced by extending it across the entire Hydro One Networks territory. In total, 105 communities participated in the 2006 SLED Exchange. Due to a Safety Alert related to the SLEDs, Hydro One used retailer gift cards as a replacement for the SLEDs at all exchanges. There were 13,000 gift cards given out, and approximately 8,000 LED strings distributed and not returned (after the recall).

### Measure(s):

	Exchange - from 5 Watt bulbs	Exchange- From mini Lights	Exchange - from 7 Watt bulbs
Base case technology:	19 kWh/yr	8 kWh/yr	26 kWh/yr
Efficient technology:	1 kWh/yr	1 kWh/yr	1 kWh/yr
Number of participants or units delivered for reporting year:	4,362	9,378	8,069
Measure life (years):	30	30	30
Number of Participants or units delivered life to date	10,311	14,258	8,069

## B. TRC Results:

	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 483,652	\$ 796,490
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 8,900	\$ 94,256
Incremental Measure Costs (Equipment Costs)	\$ 35,253	\$ 55,826
Total TRC costs:	\$ 44,153	\$ 150,082
Net TRC (in year CDN \$):	\$ 439,499	\$ 646,408
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	11.0	5.3

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

### Cumulative Results:

### Conservation Programs:

Demand savings (kW):	Summer		
	Winter	146	240

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	9,821,254	327,375	16,393,624	546,454
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:

Incremental O&amp;M:

Incentive:

Total:

Adjustments

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:

**E. Assumptions & Comments:**

\$85,356 was included in 2005 Annual Report for advertising, promotion and event management that were paid from the Communications budget. Actual costs for these activities of \$77,310 were included in 2006 costs in the OEB Q1 Report. The difference is \$8,046.

\$30,000 in costs for Owen Sound traffic signals were included in the LED category in the 2006 Q4 Report that are included in Traffic Signals for the 2006 Annual Report.

The number of participants has been modified from 2006 Q4 report to reflect assumptions on the quantities of LED Lights purchased with gift cards.

Savings from 7 Watt bulbs were based on pro-rating the savings data for 5 Watt bulbs. In calculating the units delivered life to date, the number of participants in 2005 was converted from customers to strings of lights in 2006 to be consistent with the treatment in 2006.

<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

A. **Name of the Program:** Cold Shoulder Appliance Pickup program

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

The Cold Shoulder Appliance Pickup program provides customers with free in-home pickup of secondary, operating refrigerators, freezers and room air conditioners. The program has been operating in Eastern Ontario since early September 2006 and utilized several marketing channels to reach the customers and make them aware of this initiative. The response has been above expectations, with 4,071 units scheduled for pickup by the end of 2006.

**Measure(s):**

	Refrigerators	Freezers	Room Air Conditioners
Base case technology:	1,200 kWh	900 kWh	900 kWh
Efficient technology:	0	0	0
Number of participants or units delivered for reporting year:	2,552	1,242	277
Measure life (years):	6	6	4
Number of Participants or units delivered life to date	2,552	1,242	277

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	3,084,905	\$ 3,084,905
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 414,885	\$ 414,885
Incremental Measure Costs (Equipment Costs)	\$ 394,419	\$ 394,419
Total TRC costs:	\$ 809,304	\$ 809,304
Net TRC (in year CDN \$):	\$ 2,275,601	\$ 2,275,601
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.8	3.8

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

**Conservation Programs:**

Demand savings (kW):	Summer	1,134	1,134
	Winter	1,764	1,764

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	47,909,027	5,817,321	47,909,027	5,817,321
Other resources saved :				
Natural Gas (m3):				
Oil (litres) :				
Propane (litres):				

**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:**

Utility direct costs (\$):

Incremental capital:

Incremental O&amp;M:

Incentive:

Total:

**Reporting Year****Cumulative Life to Date**

\$	414,885	\$ 414,885
\$	31,143	\$ 31,143
\$	446,028	\$ 446,028

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:

**E. Assumptions & Comments:**

Participants received an energy efficiency pack at time of pickup which included 2 CFLs and a timer, along with information on how customers could save energy in their home.

Assumptions for Room Air Conditioners -

1. For Base case technology 900 kWh/yr. is used (this is a conservative estimate since average model being sold today is 880 kWh/yr. as per OEB spreadsheet, and current models will be more efficient than the older models being picked up under this program). Average peak demand used is 1.129 kW (as per Keep Cool results).

2. For Measure Life 4 years is used. This is based on calculating the remaining life of a recycled unit is the same proportion of technology life as was used for Refrigerators in OEB spreadsheet (6 yrs. remaining life / 19 yrs. total life = approx. 1/3 ). Thus 1/3 of the technology life of 12 years for a room air conditioner is therefore 4 years.

Cost adjustment - \$107,500 in costs was erroneously included in Real Time Monitoring in the OEB Q4 Report. This has been corrected for this report by moving this amount to this program

<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

A. **Name of the Program:** PowerSaver Tour

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

The PowerSaver Tour Program was a joint initiative between The Home Depot and Hydro One Networks. This program aimed at promoting and achieving energy conservation savings while reinforcing HydroOne's corporate image. During ten weeks from June until September 2006, a co-branded truck travelled throughout rural Ontario and hosted 11 Hydro One supported summer Festival events where it displayed educational material, gave away product samples and sold energy efficient products. The program was leveraged with another Hydro One complementary program: Cool Shops.

**Measure(s):**

	CFLs- 27 watts give-aways	CFLs - 15 watts give-aways	Other Products Sold
Base case technology:	232 kWh	139 kWh	
Efficient technology:	63	35	
Number of participants or units delivered for reporting year:	9,500	500	13,680
Measure life (years):	3	4	
Number of Participants or units delivered life to date	9,500	500	13,680

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	1,182,561	\$ 1,182,561
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 279,476	\$ 279,476
Incremental Measure Costs (Equipment Costs)	\$ 105,394	\$ 105,394
Total TRC costs:	\$ 384,870	\$ 384,870
Net TRC (in year CDN \$):	\$ 797,691	\$ 797,691
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.1	3.1

C. <b>Results:</b> (one or more category may apply)	Cumulative Results:			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer	8	8	
	Winter	899	899	
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	17,981,316	3,170,923	17,981,316	3,170,923
Other resources saved :				
Natural Gas (m3):				
Oil (litres) :				
Propane (litres):				
<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):				

**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:**

Utility direct costs (\$):

Incremental capital:

Incremental O&amp;M:

Incentive:

Total:

**Reporting Year****Cumulative Life to Date**

\$	279,476	\$ 279,476
\$	34,251	\$ 34,251
\$	313,727	\$ 313,727

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:


**E. Assumptions & Comments:**

For Programmable Thermostats, participants for each fuel type were calculated using Hydro One Networks customers' fuel shares re-percentaged using the percentage of homes with forced air systems (which was 7.8 %, based on excluding customers using electric baseboard heaters and wood).

The products sold included: Timers, CFLs 15, 23 and 27 Watt, CFL 15 Watt buglights, CFL trilights, 20 Watt par CFL 38 flood lights, Seasonal LEDs, Dimmers, regular Programmable Thermostats.

<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

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

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

Hydro One worked with Clean Air Foundation to sponsor and monitor the Keep Cool program in June, 2006. This program contributed to the implementation of sustainable solutions and helped shave summer peak demand while reducing pollution emissions. In particular, through Keep Cool customers were given the opportunity to retire old RACs for free and receive \$25 retailer gift cards. During the three weeks, 2,036 HydroOne customers retired their old RACs and received the gift cards.

**Measure(s):**

	Room Air Conditioners		
Base case technology:	900 kWh		
Efficient technology:			
Number of participants or units delivered for reporting year:	2,036		
Measure life (years):	4		
Number of Participants or units delivered life to date	2,036		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 906,043	\$ 906,043
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 180,732	\$ 180,732
Incremental Measure Costs (Equipment Costs)	\$ 36,648	\$ 36,648
Total TRC costs:	\$ 217,380	\$ 217,380
Net TRC (in year CDN \$):	\$ 688,663	\$ 688,663
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	4.2	4.2

C. <u>Results:</u> (one or more category may apply)		<u>Cumulative Results:</u>		
<u>Conservation Programs:</u>				
Demand savings (kW):	Summer	2,071	2,071	
	Winter		0	

**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:

Incremental O&amp;M:

Incentive:

Total:

\$	180,733	\$ 180,733
\$	40,720	\$ 40,720
\$	221,453	\$ 221,453

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:


**E. Assumptions & Comments:**

Assumptions for Room Air Conditioners -

1. For Base case technology 900 kWh/yr. is used (this is a conservative estimate since average model being sold today is 880 kWh/yr. as per OEB spreadsheet, and current models will be more efficient than the older models being picked up under this program). Average peak demand used is 1.129 kW.

2. For Measure Life 4 years is used. This is based on calculating the remaining life of a recycled unit is the same proportion of technology life as was used for Refrigerators in OEB spreadsheet (6 yrs. remaining life / 19 yrs. total life = approx. 1/3 ). Thus 1/3 of the technology life of 12 years for a room air conditioner is therefore 4 years.

Incentives shown are based on a \$20 per unit for recycling.

Customer incremental equipment costs have been set at \$20 since the customer must transport the room air conditioner to the specified retail location on specified date. Benefit to customer is the free recycling of the unit.

<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 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

A. **Name of the Program:** Every Kilowatt Counts

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

The Every Kilowatt Counts program was a residential education and coupon incentive campaign of the Ontario Power Authority. This campaign was rolled out in two phases: the Spring campaign run from May to August 2006, while the Fall campaign started on October 1st until November 30th, 2006. Products included in **Spring** campaign were CFLs, ceiling fans, timers and programmable thermostats. In the **Fall** campaign products promoted were CFLs, dimmer switches, motion sensors, seasonal LED lights and programmable thermostats (regular and baseboard).

## Measure(s):

	Spring campaign	Fall campaign	Total
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:	289,816	437,175	726,991
Measure life (years):			
Number of Participants or units delivered life to date	289,816	437,175	726,991

## B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 39,889,190	\$ 39,889,190
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 2,133,662	\$ 2,133,662
Incremental Measure Costs (Equipment Costs)	\$ 2,596,701	\$ 2,596,701
Total TRC costs:	\$ 4,730,363	\$ 4,730,363
Net TRC (in year CDN \$):	\$ 35,158,827	\$ 35,158,827
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	8.4	8.4

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

## Cumulative Results:

### Conservation Programs:

Demand savings (kW):	Summer	1,165	1,165
	Winter	17,519	17,519

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	382,067,926	63,671,170	382,067,926	63,671,170
Other resources saved :				
Natural Gas (m3):		1,244,800		1,244,800
Oil (litres)		803,787		803,787
Propane (litres)		253,413		253,413

### 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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		\$ -
	Incremental O&M:	\$ 116,579	\$ 116,579
	Incentive:		\$ -
	Total:	\$ 116,579	\$ 116,579
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

Hydro One Network's share of provincial EKC results is based on the number of Hydro One Networks residential/farm customers (883,000) divided by the number of residential customers in province (4.3 million). This percentage is 20.5%.

The same proportion (20.5%) of EKC program costs totalling \$2.1 million incurred by OPA was used in TRC run, but is not included in Section D of Appendix B as a Hydro One Networks program cost.

<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 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

A. **Name of the Program:** MASS MARKET COUPON INITIATIVE - 2005

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

This mass market residential program featured six energy efficient products for the home - compact fluorescent lighting, seasonal LED lights, programmable thermostats, indoor timers, outdoor timers, and ceiling fans. It was promoted through bill inserts to 1.1 million customers. Coupons with the product discounts were redeemed by the exclusive retailer (Canadian Tire) chosen through RFP process. The program was operated in cooperation with 27 other LDCs including the CLD utilities less Toronto. The program ran from October 1, 2005 to December 31, 2005.

**Measure(s):**

Base case technology: 

Efficient technology:

Number of participants or units delivered for reporting year:			
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Measure life (years):			
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Number of Participants or units delivered life to date	1	2	3
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B. <u>TRC Results:</u>	<u>Reporting Year</u>	<u>Life-to-date TRC Results:</u>

<sup>1</sup> TRC Benefits (\$):		\$	6,711,739
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<sup>2</sup> *TRC Costs (\$):*

Utility program cost (excluding incentives):	\$	81,279
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<i>Incremental Measure Costs (Equipment Costs)</i>	\$	384,485
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Total TRC costs:	\$	465,764
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Net TRC (in year CDN \$):		\$ 6,245,975
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<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	14.4
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C. **Results:** (one or more category may apply) **Cumulative Results:**

### Cumulative Results:

### Conservation Programs:

<i>Demand savings (kW):</i>	<i>Summer</i>	0	285
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Summer	0	285
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Winter	0	1,789
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<i>lifecycle</i>	<i>in year</i>	<i>Lifecycle</i>	Annual Savings
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<i>in year</i>	<i>Lifecycle</i>	Annual Savings
----------------	------------------	----------------

<i>Cumulative Lifecycle</i>	Cumulative Annual Savings
100%	100%
90%	90%
80%	80%
70%	70%
60%	60%
50%	50%
40%	40%
30%	30%
20%	20%
10%	10%
0%	0%

Cumulative  
Annual Savings

Energy saved (kWh):			70,142,678	7,261,874
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Other resources saved :

Natural Gas (m3):			3,806,658
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Other (Oil, Propane):			4,069.924
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### Demand Management Programs:

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

Energy shifted On-peak to Off-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:

Incremental O&amp;M:

Incentive:

Total:

-\$	30,052	\$	51,227
		\$	195,797
-\$	30,052	\$	247,024

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

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

A. **Name of the Program:** Low Income - CMHC/NRCan Program

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

Hydro One's Low Income program (Home Energy Efficiency grant) provides financial incentives for energy efficiency upgrades to low income Hydro One customers who heat their homes with electricity. The program offers up to \$3,000 per qualifying household. The program launched in September 2005; 14 audits and retrofits were completed by the end of 2006. Home improvements include basement, wall and attic insulation, doors and window upgrades, weatherstripping and caulking.

**Measure(s):**

Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:	4		
Measure life (years):			
Number of Participants or units delivered life to date	14		

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**B. TRC Results:**

TRC Results:		Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):		\$ 139,677	\$ 139,677
<sup>2</sup> TRC Costs (\$):			
	Utility program cost (excluding incentives):	\$ -	\$ 8,758
	Incremental Measure Costs (Equipment Costs)	\$ 38,574	\$ 38,574
	Total TRC costs:	\$ 38,574	\$ 47,332
Net TRC (in year CDN \$):		\$ 101,103	\$ 101,103
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		3.6	3.0

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

### Cumulative Results:

### Conservation Programs:

<i>Demand savings (kW):</i>	Summer	0	0
	Winter	27	27

	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<i>Energy saved (kWh):</i>	2,944,825	117,793	2,944,825	117,793
<i>Other resources saved :</i>				
<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):

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:

Incremental O&amp;M:

Incentive:

Total:

\$	-	\$ 8,758
\$	38,574	\$ 38,574
\$	38,574	\$ 47,332

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

Total:

**E. Assumptions and Comments :**

Results are based on pre- and post-audits conducted on each home.

<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

A. **Name of the Program:** Low Income - First Nations Pilot

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

The First Nations Energy Conservation Project provided an integrated approach to energy conservation at the Chippewas of Georgina Island First Nation reserve, encompassing conservation education and housing retrofits. The Chippewas of Georgina Island First Nation was selected for the pilot program due to the community's location and its demonstrated knowledge and receptiveness to issues of conservation and renewable energy. In this community, Hydro One identified a total of 91 homes eligible for this program. Hydro One assigned the delivery of the program (audit, effectiveness studies and retrofit) to Windfall Ecology Centre.

## Measure(s):

Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:	70		
Measure life (years):			
Number of Participants or units delivered life to date	70		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 152,356	\$ 152,356
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 7,704	\$ 7,704
Incremental Measure Costs (Equipment Costs)	\$ 56,124	\$ 56,124
Total TRC costs:	\$ 63,828	\$ 63,828
Net TRC (in year CDN \$):	\$ 88,528	\$ 88,528
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.4	2.4

C. <u>Results:</u> (one or more category may apply)			<u>Cumulative Results:</u>	
<u>Conservation Programs:</u>				
Demand savings (kW):	Summer	3	3	
	Winter	107	107	
			Cumulative	Cumulative
	<i>lifecycle</i>	<i>in year</i>	<i>Lifecycle</i>	<i>Annual Savings</i>
Energy saved (kWh):	2,209,686	163,783	2,209,686	163,783
Other resources saved :				
Other (propane):		96		96
Other (water):		2,100		2,100

## 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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		\$ -
	Incremental O&M:	\$ 7,704	\$ 7,704
	Incentive:	\$ 50,190	\$ 50,190
	Total:	\$ 57,894	\$ 57,894
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

The savings per unit were taken from the Windfall engineering firm consulting report on First Nation installations.

Costs of \$13,548 were erroneously charged in 2006 to this project, and for purposes of the TRC, they were excluded from First Nations. They were moved to Communication and Education for purposes of preparing Appendices B and C.

Products include: CFLs 18 Watt, programmable thermostats, low flow shower heads, bathroom and kitchen aerators, pipe wrap, draftproofing, crawlspace, header areas, attic and basement insulation.

<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

A. **Name of the Program:** Social Housing Program

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

This program builds on the success of the Social Housing Pilot Program launched in 2005. That pilot program consisted of three social housing providers in Networks' service territory, representing 750 units that participated in a program to improve the energy efficiency of their buildings. Networks is contributing a total of \$550 per unit. The funding includes \$50 per unit towards audits, up to \$450 per unit for the implementation of measures designed to achieve electrical energy savings, as well as \$50 per unit for energy awareness training.

**Measure(s):**

	Fridge upgrades	Fridge replacements	Audits
Base case technology:	514	1200	
Efficient technology:	439	514	
Number of participants or units delivered for reporting year:	39	16	1712
Measure life (years):	19	6	
Number of Participants or units delivered life to date	39	16	1712

### B. TRC Results:

<b>TRC Results:</b>		<b>Reporting Year</b>	<b>Life-to-date TRC Results:</b>
<sup>1</sup> TRC Benefits (\$):		\$ 7,300	\$ 7,300
<sup>2</sup> TRC Costs (\$):			
	Utility program cost (excluding incentives):	\$ 4,570	\$ 42,120
	Incremental Measure Costs (Equipment Costs)	\$ 3,897	\$ 3,897
	Total TRC costs:	\$ 8,467	\$ 46,017
<b>Net TRC (in year CDN \$):</b>		<b>-\$ 1,167</b>	<b>-\$ 38,717</b>
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>		<b>0.9</b>	<b>-0.2</b>

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

### Cumulative Results:

### Conservation Programs:

<b>Demand savings (kW):</b>		<i>Summer</i>	3	3
		<i>Winter</i>	5	5
	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<b>Energy saved (kWh):</b>	109,239	12,502	109,239	12,502
<b>Other resources saved :</b>				
<i>Natural Gas (m3):</i>				
<i>Other (specify):</i>				

### Demand Management Programs:

Controlled load (kW)	Controlled load (kW)	Controlled load (kW)
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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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 338,345	\$ 375,895
	Incentive:	\$ 17,008	\$ 17,008
	Total:	\$ 355,353	\$ 392,903
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

Funds have been advanced to 751 participants based on audit results, but only limited measures (39 refrigerator replacements) had been undertaken by year-end.

For 2006, the TRC was run for only the refrigerators because other retrofit measures hadn't been implemented. \$4,570 out of a total of \$75,000 in program costs were included in utility program costs for the TRC for the refrigerators. This is based on the proportion that refrigerator incentives (\$17,008) represent of the total incentives paid for all types of retrofits to date (\$279,138, or 6%).

<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

A. **Name of the Program:** Communication & Education

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

A number of Communication and Education initiatives have been conducted.

The Earth Angels Student Energy Challenge provided education on energy conservation to students in 20 schools across Ontario. Much positive response was received from both students and parents.

The SmartPack Program initiative started to be rolled out at the end of 2006. With this initiative, 3,500 students across Ontario will receive energy saving technologies during their Conservation and Environmental Education classes.

Hydro One has co-sponsored a 30-second public service announcement, "Turn out the Light", that features Nelly Furtado and a small army of children dancing down a Toronto school hallway reminding schools and families to conserve electricity by turning off unnecessary lights.

**Measure(s):**

*Base case technology:*

*Efficient technology:*

Number of participants or units delivered for reporting year:

Measure life (years):

Number of Participants or units delivered life to date

**B. TRC Results:**

TRC Results:		Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$)		\$ -	\$ 73,798
<sup>2</sup> TRC Costs (\$):			
	Utility program cost (excluding incentives):	\$ 157,827	\$ 455,361
	Incremental Measure Costs (Equipment Costs)		\$ 5,490
	Total TRC costs:	\$ 157,827	\$ 460,851
Net TRC (in year CDN \$):		-\$ 157,827	-\$ 387,053
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		-	0.2

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

### Cumulative Results:

### Conservation Programs:

*Demand savings (kW):*

## Summer

*Winter*

0

0

	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<i>Energy saved (kWh):</i>			1,146,312	286,578

*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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 157,827	\$ 455,361
	Incentive:		\$ 7,625
	Total:	\$ 157,827	\$ 462,986
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

\$13,548 was included that had been erroneously charged to First Nations.

<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

## A. Name of the Program: Municipal Traffic Signal LED Retrofit

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

This pilot program will provide monetary incentives to Municipalities for the retrofit of its traffic signals from incandescent to LED technology. LED lights provide significant energy savings and life expectancy which reduces overall maintenance costs space. This program is designed to achieve energy conservation savings (reduced energy consumption in kilowatt hours). LED signal lights are considerably more efficient, and Hydro One, through this program, will provide monetary incentives in order to facilitate earlier adoption of this technology. During 2006 one of the 24 Municipalities that enrolled in the program completed the installation of the new technology.

### Measure(s):

	Red -12 "	Green- 12"	Green-8"
Base case technology:	135 watts	135 watts	60 watts
Efficient technology:	LED 10 watts	LED 12 watts	LED 15 watts
Number of participants or units delivered for reporting year:	184	184	16
Measure life (years):	10	10	10
Number of Participants or units delivered life to date	184	184	16

	Arrow 12"	Pedestrian	Total
Base case technology:	90 watts	60 watts	
Efficient technology:	LED 8 watts	6 watts	
Number of participants or units delivered for reporting year:	17	1	402
Measure life (years):	16	10	
Number of Participants or units delivered life to date	17	1	402

## B. TRC Results:

	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 116,964	\$ 116,964
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 6,951	\$ 6,951
Incremental Measure Costs (Equipment Costs)	\$ 38,717	\$ 38,717
Total TRC costs:	\$ 45,668	\$ 45,668
Net TRC (in year CDN \$):	\$ 71,296	\$ 71,296
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.6	2.6

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

### Cumulative Results:

### Conservation Programs:

Demand savings (kW):	Summer	21	21
	Winter	21	21

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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 6,951	\$ 6,951
	Incentive:	\$ 30,000	\$ 30,000
	Total:	\$ 36,951	\$ 36,951
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

E. <b><u>Assumptions &amp; Comments:</u></b>
Costs of \$30,000 included as SLED costs in the OEB Q4 report, were for the Owen Sound traffic light incentive, and were moved to LED traffic lights program.
Energy savings based on analysis of historical LED data.

<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

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

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

The Cool Shops program was implemented in conjunction with the PowerSaver Tour Program. The staff from the Tour conducted the audits between the weekend events on the PowerSaver Tour. The primary goal was to educate the small commercial sector on actions they could undertake to save energy. Complementary CFLs and LED Exit lights were provided, and discounted product offer sheets were provided to all participants.

**Measure(s):**

	CFLs 15 Watts	CFLs 27 Watts	LED Exit Lghts
Base case technology:	139 kWh	232 kWh	263 kWh
Efficient technology:	35 kWh	63 kWh	26 kWh
Number of participants or units delivered for reporting year:	1,020	88	174
Measure life (years):	4	3	25

Number of Participants or units delivered life to date	1,020	88	174
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	CFLs 11 Watts	CFLs 23 watt	Total
Base case technology:	93		
Efficient technology:	26		
Number of participants or units delivered for reporting year:	6	88	1366
Measure life (years):	3		

Number of Participants or units delivered life to date	6	88	1366
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B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 84,075	\$ 84,075
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 34,315	\$ 34,315
Incremental Measure Costs (Equipment Costs)	\$ 16,897	\$ 16,897
Total TRC costs:	\$ 51,212	\$ 51,212
Net TRC (in year CDN \$):	\$ 32,863	\$ 32,863
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	1.6	1.6

C. <u>Results:</u> (one or more category may apply)		<u>Cumulative Results:</u>		
<u>Conservation Programs:</u>				
Demand savings (kW):	Summer	8	8	
	Winter	30	30	
			Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	lifecycle	1,336,522	in year	154,231
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. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:	<input type="text"/>	<input type="text"/>
	Incremental O&M:	\$ 34,315	\$ 34,315
	Incentive:	\$ 7,564	\$ 7,564
	Total:	\$ 41,879	\$ 41,879
Utility indirect costs (\$):	Incremental capital:	<input type="text"/>	<input type="text"/>
	Incremental O&M:	<input type="text"/>	<input type="text"/>
	Total:	<input type="text"/>	<input type="text"/>

**E. Assumptions & Comments:**

The number of CFLs includes both the products given to customers and the additional products purchased by the businesses which were audited. LED Exit lights were given to businesses audited. Number of 15 watt CFLs includes the number of fluorescent BR 15 watts and 16 watts. Number of 27W CFLs includes the number of 23 watt CFLs and Fluorescent PAR 23 watt sold.

<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

A. **Name of the Program:** Toronto Region Conservation Authority initiatives

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

Networks is participating in four energy initiatives being led by the Toronto Region Conservation Authority (TRCA) as part of their Community Transformation Programs. The programs will target municipalities, hospitals, schools, as well as the residential sector. To date, the municipality of Uxbridge has enrolled four buildings, four schools have joined the Sustainable Schools program, and a design has been selected for the Archetype House that incorporates LEED - gold and Energy STAR for New Homes environmental ratings .

**Measure(s):**

TRCA

Base case technology: 

Efficient technology:

Number of participants or units delivered for reporting year:	15			
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Measure life (years):			
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Number of Participants or units delivered life to date	15		
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**B. TRC Results:**

Reporting Year

**Life-to-date TRC Results:**

<sup>1</sup> TRC Benefits (\$)	\$ -
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<sup>2</sup> *TRC Costs (\$):*

Utility program cost (excluding incentives):	\$ -	\$ 78,500
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Incremental Measure Costs (Equipment Costs)		
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<i>Total TRC costs:</i>	\$	-	\$	78,500
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Net TRC (in year CDN \$):	\$	-	-\$	78,500
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<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	-	-
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**C. Results:** (one or more category may apply)

### Cumulative Results:

### Conservation Programs:

<i>Demand savings (kW):</i>	Summer		0
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Season	Summer	Winter
Temperature	25°C	10°C
Humidity	60%	80%
Wind Speed	15 km/h	10 km/h
Cloud Cover	30%	70%
Precipitation	50 mm	120 mm
Day Length	14 hours	10 hours
Night Length	10 hours	14 hours
Soil Temperature	15°C	5°C
Soil Moisture	20%	40%
Plant Growth	High	Low
Animal Activity	High	Low
Human Activity	High	Low
Energy Consumption	High	Low
Water Usage	High	Low
Food Intake	High	Low
Reproduction Rate	High	Low
Survival Rate	High	Low
Health Status	Good	Poor
Mortality Rate	Low	High
Disease Incidence	Low	High
Injury Rate	Low	High
Accident Rate	Low	High
Crime Rate	Low	High
Unemployment Rate	Low	High
Population Growth	High	Low
Economic Activity	High	Low
Political Stability	High	Low
Social Harmony	High	Low
Cultural Diversity	High	Low
Technological Advancement	High	Low
Environmental Awareness	High	Low
Global Cooperation	High	Low
Peacekeeping Efforts	High	Low
Human Rights Protection	High	Low
International Trade	High	Low
Global Warming Mitigation	High	Low
Climate Change Adaptation	High	Low
Sustainable Development	High	Low
Renewable Energy Use	High	Low
Waste Management	High	Low
Water Conservation	High	Low
Forest Conservation	High	Low
Ocean Conservation	High	Low
Wildlife Conservation	High	Low
Archaeological Excavations	High	Low
Historical Research	High	Low
Artistic Expression	High	Low
Scientific Discoveries	High	Low
Medical Advancements	High	Low
Space Exploration	High	Low
Artificial Intelligence	High	Low
Quantum Computing	High	Low
Biotechnology	High	Low
Space Colonization	High	Low
Global Communication	High	Low
Internet Usage	High	Low
Mobile Phone Usage	High	Low
Social Media Usage	High	Low
Video Gaming Usage	High	Low
Streaming Services Usage	High	Low
Online Shopping Usage	High	Low
Cloud Storage Usage	High	Low
Virtual Reality Usage	High	Low
Augmented Reality Usage	High	Low
Blockchain Usage	High	Low
Cryptocurrency Usage	High	Low
Artificial Intelligence Usage	High	Low
Quantum Computing Usage	High	Low
Biotechnology Usage	High	Low
Space Colonization Usage	High	Low
Global Communication Usage	High	Low
Internet Usage Usage	High	Low
Mobile Phone Usage Usage	High	Low
Social Media Usage Usage	High	Low
Video Gaming Usage Usage	High	Low
Streaming Services Usage Usage	High	Low
Online Shopping Usage Usage	High	Low
Cloud Storage Usage Usage	High	Low
Virtual Reality Usage Usage	High	Low
Augmented Reality Usage Usage	High	Low
Blockchain Usage Usage	High	Low
Cryptocurrency Usage Usage	High	Low
Artificial Intelligence Usage Usage	High	Low
Quantum Computing Usage Usage	High	Low
Biotechnology Usage Usage	High	Low
Space Colonization Usage Usage	High	Low
Global Communication Usage Usage	High	Low
Internet Usage Usage Usage	High	Low
Mobile Phone Usage Usage Usage	High	Low
Social Media Usage Usage Usage	High	Low
Video Gaming Usage Usage Usage	High	Low
Streaming Services Usage Usage Usage	High	Low
Online Shopping Usage Usage Usage	High	Low
Cloud Storage Usage Usage Usage	High	Low
Virtual Reality Usage Usage Usage	High	Low
Augmented Reality Usage Usage Usage	High	Low
Blockchain Usage Usage Usage	High	Low
Cryptocurrency Usage Usage Usage	High	Low
Artificial Intelligence Usage Usage Usage	High	Low
Quantum Computing Usage Usage Usage	High	Low
Biotechnology Usage Usage Usage	High	Low
Space Colonization Usage Usage Usage	High	Low
Global Communication Usage Usage Usage	High	Low
Internet Usage Usage Usage Usage	High	Low
Mobile Phone Usage Usage Usage Usage	High	Low
Social Media Usage Usage Usage Usage	High	Low
Video Gaming Usage Usage Usage Usage	High	Low
Streaming Services Usage Usage Usage Usage	High	Low
Online Shopping Usage Usage Usage Usage	High	Low
Cloud Storage Usage Usage Usage Usage	High	Low
Virtual Reality Usage Usage Usage Usage	High	Low
Augmented Reality Usage Usage Usage Usage	High	Low
Blockchain Usage Usage Usage Usage	High	Low
Cryptocurrency Usage Usage Usage Usage	High	Low
Artificial Intelligence Usage Usage Usage Usage	High	Low
Quantum Computing Usage Usage Usage Usage	High	Low
Biotechnology Usage Usage Usage Usage	High	Low
Space Colonization Usage Usage Usage Usage	High	Low
Global Communication Usage Usage Usage Usage	High	Low
Internet Usage Usage Usage Usage Usage	High	Low
Mobile Phone Usage Usage Usage Usage Usage	High	Low
Social Media Usage Usage Usage Usage Usage	High	Low
Video Gaming Usage Usage Usage Usage Usage	High	Low
Streaming Services Usage Usage Usage Usage Usage	High	Low
Online Shopping Usage Usage Usage Usage Usage	High	Low
Cloud Storage Usage Usage Usage Usage Usage	High	Low
Virtual Reality Usage Usage Usage Usage Usage	High	Low
Augmented Reality Usage Usage Usage Usage Usage	High	Low
Blockchain Usage Usage Usage Usage Usage	High	Low
Cryptocurrency Usage Usage Usage Usage Usage	High	Low

Winter		0
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*lifecycle*

*in year*

*Cumulative  
Lifecycle*

Cumulative  
Annual Savings

Energy saved (kWh):

Other resources saved :

Natural Gas (m3):

Other (specify):			
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### Demand Management Programs:

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

Energy shifted On-peak to Off-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. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ -	\$ 78,500
	Incentive:		
	Total:	\$ -	\$ 78,500
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

There was an over accrual for the TRCA program in 2005 because Networks had planned to spend a certain amount of money as a start-up fee. However, in 2006 these expenses did not come thorough, creating a credit of \$119,000 for this program.

<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.



**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):		
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D. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 18,548	\$ 18,548
	Incentive:		\$ -
	Total:	\$ 18,548	\$ 18,548
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

The sole PBIP participant at year-end has been included in Farm Efficiency.

<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.



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):		
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D.	Actual Program Costs:		Reporting Year	Cumulative Life to Date
	Utility direct costs (\$):	Incremental capital:		
		Incremental O&M:	\$ 42,380	\$ 105,880
		Incentive:		
		Total:	\$ 42,380	\$ 105,880
	Utility indirect costs (\$):	Incremental capital:		
		Incremental O&M:		
		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

A. **Name of the Program:** Double Return (Demand Response Program)

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

The Double Return program was launched in November 2006. The objective of the program is to reduce summer and winter peak demand in commercial and industrial facilities. The target customer group (phase I) consists of approximately 750 interval meter accounts with an aggregate monthly peak load in excess of 1000 MW. To qualify for incentives, the customers need to reduce their peak demand by 5% to 10% during winter and/or summer peak months.

**Measure(s):**

Base case technology: 

Efficient technology:				
-----------------------	--	--	--	--

Number of participants or units delivered for reporting year:				
---	--	--	--	--

Measure life (years):			
-----------------------	--	--	--

Number of Participants or units delivered life to date	1	2	3

B. <u>TRC Results:</u>	<u>Reporting Year</u>	<u>Life-to-date TRC Results:</u>
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<sup>1</sup> TRC Benefits (\$)	\$ -	\$ -
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<sup>2</sup> *TRC Costs (\$):*

Utility program cost (excluding incentives):	\$	1,600	\$	1,600
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Incremental Measure Costs (Equipment Costs)	\$ -	\$ -
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Total TRC costs:	\$	1,600	\$	1,600
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<i>Net TRC (in year CDN \$):</i>	-\$	1,600	-\$	1,600
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<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	\$	-	0
--	----	---	---

C. <b>Results:</b> (one or more category may apply)	Cumulative Results:
---	---------------------

### Conservation Programs:

Demand savings (kW):	Summer		0
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Summer		0
--------	--	---

Winter		0
--------	--	---

<i>lifecycle</i>	<i>in year</i>	<i>Lifecycle</i>	Annual Savings
------------------	----------------	------------------	----------------

<i>in year</i>	<i>Lifecycle</i>	Annual Savings
----------------	------------------	----------------

<i>Cumulative Lifecycle</i>	Cumulative Annual Savings
100%	100%
90%	90%
80%	80%
70%	70%
60%	60%
50%	50%
40%	40%
30%	30%
20%	20%
10%	10%
0%	0%

Cumulative  
Annual Savings

Energy saved (kWh):			0	0
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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 On-peak to Off-peak (kWh):		
Energy shifted Mid-peak to Off-peak (kWh):		

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

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

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

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

## Metric (specify):

D. <u>Actual Program Costs:</u>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>		
	<i>Incremental O&amp;M:</i>	\$ 1,600	\$ 1,600
	<i>Incentive:</i>	\$ -	\$ -
	<i>Total:</i>	\$ 1,600	\$ 1,600
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>		
	<i>Incremental O&amp;M:</i>		
	<i>Total:</i>		

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

A. **Name of the Program:** Interim TOU Rate Pilot

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

Interim Time of Use (TOU) rates were offered to general service customers who could achieve an off-peak demand (kW) at least twice their on-peak demand. Distribution rates were the same as for other comparable distribution customers but demand charges are only applied to the peak demand during on-peak hours.

The LTD costs are the difference in revenues that would have been collected at standard distribution rates and what is being collected at TOU distribution rates, plus initial set up costs. This program began in 2004 and is expected to run until 2007. Three customers below 5 MW are currently participating.

## Measure(s):

Base case technology:

Efficient technology:

Number of participants or units delivered for reporting year:

Measure life (years):

Number of Participants or units delivered life to date

3

## B. TRC Results:

### Reporting Year

### Life-to-date TRC Results:

<sup>1</sup> TRC Benefits (\$)

\$

-

-

<sup>2</sup> 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

0

Winter

0

lifecycle

in year

Cumulative  
Lifecycle

Cumulative  
Annual Savings

Energy saved (kWh):

0

0

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:

Incremental O&amp;M:

Incentive:

Total:

\$ 394,405 \$ 632,407

\$ 394,405 \$ 632,407

Utility indirect costs (\$):

Incremental capital:

Incremental O&amp;M:

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.



**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. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 1,353	\$ 111,288
	Incentive:	\$ 2,820	\$ 2,820
	Total:	\$ 4,173	\$ 114,108
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

Note: \$2,820 in costs reported as PBIP in the OEB Q4 report was moved into this program for purposes of running the TRC. The LTD B/C ratio is lower because it includes fixed direct costs from 2005 related to audits and farm communication.

<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

A. **Name of the Program:** Smart Meters

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

The Smart Meter program approved for CDM by the OEB in 2005 was \$1.4M in OM&A and \$6.4M in capital. The funding was to cover activities related to meter installation in 2005 that would have put Hydro One in a position to begin deployment leading to 800,000 meters installed by the end of 2007. In preparation, Hydro One acquired 25,000 smart meters and related software. The installation of 25,000 meters has been almost completed in 2006, and all the funds from the OEB have been successfully utilized.

**Measure(s):**

	Smart Meters		
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:	19,491		
Measure life (years):			
Number of Participants or units delivered life to date	19,491		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):		
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 7,281,000	\$ 7,800,000
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 7,281,000	\$ 7,800,000
Net TRC (in year CDN \$):	\$ 7,281,000	\$ 7,800,000
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

C. <b>Results:</b> (one or more category may apply)	Cumulative Results:			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer			
	Winter			
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):				
Other resources saved :				
Natural Gas (m3):				
Other (specify):				
<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):				

**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. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:	\$ 6,400,000	\$ 6,400,000
	Incremental O&M:	\$ 881,000	\$ 1,400,000
	Incentive:		
	Total:	\$ 7,281,000	\$ 7,800,000
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

No results are shown as the saving benefits have not yet been determined

<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.



**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. <b><u>Actual Program Costs:</u></b>		<b><u>Reporting Year</u></b>	<b><u>Cumulative Life to Date</u></b>
Utility direct costs (\$):	Incremental capital:		
	Incremental O&M:	\$ 697,350	\$ 1,576,428
	Incentive:		\$ -
	Total:	\$ 697,350	\$ 1,576,428
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		

**E. Assumptions & Comments:**

\$198,276 in costs were added in last year's Annual Report, and therefore are included in the Cumulative Life to Date.

<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:

2006

## 1. Residential Programs

	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 (\$)
<i>Residential In-Home Display</i>	\$ 5,532,223	\$ 3,545,890	\$ 1,986,333	1.6	14,809,145	74,047,076	3,357	\$ 3,242,479
<i>Residential Load Control</i>	\$ 2,782,836	\$ 799,723	\$ 1,983,113	3.5	806,435	8,780,648	2,169	\$ 2,087,815
<i>Seasonal LED Light Exchange</i>	\$ 483,652	\$ 44,153	\$ 439,499	11.0	327,375	9,821,254	0	\$ 140,676
<i>Cold Shoulder Appliance Pickup</i>	\$ 3,084,905	\$ 809,304	\$ 2,275,601	3.8	5,817,321	47,909,027	1,134	\$ 446,028
<i>PowerSaver Tour</i>	\$ 1,182,561	\$ 384,870	\$ 797,691	3.1	3,170,923	17,981,316	8	\$ 313,727
<i>Keep Cool</i>	\$ 906,043	\$ 217,380	\$ 688,663	4.2	1,649,160	6,596,640	2,071	\$ 221,453
<i>Every Kilowatt Counts</i>	\$ 39,889,190	\$ 4,730,363	\$ 35,158,827	8.4	63,671,170	382,067,926	1,165	\$ 116,579
<i>Coupon Initiative</i>	\$ -	\$ 30,052	\$ 30,052	0.0	0	0	0	\$ 30,052
<i>Low Income - CMHC/NRCan</i>	\$ 139,677	\$ 38,574	\$ 101,103	3.6	117,793	2,944,825	0	\$ 38,574
<i>Low Income - First Nations Pilot</i>	\$ 152,356	\$ 63,828	\$ 88,528	2.4	163,783	2,209,686	3	\$ 57,894
<i>Social Housing</i>	\$ 7,300	\$ 8,467	\$ -1,167	0.9	12,502	109,239	3	\$ 355,353
<i>Communication and Education</i>	\$ -	\$ 157,827	\$ -157,827	0.0	0	0	0	\$ 157,827
<b>*Totals App. B - Residential</b>	<b>\$ 54,160,743</b>	<b>\$ 10,770,327</b>	<b>\$ 43,390,416</b>	<b>5.0</b>	<b>90,545,607</b>	<b>552,467,637</b>	<b>9,910</b>	<b>\$ 7,148,353</b>
<i>Residential Indirect Costs not attributable to any specific program</i>								
<b>Total Residential TRC Costs</b>		\$ 10,770,327						
<b>**Totals TRC - Residential</b>	<b>\$ 54,160,743</b>	<b>\$ 10,770,327</b>	<b>\$ 43,390,416</b>	<b>5.0</b>				

## 2. Commercial / MUSH Programs

	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 (\$)
<i>Municipal Traffic Signal LED Retrofit</i>	\$ 116,964	\$ 45,668	\$ 71,296	2.6	185,396	1,870,103	21	\$ 36,951
<i>Cool Shops</i>	\$ 84,075	\$ 51,212	\$ 32,863	1.6	154,231	1,336,522	8	\$ 41,879
<i>Toronto Reg. Conservation Authority</i>	\$ -	\$ -	\$ -	0.0	0	0	0	\$ -
<i>PowerSaver Business Incentive Prog.</i>	\$ -	\$ 18,548	\$ -18,548	0.0				\$ 18,548
<b>*Totals App. B - Commercial / MUSH</b>	<b>\$ 201,039</b>	<b>\$ 115,428</b>	<b>\$ 85,611</b>	<b>1.7</b>	<b>339,627</b>	<b>3,206,625</b>	<b>29</b>	<b>\$ 97,378</b>
<i>Commercial / MUSH Indirect Costs not attributable to any specific program</i>								
<b>Total TRC Costs</b>		\$ 115,428						
<b>**Totals TRC - Commercial / MUSH</b>	<b>\$ 201,039</b>	<b>\$ 115,428</b>	<b>\$ 85,611</b>	<b>1.7</b>				

### 3. Industrial Programs

	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 (\$)
Industrial Energy Efficiency	\$ -	\$ 42,380	-\$ 42,380	0.0	0	0	0	\$ 42,380
Double Return (Demand Response)	\$ -	\$ 1,600	-\$ 1,600					\$ 1,600
Interim Time of Use	\$ -	\$ -	\$ -	0.0	0	0	0	\$ 394,405
<b>*Totals App. B - Industrial</b>	\$ -	\$ 43,980	-\$ 43,980	0.0	0	0	0	\$ 438,385
Industrial Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ 43,980						
<b>**Totals TRC - Industrial</b>	\$ -	\$ 43,980	-\$ 43,980	0.0				

### 4. Agricultural Programs

	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 (\$)
Farm Efficiency/PowerSaver Bus.Inc	\$ 307,203	\$ 16,241	\$ 290,962	18.9	64,000	408,009	9	\$ 4,173
<b>*Totals App. B - Agricultural</b>	\$ 307,203	\$ 16,241	\$ 290,962	18.9	64,000	408,009	9	\$ 4,173
Agricultural Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ 16,241						
<b>**Totals TRC - Agricultural</b>	\$ 307,203	\$ 16,241	\$ 290,962	18.9				

### 5. LDC System Programs

	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 (\$)
Distribution Loss Reduction System	\$ -	\$ 877,271	-\$ 877,271	0.0				\$ 877,271
<b>*Totals App. B - LDC System</b>	\$ -	\$ 877,271	-\$ 877,271	0.0	0	0	0	\$ 877,271
LDC System Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ 877,271						
<b>**Totals TRC - LDC System</b>	\$ -	\$ 877,271	-\$ 877,271	0.0				

6. 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 (\$)	7,281,000
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7. Other Programs

	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 (\$)
Program Management & Research	\$ -	\$ 697,350	-\$ 697,350	0.0	0	0	0	\$ 697,350
*Totals App. B - Other	\$ -	\$ 697,350	-\$ 697,350	0.0	0	0	0	\$ 697,350
Other Indirect Costs not attributable to any specific program								
Total TRC Costs		\$ 697,350						
**Totals TRC - Other	\$ -	\$ 697,350	-\$ 697,350	0.0				

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	\$ 54,668,985	\$ 12,520,597	\$ 42,148,388	4.4	90,949,234	556,082,271	9,939	\$ 16,543,910
Any other Indirect Costs not attributable to any specific program								
TOTAL ALL LDC COSTS		\$ 12,520,597						
**LDC' PORTFOLIO TRC	\$ 54,668,985	\$ 12,520,597	\$ 42,148,388	4.4				

\* The savings and spending information from this row is to be carried forward to Appendix A.