



**Conservation and Demand Management  
2007 Annual Report**

**3<sup>rd</sup> Tranche Funding**

Ontario Energy Board File No. RP-2004-0203  
Docket Number RP-2004-0203 / EB-2004-0489

March 31, 2008

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## EXECUTIVE SUMMARY

This report is submitted in fulfillment of the requirements of the Ontario Energy Board (the "Board" or the OEB) issued on December 10, 2004, Board file number RP-2004-0203. For Enersource, the Board issued its Final Order on February 3, 2005 under docket number RP-2004-0203 / EB-2004-0489. The report is structured according to the Board's March 2007 Guideline for Annual Reporting of CDM Initiatives and presents an account of the CDM initiatives and programs started or continued by Enersource Hydro Mississauga (EHM or Enersource) in 2007.

In 2005 Enersource launched its CDM program and, by December 31<sup>st</sup>, 2007, invested approximately \$8.0M which resulted in annual savings to-date of 31.9 million kWh. The 2007 benefit-cost ratio was 2.0. Since the inception, the measured ratio is 1.74. This is because a number of the CDM programs had high up-front development costs with respect to their projected savings. The economics are expected to improve significantly, as savings are accrued against lower required expenditures every year as programs mature.

In 2007, several of Enersource's 3<sup>rd</sup> Tranche programs were completed, either because they attained a pre-determined objective or because a pre-determined termination date occurred. A total of \$264,000 of unspent funds has been identified. Enersource has re-deployed these funds to support negotiations with the OPA. Assuming these negotiations are successful, Enersource will be in a position to further re-deploy these funds to recruit new Demand Response participants.

Enersource's CDM Plan involves the following type of initiatives, in the specified areas:

### ***Conservation and Demand Management***

- *Residential and Small Commercial (<50kW)*
- *Commercial, Industrial and Institutional (>50kW)*

**Highlights:** - In 2007 we implemented measures resulting in about 21,333,000 kWh annual energy savings and a summer peak demand savings of 5.7 MW in the residential and in the CI&I sectors.

- All initiatives under the CDM programs were screened for the Total Resource Cost (TRC) cost test. We calculated an average TRC Benefit-Cost Ratio for the year of 2.0 and of 2.3 for the initiatives launched in the CI&I sector.
- The Residential & Small Commercial Sector, with a TRC of 1.4, was lower due to the higher initial development costs.
- We worked with the Ministry of Energy, the Ontario Power Authority (OPA) and CLD partners, to consolidate the powerWISE brand launched in 2005 and a number of co-branded, mass-market CDM initiatives. These include:
  - Water Heater Tune-up
  - Library Program
  - Program-in-a-Box

- OPA Retailer Coupon Program
  - OPA Refrigerator Retirement Program
  - LED (Light Emitting Diode) Christmas Lights Exchange
- In support of the Ministry of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007, Enersource installed 550 meters funded through the CDM program, in addition, Enersource installed approximately 60,000 meters in 2007.
  - There were 201 SMART Meters installed in a 186 unit residential building, converted from bulk metering to individual metering.
  - A powerWISE Business Incentive Program (PBIP), launched in 2006 continued in 2007, to help improve the economics of certain energy conservation measures and their implementation. This program was replaced by the OPA Energy Retrofit Incentive Program (ERIP).
  - Load control devices continued to be installed. These devices allow us to respond to price signals in all market sectors and to provide needed relief, during critical peak demand periods.
  - Cooperative efforts continued with the City of Mississauga and the Region of Peel on the installation of renewable energy projects. These projects are expected to be completed in the second quarter of 2008.
  - Local social housing corporations, non-profit homes and co-op housing continued to benefit from our programs in 2007. The primary types of projects in 2007 were lighting retrofits.

## ***Distribution Loss Reduction***

- *Voltage Profile Management*

*Highlights:* - A pilot program was developed, to investigate a specific technology aimed at reducing power grid distribution losses. The pilot was completed in 2007 and report was produced. The pilot involved voltage conditioning at a distribution transformer station.

- The completed report was verified by a third party. The verification test proved annual energy savings to be over 3,600,000 kWh, well above the 1,553,000 projected by an initial TRC. Peak demand reduction was measured to be 420 kW.

## ***Distributed Energy***

- Load Displacement
- Stand-by Generators

*Highlights:* - We completed the design and development of a Demand Response Control Room, which will become the single dispatch point for demand response (DR) programs and loads aggregated by Enersource.

- Negotiations were conducted with a number of prospective customers for dispatching loads in DR. Total summer peak dispatchable load is now 7.8 MW, including CI&I Load Control and Stand-by Generators.

- The 2007 TRC Cost-Benefit Ratios were calculated to be 3.0 for dispatched loads and 2.5 for stand-by generators.

## **Overall Program Support**

- o powerWISE Brand
- o powerWISE Fleet Branding
- o powerWISE Website
- o Special Events Van
- o CDM Program Compliance

*Highlights:* - The Special Events Van initiative, with its team, greatly supports all our CDM efforts, by bringing the conservation message and means to start conserving directly to our customers. Activities, costs and results related to this initiative were compiled under the Co-Branded Mass Market Program, significantly contributing to that program's excellent TRC Benefit-Cost Ratio of 3.54 for 2006. Funding for this program ended in April 2006. Highlights below refer to that year. Enersource applied for and received additional funding to continue this program in the 2006 rate application.

- The Special Events Van team delivered energy conservation messages, participating at 50 events to-date, 10 of which were in 2006. The team engaged thousands of people, distributing over 10,240 CFLs and thousands of promotional items and educational material.
- The powerWISE website is designed to provide customers a centralized source of information on energy conservation issues and cost-effective measures. The powerWISE brand has been used by the Ministry of Energy in their 2006 and 2007 advertising campaign. Links are provided to each CLD member's website, where LDC-specific program information can be accessed. Enersource's site proved very successful, registering over 167,000 visitors in 2006.
- Developed a governance structure, to develop processes to manage project evaluations, approvals, status tracking and results monitoring and verification.

The past three years of Conservation and Demand Management were successful for Enersource. Collaborative efforts with the Coalition of Large Distributors allowed us to launch many initiatives in a similar manner, providing for more consistent messaging in our promotional campaigns, while leveraging individual distributors' investments.

The CLD members - representing about 40% of the Province's load - have worked well together. They have jointly developed and delivered programs and launched the *powerWISE* brand. Synergistic efforts also helped promote the Provincial directive to foster a **conservation culture** in Ontario.

In 2007 Enersource launched five programs developed by the OPA. Those programs include;

1. Every Kilowatt counts

2. Fridge Round-p
3. Peak Saver
4. Energy Retrofit Incentive Program (ERIP)
5. Summer Savings

In 2007, several of Enersource's 3<sup>rd</sup> Tranche programs were completed, either because they attained a pre-determined objective or because a pre-determined termination date occurred. A total of \$264,000 of unspent funds has been identified. Enersource has re-deployed these funds to support negotiations with the OPA. Assuming these negotiations are successful, Enersource will be in a position to further re-deploy these funds to recruit new DR Room participants.

During 2007, Enersource entered into an agreement with the Ministry of Energy, in partnership with Hydro One Networks, to pilot a program to facilitate the adoption of renewable energy technologies for residential customers.

The aim of the program is to help customers acquire renewable energy equipment for their homes that would reduce electricity load and carbon emissions. The program offers customers an incentive on the cost of financing certain renewable energy technology projects, by either "buying down" the interest rate to zero percent or by providing a rebate.

# 1. Introduction

On December 10, 2004 the Ontario Energy Board (“Board”) issued its oral decision in the RP-2004-0203 proceeding, with respect to six (6) applications filed by the Coalition of Large Distributors (“CLD”) comprising Enersource Hydro Mississauga (Enersource), Horizon Utilities Corporation, Hydro Ottawa Limited, PowerStream Inc., Toronto Hydro-Electric System Limited and Veridian Connections. Among other things, that decision requires that each distributor file an annual CDM Report. This Report fulfills that requirement.

The Board’s decision indicated that annual reporting “should be done on a calendar year and should be filed with the Board no later than March 31<sup>st</sup> of the following year” and would be subject to a public review. On December 21<sup>st</sup>, 2005 the Board issued a Guideline for Annual Reporting of CDM Initiatives that explained more fully the requirements. On February 8, 2008 the Board has issued for stakeholder comments draft Guidelines for Electricity Distributor Conservation and Demand Management. On March 3<sup>rd</sup> 2008 the Board issued Requirements for Annual Reporting of Conservation and Demand Management (CDM) Initiatives. These Reporting Requirements and Excel templates for Appendix A, Appendix B, and Appendix C are available from the Board’s website<sup>1</sup>. This report has been prepared in accordance with those guidelines and requirements.

This report gives an overview of Enersource’s CDM Plan, an assessment of benefits, a description of each initiative undertaken under each program and an appraisal of results, where feasible, and lessons learned.

CDM initiatives were organized under the following program headings:

## ***Conservation and Demand Management***

- *Residential and Small Commercial (<50kW)*
  - Co-Branded Mass Market Program
  - SMART Meter Pilot Program
  - Residential Load Control Program
  - SMART Avenues
  - Social Housing Program
- *Commercial, Industrial and Institutional (>50kW)*
  - SMART Meter Program
  - Leveraging Energy Conservation and/or Load Management Program
  - Load Control Initiative
  - On-the-Bill Financing

## ***Distribution Loss Reduction***

- Voltage Profile Management

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<sup>1</sup> Available at: [http://www.oeb.gov.on.ca/html/en/industryrelations/ongoingprojects\\_cdm\\_thirdtranche.htm](http://www.oeb.gov.on.ca/html/en/industryrelations/ongoingprojects_cdm_thirdtranche.htm)



### ***Distributed Energy***

- Load Displacement
- Stand-by Generators

### ***Overall Program Support***

- powerWISE Website and Brand Development
- Special Events Van
- General Program Support
- CDM Program Compliance

Each initiative or program was assessed using the OEB's Total Resource Cost (TRC) Test Guide<sup>2</sup> - as revised in October 2006.

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<sup>2</sup> Available at: [http://www.oeb.gov.on.ca/documents/cases/RP-2004-0203/cdm\\_trcguide\\_021006.pdf](http://www.oeb.gov.on.ca/documents/cases/RP-2004-0203/cdm_trcguide_021006.pdf)

## 2. Evaluation of the CDM Plan

In this third year of our CDM Plan, Enersource Hydro Mississauga successfully continued the development and implementation of programs started in 2005, reaching all market sectors.

Some components of our CDM plan relate to the deployment of Smart meters, which is being undertaken to support provincial government policy direction. The impact of Smart meters on kWh consumption and kW demand has not yet been definitively assessed.

Societal benefits resulting from our portfolio of CDM initiatives are evidenced by a 2007 TRC Cost-Benefit ratio of 2.0. Economics have improved from the previous 1.35 ratio, since accruing benefits over longer periods reduce the impact of high initial program costs.

A detailed discussion of the impact on energy conservation and demand management resulting from the implementation of the various programs and projects is presented in Section 3.

Energy savings and TRC benefits for each program heading are summarized in a table format in **Appendix A – Evaluation of the CDM Plan**.

Individual Programs' results are presented in a series of appendices in **Appendix B – Discussion of the Program**.

**Appendix C - Program and Portfolio Totals** presents an overview of CDM Programs and Portfolio results.

### 3. Discussion of the Programs

#### 3.1 Residential and Small Commercial (< 50 kW)

##### Co-Branded Mass Market Program

###### **Description**

This flagship Co-Branded Mass Market program (i.e. powerWISE) is a multifaceted approach to fostering the conservation culture in Ontario. Through development of a significant cooperative effort among six of the largest municipal LDCs, this program is becoming synonymous with initiatives such as Compact Fluorescent Lighting (CFL) Change-out programs, LED Christmas Lights Exchanges, Energy Star, Multi-Choice, energy audits, hot water heater blanket wraps, school based education and a host of other programs aimed at providing customers with the tools and education needed to reduce their energy usage. Access to online services such as energy consumption calculators, an energy expert and personalized energy audit services are components of this program.

###### **Target users**

Mass-market including residential, commercial and industrial.

###### **Benefits**

Increased awareness, improved product supply, culture shift, and significant demand and energy reductions.

##### Discussion of 2007 Activities

###### **powerWISE® Brand**

###### Action

- Hamilton Utilities Corp. (HUC) registered the powerWISE mark prior to CDM activities.
- During CLD CDM plan preparation, it was agreed that the CLD would collectively develop a co-brand. HUC offered powerWISE for joint ownership and the CLD agreed that we would use this mark.
- The MOE executed television, radio and print advertising campaigns with David Suzuki to raise awareness of the brand.
- Weekly conference call meetings were held with the communications subcommittee to coordinate all powerWISE and branding activities.
- The Ministry of Energy (Director of Communications) participates on weekly conference calls, as does the Ontario Power Authority (Director of Marketing).

###### Results to Date

- powerWISE is being used extensively by the CLD to brand CLD conservation programs.

- The powerWISE brand has been used by the Ministry of Energy in their 2007 advertising campaigns with David Suzuki.
- The MOE continued negotiations with HUC for ownership of the powerWISE brand. No resolution has yet been reached.

#### Next Steps

- No further action is required as the brand has been adopted by the Provincial government.

### **powerWISE Website**

#### Action

- The powerWISE website [www.powerwise.ca](http://www.powerwise.ca) was jointly developed and announced on April 1<sup>st</sup>, 2005.
- This website provides one common location for general electricity conservation information and useful industry links.
- Links have also been provided for customers to reach their CLD member's home website for specific local program information.

#### Results to Date

- From January 1 to December 31, 2007 the PowerWISE website has received over 167,000 visitors.
- We also receive several phone calls per day from Enersource customers wanting more information on conservation.

#### Next Steps

- Continue to develop and promote [www.powerwise.ca](http://www.powerwise.ca) in conjunction with the Ministry of Energy, as a source of energy conservation information.
- Continue to improve and enhance the website with new materials and applications.

### **Ontario Power Authority – Every Kilowatt Counts (EKC)**

The powerWISE coupon redemption retailer program developed last year by the CLD was adopted by the Ontario Power Authority and re-launched Province-wide as the EKC "Every Kilowatt Counts" Program, implemented through the Spring and Fall retail campaigns. The campaigns created enormous awareness and delivered over 12,500,000 kWh in energy savings in Mississauga or enough electricity to power almost 1,400 homes annually (2006 data). 2007 data not yet available at time of writing.

#### Action

- The Conservation Bureau of the OPA developed major Spring and Fall mass-market retail campaigns, to advance the penetration of energy efficient devices into the marketplace through point of purchase redeemable coupons.
- Coupon and information booklets were distributed through the mail to all Ontario households for each campaign.
- Spring Campaign. 1,179,626 coupons were redeemed province-wide.
  - EnergyStar CFL 15W bulbs
  - EnergyStar Ceiling Fans
  - Outdoor Motion Sensor
  - Dimmer Switch
  - Outdoor Solar Lights
  - Furnace and Air Conditioner Filters
- Fall Campaign. 1,551,328 coupons were redeemed province-wide. Enersource-specific results were not yet available from the OPA. Once they are, Enersource will apply for the LRAM benefits of this program.
  - EnergyStar CFL 15W bulbs
  - Seasonal LED lights (SLEDs)
  - T-8 Fixtures
  - EnergyStar Lighting Fixtures
  - Baseboard Programmable Thermostats
  - Lighting and Appliance Control Devices
  - Power Bar with Integrated Timer

#### Results to Date

- All Enersource Hydro customers received the coupon booklets both in spring and fall via an OPA direct mail campaign;
- Enersource distributed further coupon booklets at the Head Office reception lobby and at community events;
- Enersource distribution area-specific results were not yet available.
- In Ontario, the Campaigns produced savings of more than 7,800 kW peak electricity demand and more than 1.2 million MWh of energy savings, over the life of the products purchased.
- Savings are equivalent to the electricity needed to supply over 120,000 households for a year.

#### Next Steps

- The OPA continue to market and operate this program.
- Enersource will support program with local marketing if launched again by the OPA.
- Enersource to apply for the LRAM benefits of this program.

#### **Ontario Power Authority – Refrigerator Retirement Program**

- This pilot program closed in 2006. The Great Refrigerator Retirement Program is now an OPA administered program.

## **powerWISE Fleet Branding**

- This program is closed.

## **Code Green – TV Show**

- This program is closed.

## **Water Heater Tune-Up**

### Action

- The Tune-ups are completed by contractors who visit the homes of Mississauga residents with electric water heater tanks.
- The Tune-up team:
  - wraps a thin insulating jacket around the hot water tank
  - installs up to four compact florescent light bulbs
  - installs a low flow shower head
  - installs a water aerators for sink taps
- Customers are left with conservation literature.

### Results to Date

- 3<sup>rd</sup> Tranche funding for this program was exhausted by April 30<sup>th</sup> 2006.
- No 2007 activities were carried out under 3<sup>rd</sup> Tranche funding.
- 1,621 Tune-Ups were completed by April 30, 2006.
- This program continued under 2<sup>nd</sup> generation funding.
- Installed or distributed to-date:
  - 1,592 Efficient Showerheads
  - 4,062 Faucet Aerators
  - 1,200 Faucet Washers
  - 1,553 Tank Wraps
  - 6,546 CFLs
  - 307 m of hot water tubing insulation.
- Summer peak demand reductions of 102 kW are projected.
- Resulting annual energy savings are over 2,182,500 kWh.

### Next Steps

- The program was terminated at the end of April 2006 for lack of funding.
- This program was submitted to the OEB as a 2<sup>nd</sup> generation supplemental CDM plan and continued past April 30<sup>th</sup> 2006 under that funding mechanism.

### **LED Holiday Light Exchange**

- 3<sup>rd</sup> Tranche funding for this program was exhausted in April 2006 and no LEDs were distributed in 2007 under this funding mechanism.
- This program is closed.

### **Library Loan Program**

#### Action

- The “Watt Reader” energy measuring device lending program was developed in cooperation with the Mississauga Library System.
- Customers borrowing the Watt Reader device received operating instructions and two 13 W energy efficient compact fluorescent light (CFL) bulbs.
- Customers were also given details on how to calculate the cost of using any appliance, based on the readings from the device.

#### Results to Date

- Enersource customers borrowed the Watt Reader devices 927 times to the end of April 2006.
- 1,320 CFLs were distributed with the devices in 2006 to April 30<sup>th</sup>.
- Annual energy savings in were projected at about 144,000 kWh.
- Non summer-peak demand reductions for 2006 were 62 kW.

#### Next Steps

- This program was submitted to the OEB as a 2<sup>nd</sup> generation supplemental CDM plan and continued in 2006-2007 under that funding mechanism.

### **Mississauga Local Sponsorship**

- This sponsorship closed in 2006.

### **Co-Branded Mass Market Program Results**

- All initiatives’ results refer to April 30<sup>th</sup> 2006 when 3<sup>rd</sup> Tranche funding for this program was exhausted.
- 2006 annual energy savings from all initiatives are projected at about 14,647,000 kWh.
- Summer on-peak demand savings are projected at 472 kW and winter on-peak at 1,890 kW.
- TRC results yielded a Benefit-Cost ratio of 3.5.

## SMART Meter Pilot Programs

### **Description:**

Pilot programs for residential SMART meters were implemented to assess the metering, communications, settlement, load control and other technologies that could be used to accommodate the wider application of SMART meters in the future. Further, sub-metering opportunities for the purpose of customer information in bulk-metered situations (i.e. condominiums) may be considered.

Enersource Hydro Mississauga launched a pilot project, deploying 550 SMART meters in a central Mississauga community in the area of Queensway West. The program will evaluate many aspects of smart meter technology, from the information that consumers receive, to the data arriving to the utility.

### **Target users**

Residential and small commercial customers.

### **Benefits**

This program supports the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007. It will provide Enersource with the experience and knowledge needed to efficiently expand the use of SMART meters over the next several years.

In conjunction with appropriate rate structures, the program will provide customers participating in the pilot program with an incentive to reduce or shift energy consumption.

## Description of 2007 Activities

### **SMART Meters – Elster MeshNetwork Pilot**

#### Action

- No activities were carried out in 2007 under 3<sup>rd</sup> Tranche funding.
- A conservation forum and information session on the launch of a 550 home Smart Meter Pilot Program in a small neighborhood in Mississauga was held in July 2005.
- The purpose of the pilot was to test the Elster MeshNetwork SMART metering technology, with respect to meter functionality and communications performance, to determine if it would be a viable option for full deployment by Enersource.

#### Results to Date

- 550 SMART meters were installed under 3<sup>rd</sup> Tranche funding - all in 2005.
- As part of the SMART meter pilot we have combined a load control program. This offers an incentive or possible discount on the bill in exchange for us being able to control load during peak periods. We are currently recruiting customer volunteers in the SMART meter pilot area to participate in this program.



- There have been public meetings and information sessions held in 2005 and 2006 for the 550 residents to advise of the benefits of the SMART metering system.

#### Next Steps

- No more installations are planned for this pilot. We have combined conservation products with the SMART Meter, to leverage the smart meter potential as a behavioral changing device, with respect to energy consumption habits.
- As such, this program became the core of the SMART Avenues Program described in the following section.
- The program has now concluded.

## **SMART Avenues – A Community Pilot** (Previously named “Electric Avenue”)

### **Description**

A pilot neighborhood of selected homes and/or small businesses may be selected to become a “showcase” community to demonstrate the overall effectiveness of smart energy conservation initiatives including energy audits, retrofits, load control devices and SMART meters.

### **Target users**

Existing Residential customers.

### **Benefits**

This project will create a road map for LDC that will demonstrate the before and after impact of energy conservation and load control initiatives with the introduction of Smart Meters and Time-Of Use Rates.

## **Description of 2007 Activities**

### **Enersource/CLD RFP – Residential Load Control**

#### Action

- This program is part of the Smart Meter program.
- As part of the Smart Meter program, we intended to test various technologies within a home, to demonstrate the potential savings that could result from an increased awareness of consumption levels and patterns through the day.
- Customers that receive a Smart Meter will eventually be able to use electricity more knowledgeably because of these technologies, once they receive Time-of-Use (TOU) rates.

#### Results to Date

- A Smart Avenues Community of 550 residents in the same neighborhood was equipped with Smart Meters, to form the core of this pilot program.
- The 550 customers have been well advised through public meetings and information sessions – including a video CD - of our plans, which included a number of new technologies and initiatives:
  - In-Home Displays
  - Time-of-Use Clocks
  - Smart Appliances
  - Power-Down on Peak
  - Peak Saver
- 80 customers have signed up to-date for the Smart Metering Web Presentment Page.
- To increase customers’ awareness of their consumption, 4 different In-Home Display devices were sourced or developed:
  - Power consumption and cost monitoring device 1.

- We experienced technology problems with this device and decided to proceed with alternative technologies.
  - Power consumption and cost monitoring device 2.
    - We found that the installation of this device was prohibitively expensive and therefore did not go further.
  - Power consumption and cost monitoring device 3.
    - This monitoring device is still at a pre-commercialization development stage and therefore is not deployable yet.
- Enersource developed a Time of Use clock designed to clearly indicate time-of-use periods. We plan to deploy them together with the distribution of the Smart Meters.
- The Power-Down on Peak pilot project has ended and the consultant's report submitted to us. Results indicate that an average of 3.5 kW of DR capacity per household are available from the 8 homes sampled within the Smart Avenues community.
- In order to get as many Peak Saver thermostats installed in the Smart Avenues community, a Home Tune-up program was also offered. As part of the Home Tune-up package, customers receive the Peak Saver programmable thermostat.
- There have been 7 customers who have received the Peak Saver home tune up out of a goal of 50.
- The lack of TOU Rates and the problems with the supply of essential technologies or the poor take up on certain initiatives severely limited the scope of the program, which resulted in poor TRC results.
- Annual energy savings are projected at 9,471 kWh and 35 kW of avoided summer peak demand. Too early to observe behavioral changes.
- The Peak Saver/Home Tune-up program was re-marketed in early 2007, in order to meet the goal of 50 installations within Smart Avenues.

#### Next Steps

- None planned at this time.
- Funding for this program has been exhausted and is therefore terminated.

## Residential Load Control Initiative

### **Description**

Load control uses a real time communications link to enable or disable customer loads at the discretion of the utility. These controls are usually engaged during system peak periods or when required to relieve pressure on the system grid and may include such “dispatchable” loads as electric hot water tanks, pool pumps, lighting, air conditioners, etc. For this demonstration project the primary focus will be controlling central air conditioning units.

### **Target users**

Direct load control applies to all market segments. Though the control systems and technologies may vary by market segment, the methodology remains the same. This demonstration project will be marketed to residential and small commercial customers that have central air conditioning units and/or electric water heaters and/or pool pumps.

### **Benefits**

Load control allows customers to respond quickly to external price signals. This also provides a mechanism for utilities to relieve pressure on constrained areas within the distribution grid and also reduces the need to bring on large peaking generators.

## Description of 2007 Activities

### Residential Load Control Initiative

#### Action

- Enersource is targeting 1,600 residential and 200 small commercial customers to control their central air conditioners with outside condensers.
- In addition to central air conditioners, customers with electric water heaters and/or pool pumps will be encouraged to have controls installed on those devices.
- Carry out 2 Direct Mail campaigns directed to customers.

#### Results to Date

- A web portal site for customers to remotely change their thermostat setting was set up.
- Over 12,000 direct mail pieces were sent out in 2 Direct Mail campaigns.
- Success of Direct Mail campaign was tracking at approximately 2%.
- The control device is a radio-controlled programmable thermostat.
- Based on contractor’s feedback, the recruitment of host sites and installation of programmable thermostats proceeds well, according to plan.
- 1,570 thermostat were installed in 2007, including seven in the Smart Avenues community, under this program funding mechanism.
- Installations continued in the second half of 2007, under a different funding mechanism.

## Next Steps

- Continue to recruit host sites, according to the OPA funding mechanism.

## Social Housing Program

### **Description**

The Social Housing Sector is a prime candidate for CDM incentives, due to funding constraints that characterizes it and high incidences of electric heating.

### **Target users**

Local social housing corporations, non-profit homes and co-op housing.

### **Benefits**

Synergies can be created through the combined initiatives of the various agencies.

## Description of 2007 Activities

### **Enersource Social Housing Initiative**

#### Action

- We have combined this program with some of our mass market programs. As a result, select customers are approached with these programs (e.g., the Water Heater Tune Up program).
- We are working with a non profit hi-rise building, to determine feasibility of implementing home tune up for these suites, including better control of baseboard heaters through programmable thermostats.
- We are currently directing two initiatives in this sector: Home Tune-ups and Water Heater Tune-ups.

#### Results to Date

- A lighting retrofit project at the local Food Path facility has been completed. Enersource provided 100% grant for this lighting retrofit.
- Other lighting and unitary A/C retrofits were performed at four Social Housing communities.
- Over \$130,000 were invested, with projected avoided costs over the life of the equipment of more than \$400,000.
- Savings for these projects will be over 1,000,000 kWh per year and more than 6,000,000 over the life of the equipment installed.
- The program was well received and appreciated by the customers.
- We worked with the following two agencies (Winter Warmth, Share the Warmth), as channels to recruit customers in the Social Housing sector.
- In 2005 and 2006 we completed over 300 tune-ups for Social Housing units.
- We have worked with the local food banks, to help identify and help needy residents in lowering their energy costs.
- In 2007 we provided grants for two Social Housing buildings, in which lighting was retrofitted.

#### Next Steps

- Program has concluded.

## **3.2 Commercial, Industrial and Institutional (> 50 kW)**

### **SMART Meter Commercial Programs**

#### **Description**

The Ontario Government has established targets for the installation of 800,000 residential smart meters by December 2007 and for all Ontario customers by December 2010. These meters will assist establishing a 'conservation culture' in Ontario. In conjunction with appropriate rate structures, they will encourage customers to conserve energy or shift energy use.

Enersource will conduct a pilot program for commercial SMART meters, to assess the metering, communications, settlement, load control and other technologies that could be used to accommodate the wider application of SMART meters in the future.

The pilot project was launched in 2006, for the investigation of sub-metering opportunities in bulk-metered situations (i.e. condominiums). The principal aim will be to provide end-use customers with information related to their energy consumption habits.

#### **Target users**

Commercial, Industrial and Institutional customers (>50 kW).

#### **Benefits**

This program supports the Ministry of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007. It will provide Enersource with the experience and knowledge needed to efficiently expand the use of SMART meters over the next several years.

In conjunction with appropriate rate structures, the program will encourage customers participating in the pilot program to conserve or shift energy use.

### **Description of 2007 Activities**

#### **SMART Meters – Commercial Pilot**

##### Action

- Identify two multi-residential complexes for conversion from bulk commercial metering to individual smart meters in 2006.
- Convert at least one building.

##### Results to Date

- A multi-residential all electric complex was converted.
- A total of 201 SMART meters were installed, to service 186 units and various services.
- Billing by individual metering started in July 2006.
- Preliminary results indicate there were savings of approximately 17%.



- A second building was identified, but the Condominium Board eventually declined to participate in the program, due to issues with responsibility of condominium owners for delinquent accounts.
- A report has been completed for this program.

#### Next Steps

- The program has concluded.

## Leveraging Energy Conservation

### **Description**

The CLD is working collectively to develop a program (The powerWISE Business Incentive Program) that will give financial incentives to qualified customers that implement energy conservation projects.

The objective of this program is to leverage energy conservation and load management opportunities within the commercial, industrial and institutional sectors. This program will be offered in addition to existing funding (NRCan, Enbridge) to advance market uptake.

The LDCs are well positioned to introduce such programs to their customer base. Work will be conducted with the existing program providers to maximize leverage opportunities. Promotion will potentially include face-to-face meetings, conferences and seminars.

Within this framework, Enersource has implemented a Business Incentive Program, through which financial incentives are given to qualifying businesses that install energy efficient technologies within their facilities.

### **Target users**

Customers that have an average peak demand of 50kW or more, including schools, large commercial, institutional, industrial, and municipal facilities.

### **Benefits**

Customer awareness and additional incentives will help advance market uptake of audit services, feasibility studies and retrofit opportunities already established within the government program framework. The incentives provided through this program lower the simple payback of an energy efficiency project, to enable customers to move forward with implementation.

## Description of 2007 Activities

### **powerWISE Business Incentive Program**

#### Action

- The program was made available to customers in the Commercial, Industrial and Institutional (>50 kW) sectors.

#### Results to Date

- 9 projects were pre-approved for incentives. Incentives paid to the 9 customers were \$145,000.
- The original funding for this program has been fully allocated and no more projects could be considered. The budget, however, was increased slightly

(from \$225K to \$281K). This allowed for a few more projects to be completed through PBIP.

- Based on results to-date, expected annual energy and demand savings are over 6,444,000 kWh and 755 kW (summer peak). Over the life of the retrofitted equipment more than 40 million kWh will be saved.
- Benefit-Cost ratio for the program was over 2.

#### Next Steps

- No more projects can be accepted under PBIP.
- Monitor and evaluate programs, to measure and verify savings as projects are completed.
- We will continue to work with the OPA's funding model for this program.

## **Commercial Industrial & Institutional (CI&I) Load Control Initiative**

### **Description**

Load control is part of our developing Demand Response (DR) initiatives. It aims at developing suitable systems to free up capacity during critical times of severe system demand.

This program uses a Web-based load controller, with a real time communications link, to enable or disable designated customer loads at the discretion of Enersource.

These controls are usually engaged during system peak periods or when required to relieve pressure on the system distribution grid.

### **Target Users**

Larger commercial, industrial and institutional customers.

### **Benefit**

Demand control provides lower costs and increased stability for customers and utilities.

## **Description of 2007 Activities**

### **CI&I Load Control**

#### Action

- Enersource has developed and launched a demand response program for the control of loads in the commercial and industrial sectors.
- Enersource aggregates all load reduction capacities offered by customers and administers customer participation in IESO and OPA demand response programs.
- There are two categories of customers in our program. The first category (on-call curtailment) of customers will not require the installation of load control equipment. They will reduce load upon receiving notification from Enersource.
- In the second category, load reduction equipment will be required to be supplied and installed by Enersource's contractor.

#### Results to Date

- An internal process of administering the demand response has been completed and a DR Control Room was built for load dispatch.
- Under On-Call Curtailment 2 industrial customers signed our demand response agreement with total capacity of 2,140 kW.
- Other customers are in various stages towards contract signing.
- We enrolled customers with the IESO and OPA making capacity available in summer of 2007. There were no calls for curtailment.
- Total capacity under control at the end of 2007 is over 5 MW.
- TRC Benefit-Cost Ratio was calculated at 3.0.

## Next Steps

- EHM will continue to maintain the EHM DR Control Room, to allow for the dispatch of these loads, when required by the OPA and IESO.
- EHM will submit a custom application to the OPA in 2008 and seek funding to continue with this program.
- Enersource will continue to obtain signed agreements from customers, regarding demand response.
- Enersource will continue to spend the remaining 3<sup>rd</sup> tranche funding for this project until the funds are completely depleted.

## **On-the-Bill Payment Plan** (Previously Named "On-the-Bill Financing")

### **Description**

On-the-Bill Financing will start with a pilot offering, which will be developed to help remove a significant energy conservation purchase barrier.

This program will allow customers to finance their conservation investment off their balance sheet via an "expense budget" on their hydro bill, instead of having to contend with scarce capital dollars. Financing arrangements will be made with third party investment organizations and payment amounts will be presented on the customer's hydro bill.

### **Target Users**

Larger commercial, industrial and institutional customers.

### **Benefit**

Program will facilitate the adoption of capital intensive energy conservation measures.

## **Description of 2007 Activities**

### **On-the-Bill Payment Plan**

#### Action

- Advise CI&I customers and a select number of energy conservation consultants of this program through a direct mail marketing initiative. The mailing included specific marketing material and a Pre-Qualification form designed to capture customer and proposed project information (including costs and benefits), for an initial screening.
- Enersource will work with CitiCapital, the financial services provider for this program, on the application forms and other elements of the program.
- Customers will be advised of this program through various marketing initiatives such as commercial customer newsletters and bill messaging.

#### Results to Date

- This program was officially launched in October 2006.
- At present, we have 5 approved and funded customers, 1 declined..
- Summer peak demand savings are 115 kW.
- Annual energy savings are over 652,000 kWh.
- TRC Benefit-Cost Ratio is over 1.0.

#### Next Steps

- EHM may decide to continue with this program as minimally operating costs are required.

### **3.3 Distribution Loss Reduction**

#### **Distribution Loss Reduction**

##### **Description**

The Distribution Loss Program is a broad network based initiative to drive greater efficiencies within the distribution grid. This program will identify opportunities for system enhancements. Items to be addressed may include, but are not limited to:

**Voltage Profile Management** - Changing voltage profiles at the distribution station level can result in a peak reduction at the controllable distribution stations. This is in addition to the IESO's voltage reduction program and will not interfere with the effectiveness of that program.

##### **Target users**

The results of this program will positively impact all of EHM's customers.

##### **Benefits**

Reduced electricity distribution system delivery losses will reduce system demand, relieve network capacity to accommodate growth, and reduce the requirement for new generating capacity in the Province. Costs associated with distribution system delivery losses are recovered through electricity distribution charges. Reductions in these costs will therefore benefit all customers.

#### **Description of 2007 Activities**

##### **Voltage Profile Management**

###### **Action**

- An RFP was issued in October 2005 for the procurement of a conservation voltage reduction system (CVRS).
- Steps were taken to implement a project in 2006 to reduce voltage at Grossbeak MS using an AdaptiVolt CVRS system, which controls the transformer on-load-tap-changer to optimize the voltage profile.

###### **Results to Date**

- A contract was awarded for the procurement and installation of a Conservation Voltage Reduction System (CVRS) at Grossbeak MS station.
- AdaptiVolt is the selected CVRS system; it controls the transformer on-load-tap-changer to optimize the voltage profile.
- Factory Acceptance Test on the Adaptivolt System was completed in early July 2006. Because of extreme weather conditions installation was not carried out, to avoid possible service interruptions.
- The project was considerably delayed because the EHM Load Centers could not accommodate the Potential Transformers (PT's) that were sourced.
- A new design of the installation was required. The installation became operational in July 2007.

- The completed report was verified by a third party. The verification test proved annual energy savings to be over 3,600,000 kWh, well above the 1,553,000 projected by an initial TRC. Peak demand reduction was measured to be 420 kW.

#### Next Steps

- No further action required at this time.
- The program has concluded.



## **3.4 Distributed Energy**

### **Load Displacement**

#### **Description**

Distributed generation behind the customer's meter provides an excellent opportunity to displace load from the local distribution system's grid in a very effective manner. Load displacement technology, such as combined heat and power systems, provides increased power efficiency and thermal systems. Combined with an existing or new district heating distribution system this technology contributes to the development of sustainable energy networks within Ontario's communities.

Other technologies such as micro-turbines, wind, biomass fuels and solar provide additional options to meet the customer's needs. This initiative will facilitate the development and implementation of these opportunities. Financial incentives will be considered based on the project's viability.

Development of educational and technology programs in conjunction with local colleges and universities may be considered. Small pilots or demonstration projects to promote alternative and renewable energy sources may also be considered.

#### **Target users**

Commercial, industrial, and residential, schools, colleges and universities.

#### **Benefits**

Benefits include additional capacity within the grid. Cleaner technologies result in reductions in green house gas (GHG) emissions. Other benefits include improved system reliability, reduced harmonics, backup power possibilities, education and skills development.

### **Description of 2007 Activities**

#### **Load Displacement**

##### Action

- Fund two renewable energy demonstration projects, matching funding on a dollar per dollar basis up to a maximum of \$150,000 for each project.
- Worked cooperatively with the City of Mississauga and the Region of Peel to identify suitable demonstration projects, like photovoltaic roof panels.

##### Results to Date

- Consideration was given to the Region of Peel and the City of Mississauga who have both proposed renewable energy projects to Enersource.

- One project will demonstrate photovoltaic roof panels at a major sports centre within the City, with a capacity of 25.2 kW and projected energy savings of 29,000 kWh annually.
- The Peel Region project will be installed at a waste water treatment plant, with a capacity of 10.4 kW and projected energy savings of 12,700 kWh annually.
- Both installations were in progress in 2007.
- We continued to support the customers during all phases.

#### Next Steps

- Continue contacts with the Region and the City to monitor and evaluate performance, once projects are operational in early 2008. Finalize TRC forecast.
- Pay out incentives, once projects have been completed and costs finalized.
- No further action will be required.

## **Stand-by Generators**

### **Description**

This program provides for the use of customers' existing standby generators when required and/or economical. Environmentally friendly generators will be the primary focus of this initiative however all generators may be considered if needed during an emergency.

Enersource will act as an aggregator of loads to be made available for the market place on a moment's notice, when economical to do so or during critical peak conditions.

### **Target Users**

Commercial and industrial customers with sufficiently sized standby generators.

### **Benefits**

Reduction of customer and system peak demand and energy costs. This additional supply may be able to bid into the Ontario energy market in the future.

## **Description of 2007 Activities**

### **Standby Generators**

#### Action

- The CLD engaged a consultant to study technical, financial and operational issues of a DR program dispatching stand-by generators.
- Generators will be controlled from a single dispatch point at Enersource.
- Aggregate loads, to make them available during times of supply constraints.

#### Results to Date

- The design and development of a Demand Response Control Room, which will become the single dispatch point for demand management, was completed.
- A 1.2 MW standby natural gas generator was installed and commissioned at Enersource and is available for dispatch.
- Enersource has registered this generator with the IESO under the Emergency Load Reduction Program.
- We have a total of 8 participating customers.
- A major food retailer has agreed to use its natural gas stand-by generators at three locations in Mississauga to participate in the Enersource Demand Response Program. Enersource paid for the rewiring of loads required to transfer the load to the generators during demand response events.
- An estimated total of 100 kW of demand response capacity can be achieved through the food retailer projects..
- We have received applications for our demand response program from the GTAA airport (2,000 kW) and from two industrial customers (2,900 kW).

- Currently, we have 6,205 kW of dispatchable load. 2.8 MW are available in summer.
- TRC results show a 2.5 Benefit-Cost ratio.

#### Next Steps

- Enersource will continue to obtain signed agreements from customers, regarding demand response.
- Enersource will apply to OPA and IESO to enroll the participating generators into the market.

## **3.5 Overall Program Support**

### **Description**

Several supporting initiatives were considered such as an annual Key Account Conference, Home Show participation, an energy conservation website, customer newsletters, staff training and media support activities etc.

Enersource launched the powerWISE Brand and powerWISE Website, already described in Section 3, and the Special Events Van Team. The latter was created for the purpose of educating the public about energy conservation and ways for consumers to reduce their electricity bills. The team is constantly on the road with the natural gas fuelled van, interacting with the public. The van is promotionally wrapped in energy saving tips and graphics.

The team represents Enersource Mississauga at various community venues. As part of the energy efficient message, our students hand out various promotional items including showerheads, compact fluorescent lamps, LED light sets and brochures.

This program also offers general support for all programs, with various marketing, consulting, management and general support of all CDM programs.

### **Target Users**

All customer classes including the Low Income and Social Housing customers.

### **Benefits**

Supports existing programs and drives energy conservation awareness that will facilitate the culture change in Ontario.

## **Description of 2007 Activities**

### **Special Events Van**

- Utilize the special events team to talk to customers about energy conservation, by participating in community events like Carassauga, the Bread and Honey Festival, the Islamic BBQ and similar.
- Distribute CFL bulbs, to foster the energy saving message.
- Distribute LED Christmas lights for the festive season.

### **Results**

- 3<sup>rd</sup> Traunche funding was exhausted by the end of April 2006.
- Under 3<sup>rd</sup> Traunche, a total of 10,240 CFLs and thousands of educational and promotional items were distributed, to contribute spreading the energy efficiency and conservation message among the residents of Mississauga.
- To-date, they have participated at 50 events – 10 of which in 2006 - and made several 'drop-offs' at libraries and other venues.
- 3<sup>rd</sup> Traunche annual energy savings from distributed CFLs were calculated at 244,250 kWh.

- For TRC purposes, these results were included under the Co-Branded Mass Market Program, which served as the source for funding this initiative.

#### Next Steps

- 3<sup>rd</sup> Tranche funding for this program was exhausted and the program terminated.
- This program was submitted to the OEB for 2nd Generation Supplemental Funding. It continued in 2007 under that funding mechanism, once approved.

### **Regulatory Reporting**

#### Action

- A regulatory compliance and reporting function was created in order to validate the project approval process, track projects and monitor and verify results.

#### Results to Date

- Program control and reporting processes were developed.
- All program benefits were validated through TRC cost test screening, in compliance with OEB TRC Guide.

#### Next Steps

- Continue with regulatory compliance and reporting function.

### **General Program Support**

#### Action

- To offer general management and support of all programs as required.
- General overall marketing and consulting help to establish conservation culture.

#### Results to Date

- All programs benefited from the general support and management function.

#### Next Steps

- EHM will continue to offer the general support and management required to implement the programs specified in this report.

## 4. Lessons Learned

Enersource has identified “lessons learned” in the following aspects of CDM program development and implementation:

- Customer decision making factors and time required for them to make a decision
- Customer behaviour
- Opportunities and relevant constraints
- Budgeting and other aspects of financial management.

Enersource found that consumers’ decisions were influenced by a number of factors. All customer groups want a tangible demonstration of ‘what’s in it for them’.

- For residential customers: a simple demonstration of the net economic benefit of participating in a program or imparting the customer with a sense of responsibility for achieving a solution to a greater problem.
- For small commercial customers: a simple demonstration of a short payback period arising from a program that does not conflict with their business.
- For large commercial customers: a demonstration of a reasonably short payback period that does not disrupt their core business.
- For large use customers: a demonstration of a direct economic benefit and, perhaps, an accompanying qualitative benefit (e.g., increased reliability through fewer interruptions).

Enersource has also found that for the vast majority of its customers electricity is not considered a significant part of their operating costs. Therefore, projects need to make economic sense for their participation.

Another ‘lesson learned’ concerns the risks associated with differing levels and degrees of customer involvement. CDM programs that rely on the utility remotely controlling loads achieve more consistent results than do programs that rely on customers to respond to price signals or public appeals.

In the future, Enersource will give greater priority to programs designed to reduce both base load and peak load consumption. Such programs are capable of delivering energy reduction and demand reduction benefits, year round not necessarily in a season. From a distribution system operation perspective, reductions in base load and peak load provide enhanced operational flexibility and may relieve operating constraints. From a broader province wide system perspective, reducing base load and peak load gives the province more operating flexibility when required.

Enersource continues to believe that collaborative programs are highly desirable given that they rely on a consistent message and allow many parties to apply successful programs, leveraging each other’s knowledge. However, EHM was surprised at the complexity of designing and administering joint programs – from the initial negotiation of enforceable legal instruments to the after the fact analysis of results.

Enersource appreciates the insights conveyed by the OEB's TRC Guide – in particular, the value it places on summer peak demand reductions. A tangible 'lesson learned' is to identify, evaluate and promote summer peak reduction programs as a priority. A direct consequence of application of the TRC Guide is an appreciation that the CFL Lighting Program is not a priority program, based on summer peak system benefits, but rather that its true value is in its ability to assist in developing a conservation culture and serving as a vehicle that allows the distributor to convey its conservation message to its customers.

There are many benefits to multi-year funding. Multi-year funding can reduce the year-over-year uncertainty regarding budget and program continuity that often comes with funding on a year-by-year basis. It also allows us to better plan and manage the resources needed to deliver CDM programs. Longer term funding allows a more strategic approach to program planning, and the implementation of a portfolio of programs.

Multi-year funding can more closely match the requirements of customers, especially commercial and industrial customers as the sales cycle for these customers tends to be longer.

We discovered the need for additional resources in marketing and communications will continue to grow as new CDM programs are developed and piloted. Marketing these types of programs requires specialized skill sets. Going forward, the industry will have to work hard to attract candidates with the right type of skills.

In 2007, there was a gap between OEB funding and the start of OPA programs. The gap resulted in a loss of traction in the marketplace for program delivery. The key lesson learned is that once funding for a program begins, it shouldn't stop then restart; if this happens, the front-end costs increase as do overall development and implementation costs.

Lastly, Enersource has appreciated that CDM programs require a greater level of operational expenditures than capital expenditures, especially in the initial design stages. The costs to identify, develop and then deliver successful CDM programs are expenses of the period for financial reporting purposes. This fact will be applied to appropriately resource future programs and initiatives.



## 4.1 Comments on Program Success

Overall we feel that the first two years of our program was successful. Full benefits from all our CDM Programs have started to be realized in 2006 and will continue through and beyond 2007.

The following Table summarizes results:

	Successful? High (H) Medium (M) Low (L)	Continue?	Notes
<b>Residential and Commercial &lt;50kW</b>			
Co-Branded Mass Market	Yes – H	Yes	Significant interest in mass market for techniques for saving energy.
SMART Meter Pilot Programs Residential	Yes – M	No (not with CDM funds)	As part of Provincial directive.
Residential Load Control Initiative	Yes –H	Yes	Residential Load Control was successful in 2007. It is now offered province-wide by OPA.
SMART Avenues Program (Previously called Electric Avenue)	No - L	No	Not cost effective.
Social Housing Program	Yes	Yes	Program should be integrated into our other programs (i.e. Mass Market and Events Van).
<b>Commercial Institutional and Industrial &gt;50kW</b>			
SMART Meter Program Commercial	Yes - M	No (not with CDM funds)	
Leveraging Energy Conservation or Load Management	Yes - H	Yes	Currently funded by the OPA.
CI&I Load Control	Yes - H	Yes	Very good TRC results. Seeking funding from the OPA.
Off-the-Bill Payment Plan	Yes - M	Yes	This is a great program for all LDC to implement at a low cost.
<b>Distribution Loss</b>			

<b>Reduction</b>			
Voltage Profile Management	Yes - H	Yes (not using CDM funds)	Significant potential for improving distribution efficiency.
<b>Distributed Generation</b>			
Load Displacement	Yes - H	Yes	Good for promotion of renewable energy projects.
Standby Generators	Yes - H	Yes	Significant potential for on-peak load reduction.
<b>Overall Program Support</b>			
Special Events Van	Yes - M	Yes	These activities support all the program areas and assist with marketing, promotion and governance. They also help the government in promoting a conservation culture.

## 5. Conclusions

The past three years of Conservation and Demand Management were successful for Enersource, although CDM Program development and implementation remains a complex and time-consuming process, with procurement and legal requirements often being more costly and time consuming than originally expected.

We were able to maximize our results, through collaborative efforts with the Coalition of Large Distributors, which allowed us to launch many initiatives in a similar manner, providing for more consistent messaging in our promotional campaigns, while leveraging individual distributors' investments. By sharing knowledge and market experience, we were able to optimize our individual CDM plans as well.

Building on what started in 2005, 2006 was a year of further program development, implementation and continued learning for Enersource. 2007 saw the maturing of the CDM program, with the details of each program becoming clearer with increasing implementation of initiatives or replication of the same.

While our CDM Program proved to be cost-effective overall, some initiatives suffered from high initial set-up costs. However, economic results for 2007 improved over 2006, because programs launched throughout and prior to 2006 had time to operate for a longer period and generate more of the expected results, against lower required expenditures.

By December 31<sup>st</sup>, 2007, Enersource had invested approximately \$8.0M from the original 3<sup>rd</sup> Tranche CDM funding of \$8.263M. The program resulted in annual savings to-date of 31.9 million kWh.

In 2007 the CDM Program's benefit-cost (B/C) ratio was 2.0, however the overall B/C ratio was 1.74. The economics improved as there were increased savings against lower required expenditures, as programs matured.

The improving trend is also evidenced by comparing year-to-year cost effectiveness metrics, like \$/kWh and \$/kW. They now stand at \$0.031/kWh and \$507.71/kW, while overall 2006 results were \$ 0.045/kWh and \$ 607.69/kW.

In 2007, several of Enersource's 3<sup>rd</sup> Tranche programs were completed, either because they attained a pre-determined objective or because a pre-determined termination date occurred. A total of \$264,000 of unspent funds has been identified. Enersource has re-deployed these funds to support negotiations with the OPA. Assuming these negotiations are successful, Enersource will be in a position to further re-deploy these funds to recruit new DR Room participants.

Enersource had some very successful programs. In some cases, funding was exhausted in 2006. Enersource had to seek and obtain funding from other sources such as the Ministry of Energy and the OPA.

The CLD-developed powerWISE coupon redemption retailer program was adopted by the Ontario Power Authority and re-launched in 2006 as the “Every Kilowatt Counts” Spring and Fall retail campaigns. The campaigns created enormous awareness. In 2007 it delivered over 1,200,000 MWh in energy savings in Ontario.

Since its launch, Enersource CDM Program generated annual energy savings of almost 32,000,000 kWh or enough capacity to supply 3,500 homes annually.

In 2007 Enersource designed and implemented a dedicated DR Control Room for the aggregation and dispatch of enlisted loads during critical peak times. We have over 11 MW of dispatchable loads of which 6.2 MW is coming from stand-by clean generators.

The constraints facing the Provincial electricity distribution system are well known and have created a heightened sense of urgency for all users to contribute to a better management of our electricity demand. Enersource Hydro is committed to enhancing a culture of conservation in the Province and will work cooperatively with the Energy Board, the IESO, the Ontario Power Authority and other members of the Coalition of Large Distributors to make this happen.

Enersource’s role in delivering energy efficiency programs is well established and our customers are recognizing the value of conserving electricity. Our CDM Programs play an essential role in promoting and fostering a “cultural change” with respect to energy utilization in Mississauga.

## Appendix A - Evaluation of the CDM Plan

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

	<sup>5</sup> Cumulative Totals Life-to-date	Total for 2007	Residential and Small Comm <50	Comm Ind Inst >50 kW	Dist Loss Reduction	Dist Energy	Overall Program Support		<sup>4</sup> Smart Meters	Other #1	Other #2
Net TRC value (\$):	\$ 18,438,491	\$ 4,294,705	\$ 622,143	\$ 1,678,460	\$ 47,004	\$ 3,337,028	\$ (1,389,930)	\$ -		\$ -	\$ -
Benefit to cost ratio:	1.74	2.03	1.41	2.29	0.00	100.56	0.00	0.00		0.00	0.00
Number of participants or units delivered:	103,830	59,465	59,454	5	1	5	0				
Lifecycle (kWh) Savings:	243,863,553	134,372,149	99,337,249	35,034,900	0	0	0	0		0	0
Report Year Total kWh saved (kWh):	31,927,637	21,332,945	15,507,856	5,825,089	0	0	0	0		0	0
Total peak demand saved (kW):	14,661	5,716	1,566	1,380	0	2,770	0	0		0	0
Total kWh saved as a percentage of total kWh delivered (%):	0.20%	0.27%	0.20%	0.07%							
Peak kW saved as a percentage of LDC peak kW load (%):		0.35%	0.10%	0.09%	0.00%	0.17%					
<sup>1</sup> Report Year Gross C&DM expenditures (\$):	\$ 7,443,792	\$ 2,806,095	\$ 702,354	\$ 727,297	-\$ 47,004	\$ 33,518	\$ 1,389,930	\$ -	\$ 9,223	\$ -	\$ -
<sup>2</sup> Expenditures per kWh saved (\$/kWh):	\$ 0.031	\$ 0.02	\$ 0.01	\$ 0.02	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -
<sup>3</sup> Expenditures per kW saved (\$/kW):	\$ 507.71	\$ 490.90	\$ 448.39	\$ 527.11	\$ -	\$ 12.10	\$ -	\$ -		\$ -	\$ -
Utility discount rate (%):	6.07										

<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, 2007 CDM Annual report for third tranche will include 2006, 2005 and 2004 numbers, if any).

## Appendix B - Discussion of the Program

A. **Name of the Program:** Co-Branded Mass Market Program

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

powerWise™ is the flagship conservation program for Enersource Hydro Mississauga and five of Ontario's other major Local Electricity Distributors. It is a multifaceted approach to energy conservation in all sectors, designed to help foster a "conservation culture" in Ontario. Through development of a significant cooperative effort among six of the largest municipal LDC's, this program is becoming synonymous with initiatives such as Compact Fluorescent Lighting (CFL) change-out programs, LED Holiday Light exchanges, energy audits, hot water heater blanket wraps, school based education and a host of other programs aimed at providing customers with the tools and education needed to reduce their energy usage. Access to online services such as energy consumption calculators, an energy expert, and personalized energy audit services are components of this program.

**Measure(s):**

	Water Heater Tune-up	LED Light Exchange	Special Events Van
<i>Base case technology:</i>	Do Nothing	Incandescent String	Do Nothing
<i>Efficient technology:</i>	Efficient Showerhead, Faucet Aerator, Faucet Washer, Tank Insulating Wrap and Compact Fluorescent Bulbs.	LED Light String	Compact Fluorescent Bulbs.
<i>Number of participants or units delivered for reporting year:</i>	0	0	0
<i>Measure life (years):</i>	12,12,6,6 and 4	30	4
<i>Number of Participants or units delivered life to date</i>	1621	11000	8920

	Library Loan Program	Retailer Program	Refrigerator Retirement Progr.
<i>Base case technology:</i>	Incandescent Bulb	Incandescent Bulb, Do Nothing	Average Existing Stock
<i>Efficient technology:</i>	Compact Fluorescent	Compact fluorescent bulb, LED Christmas Lights, Programmable Thermostat, Indoor Timer, Outdoor Timer,	Retirement and Recycling
<i>Number of participants or units delivered for reporting year:</i>	0	56,676	1117
<i>Measure life (years):</i>	4	4,30,18,20,20,20 and 25	6
<i>Number of Participants or units delivered life to date</i>	2160	65262	1117

<b>B. TRC Results:</b>	<b>Reporting Year</b>	<b>Life-to-date TRC Results:</b>
<sup>1</sup> TRC Benefits (\$):	\$ -	2492364
<sup>2</sup> TRC Costs (\$):		
<i>Utility program cost (excluding incentives):</i>	\$ 7,851.00	\$ 846,392.00
<i>Incremental Measure Costs (Equipment Costs)</i>		
<b>Total TRC costs:</b>	<b>\$ 7,851.00</b>	<b>\$ 846,392.00</b>
<b>Net TRC (in year CDN \$):</b>		
<i>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</i>	\$ -	2.94

<b>C. Results:</b> (one or more category may apply)	<b>Cumulative Results:</b>			
<b>Conservation Programs:</b>				
<i>Demand savings (kW):</i>				
<i>Summer</i>	472			624.81
<i>Winter</i>	1890			1890
<i>Energy saved (kWh):</i>			<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<i>lifecycle</i>	92,249,585	14,646,944	127,603,037	19,439,741
<i>Other resources saved :</i>				
<i>Natural Gas (m3):</i>				
<i>Water (m3):</i>	131,654	10,971		671,380

**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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<b>D. <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:	\$ -	\$ 68,319.00
	Incremental O&M:	\$ 7,851.00	\$ 778,073.00
	Incentive:		
	Total:	\$ 7,851.00	\$ 846,392.00
Utility indirect costs (\$):	Incremental capital:	0 \$	-
	Incremental O&M:		
	Total:	0 \$	-

**E. Assumptions & Comments:**

**powerWISE Brand**

- powerWISE is being used extensively by the CLD, to co-brand CDM programs.
- Interest in the powerWISE brand was expressed by the Ministry of Energy, the OPA, Hydro One and other distribution utilities.
- The powerWISE brand has also been translated to Eco-Consumer for French language purposes.
- The powerWISE brand has been used by the Ministry of Energy in their 2006 advertising campaign.

**Next Steps**

- Extend the powerWISE brand to the Ministry of Energy, the OPA, Hydro One and other LDCs.
- Continue to develop and promote the powerWISE brand and website in conjunction with the Ministry of Energy and the OPA.

**powerWISE Website**

- powerWISE website has received over 167,000 visitors since its launch.

**Next Steps**

- Continue to develop and promote www.powerwise.ca in conjunction with the Ministry of Energy, as a source of energy conservation information.
- Continue to improve and enhance the website with new materials and applications.

**Water Heater Tune-Up**

- Over 1,620 Tune-Ups were completed to-date.

**Next Steps**

- This highly successful program will continue in 2007 under Supplemental Funding.

**LED Holiday Light Exchange**

- Enersource distributed approximately 11,000 LED light sets.
- 3rd Tranche funding was exhausted and no LEDs were distributed in 2006 under this funding mechanism.

**Next Steps**

- This program was submitted to the OEB as a 2nd generation supplemental CDM plan and continued in 2006 under that funding mechanism.

**Special Events Van**

- The Event Team attended 56 events in 2006, 10 of which under 3rd Tranche funding.
- 10,240 CFLs were distributed, including 1,320 CFLs distributed at Mississauga libraries, in 2006 under 3rd Tranche.

**Next Steps**

- Continue the program for 2007, under 2nd Generation Supplemental Funding.

**Library Loan Program**

- Enersource customers borrowed about 1,000 "Watt Reader" devices in 2006.
- 1,320 CFLs were distributed with the devices in 2006.

**Next Steps****■ Continue the program for 2006.OPA Every Kilowatt Counts Retailer Coupon Program**

- The Conservation Bureau of the OPA developed major Spring and Fall mass-market retail campaigns, to advance the penetration of energy efficient devices into the marketplace through point of purchase redeemable coupons.
- Coupon and information booklets were distributed through the mail to all Ontario households for each campaign.
- All Enersource Hydro customers received the coupon booklets both in spring and fall.
- About 57,000 coupons were redeemed locally

**Next Steps**

- Similar coupons distributions are planned for 2007.
- The Conservation Bureau will continue to operate this program.

**OPA Refrigerator Retirement Program**

- Enersource Hydro Mississauga is the delivery partner for the OPA Refrigerator Retirement program.
- The Refrigerator Retirement Program provides pick-up and recycling (a \$110 value).
- 1,117 old refrigerators were removed and properly recycled.

**Next Steps**

- The OPA will be reviewing the results after the pilots and determine whether the program rolls out across the province and what incentives

<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 Meter Residential

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

Pilot programs for residential SMART meters were implemented to assess the metering, communications, settlement, load control and other technologies that could be used to accommodate the wider application of SMART meters in the future. Further, sub-metering opportunities for the purpose of customer information in bulk-metered situations (i.e. condominiums) may be considered. This program supports the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007. It will provide Enersource with the experience and knowledge needed to efficiently expand the use of SMART meters over the next several years.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing		
Efficient technology:	SMART Meters		
Number of participants or units delivered for reporting year:	0		
Measure life (years):			
Number of Participants or units delivered life to date	550		

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):	\$ 9,223.00	\$ 253,146.00
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 9,223.00	\$ 253,146.00
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ -	0.00

C. <b>Results:</b> (one or more category may apply)	Cumulative Results:			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer	na	na	
	Winter	na	na	
Energy saved (kWh):	lifecycle	na	in year	Cumulative Lifecycle
Other resources saved :				Cumulative Annual Savings
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):				
<b>Demand Response Programs:</b>				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
<b>Power Factor Correction Programs:</b>				
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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<b>D. Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	Incremental capital:	\$ -	\$ 144,862.00
	Incremental O&M:	\$ 9,223.00	\$ 108,284.00
	Incentive:		
	Total:	\$ 9,223.00	\$ 253,146.00
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- A conservation forum and information session on the launch of a 550 home Smart Meter Pilot Program in a small neighborhood in Mississauga was held in July.
  - The purpose of the pilot was to test the Elster MeshNetwork SMART metering technology, with respect to meter functionality and communications performance, to determine if it would be a viable option for full deployment at Enersource.
  - The project was completed successfully in 2005.
  - 555 SMART meters were installed by the end of 2005.
  - Energy and peak load savings or shifting will come from behavioural changes of customers, once they learn to correlate time of usage rates with their consumption patterns.
- Next Steps
- Combine conservation products with the Smart Meter, to leverage the smart meter potential as a behavioural changing device, with respect to energy consumption habits.
  - Energy and summer peak load savings or shifting will potentially come from behavioral changes of customers, once they learn to correlate time of usage rates - when available - with their consumption patterns and associated costs.
  - This program will stop as a smart meter program as it has evolved beyond the original scope of just installing smart meters.
  - As such, this program is now at the core of the SMART Avenues Program described next.

<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.



**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:	-\$ 28,862.00	\$ 64,428.00
	Incremental O&M:	\$ 96,873.02	\$ 221,798.02
	Incentive:		
	Total:	\$ 68,011.02	\$ 286,226.02
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- This program is part of the Smart Meter program.
  - As part of the Smart Meter program we are testing various technologies within a home to demonstrate what would be required to demonstrate savings in a home which receives a smart meter.
  - Customers that receive a Smart Meter should eventually receive Time-Of-Use rates. We want to demonstrate the potential savings that may result in adopting these rates along with the technologies implemented.
  - The neighborhood has been selected and smart meters have been installed.
  - The customers have been well advised of our plans.
  - The lack of TOU Rates and problems with the supply of essential technologies or the poor take up on certain initiatives severely limited the scope of the program, which resulted in poor TRC results.
- Next Steps**
- Re-market the Peak Saver/Home Tune-up program in early 2007, in order to meet the goal of 50 installations within Smart Avenues.

<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 Initiative

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

Load control uses a real time communications link to enable or disable customer loads at the discretion of the utility. These controls are usually engaged during system peak periods or when required to relieve pressure on the system grid and may include such "dispatchable" loads as electric hot water tanks, pool pumps, lighting, air conditioners, etc. For this demonstration project the primary focus will be controlling central air conditioning units.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
<i>Base case technology:</i>	Do nothing		
<i>Efficient technology:</i>	LDC controlled programmable thermostats.		
<i>Number of participants or units delivered for reporting year:</i>	1368		
<i>Measure life (years):</i>	18		
<i>Number of Participants or units delivered life to date</i>	1570		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 1,962,575.28	\$ 2,252,370.76
<sup>2</sup> TRC Costs (\$):		
<i>Utility program cost (excluding incentives):</i>	\$ 1,393,941.18	\$ 1,765,699.18
<i>Incremental Measure Costs (Equipment Costs)</i>		
<b>Total TRC costs:</b>	<b>\$ 1,393,941.18</b>	<b>\$ 1,765,699.18</b>

**Net TRC (in year CDN \$):**

Benefit to Cost Ratio (TRC Benefits/TRC Costs): 1.4 1.3

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

**Conservation Programs:**

<i>Demand savings (kW):</i>	<i>Summer</i>	1094	1256
	<i>Winter</i>		

	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
<i>Energy saved (kWh):</i>	3,915,216	217,512	4,493,340	249,630
<i>Other resources saved :</i>				
<i>Natural Gas (m3):</i>				
<i>Other (specify):</i>				

**Demand Management Programs:**

<i>Controlled load (kW)</i>		
<i>Energy shifted On-peak to Mid-peak (kWh):</i>		
<i>Energy shifted On-peak to Off-peak (kWh):</i>		
<i>Energy shifted Mid-peak to Off-peak (kWh):</i>		

**Demand Response Programs:**

<i>Dispatchable load (kW):</i>		
<i>Peak hours dispatched in year (hours):</i>		

**Power Factor Correction Programs:**

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

**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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<b>D. Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	<i>Incremental capital:</i>	\$ 391,025.00	\$ 675,025.00
	<i>Incremental O&amp;M:</i>	\$ 180,865.20	\$ 268,623.20
	<i>Incentive:</i>		
	<i>Total:</i>	\$ 571,890.20	\$ 943,648.20
Utility indirect costs (\$):	<i>Incremental capital:</i>		
	<i>Incremental O&amp;M:</i>	\$ 822,050.98	\$ 822,050.98
	<i>Total:</i>	\$ 822,050.98	\$ 822,050.98

**E. Assumptions & Comments:**

- Mississauga Hydro is participating with other CLD members in the design and implementation of a Load Control program targeting residential and small commercial customers' central air conditioners with outside condensers.
- In addition to central air conditioners, customers with electric water heaters and/or pool pumps will be encouraged to have controls installed on those devices.
  - To-date, we installed 1570 programmable thermostats. Economics are negatively impacted by high fixed costs.
  - Indirect costs shown are projected costs to continue the program over the life of the equipment, introduced for TRC purposes.

**Next Steps**

- Installations continued in the second half of 2007 under a different funding mechanism.

<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):**

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent bulbs		
Efficient technology:	CFL bulbs, Water Heater Tuneup		
Number of participants or units delivered for reporting year:	293		
Measure life (years):	4.3, 6, 12		
Number of Participants or units delivered life to date	606		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 174,749.51	\$ 401,657.51
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 45,379.00	\$ 133,486.00
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 45,379.00	\$ 133,486.00
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.9	3.0

C. <b>Results:</b> (one or more category may apply)	<b>Cumulative Results:</b>			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer	26	52	
	Winter			
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	3,172,448	643,400	6,194,742	1,025,855
Other resources saved :				
Natural Gas (m3):				
Water (m3):	102,118	8,510		112,943
<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):				
<b>Demand Response Programs:</b>				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
<b>Power Factor Correction Programs:</b>				
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>Actual Program Costs:</b>		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	\$ -	\$ -
	Incremental O&M:	\$ 45,379.00	\$ 133,486.00
	Incentive:		
	Total:	\$ 45,379.00	\$ 133,486.00
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- We have combined this program with some of our mass market programs. As a result, a selected list of customers was approached with similar programs such as the Water Heater Tune Up program and the LED Seasonal Light program.
- We are working with a non profit 132 suites hi-rise to determine feasibility of implementing home tune up for these suites, including better control of baseboard heaters through programmable thermostats.
- A lighting retrofit project at the local Food Path facility has been completed. Enersource will provide 100% grant for this lighting retrofit, estimated to cost \$14,000. The program was well received and appreciated by the customers.
- We have identified 2 agencies (Winter Warmth, Share the Warmth), as channels to deliver this initiative to needy Social Housing clients.
  - We are progressing with Social Housing communities within the Region of Peel. To date we have completed 313 tune-ups, besides the 30 done in 2005.

**Next Steps**

- Finalize program design for low income and social housing house tune up and launch in early 2007.

<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 Meter Commercial Program

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

Enersource is planning a pilot program for commercial SMART meters, to assess the metering, communications, settlement, load control and other technologies that could be used to accommodate the wider application of SMART meters in the future.

The pilot project will be launched in 2006, for the investigation of sub-metering opportunities in bulk-metered situations (i.e. condominiums). The principal aim will be to provide end-use customers with information related to their energy consumption habits.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing		
Efficient technology:	SMART Meters		
Number of participants or units delivered for reporting year:	0		
Measure life (years):	15		
Number of Participants or units delivered life to date	201		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ -	\$ 370,463
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 26,909.00	\$ 247,109.00
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 26,909.00	\$ 247,109.00
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ -	1.50

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

**Conservation Programs:**

Demand savings (kW):	Summer	30
	Winter	80

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	0		6892979	459,532
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):		
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D. <b>Actual Program Costs:</b>		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	\$ -	\$ 178,959.00
	Incremental O&M:	\$ 26,909.00	\$ 68,150.00
	Incentive:		
	Total:	\$ 26,909.00	\$ 247,109.00
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- A multi-residential complex with 186 units was identified for retrofitting. Retrofit was completed in July 2006.
- Designated pilot building will shift from a single commercial account to multiple residential accounts, dependent on the number of its residential units.
- A total of 201 Quadlogic SMART meters were installed, to service 186 units and various services.
- Individual metering started in July 2006 and preliminary results - compared to the average of the previous 3 years - show savings of 17%.
- A second building was identified, but the Condominium Board eventually declined to participate in the program.

**Next Steps**

- Establish a baseline consumption for retrofitted building and compare with current data, to determine actually achieved savings.
- An alternative building will need to be sourced.

<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:** Business Incentive Program (previously named Leveraging Energy Conservation)

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

Existing energy conservation and/or load management programs such as NRCAN's Energy Innovators initiative, Enbridge initiatives etc. will be promoted and incentives may be provided to advance market uptake of these programs and implementation of the recommendations. The LDC's are well positioned to introduce such programs to their customer base. Work will be conducted with the existing program providers to maximize leverage opportunities. Promotion will potentially include face-to-face meetings, conferences and seminars.

Within this framework, Enersource has implemented a Business Incentive Program, through which financial incentives are given to qualifying businesses that install energy efficient technologies within their facilities.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing		
Efficient technology:	LED exit signs, high efficient		
Number of participants or units delivered for reporting year:		3	
Measure life (years):	6,8,15,12,13,6,5		
Number of Participants or units delivered life to date		9	

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 1,987,556.42	\$ 2,349,068.42
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 114,581.00	\$ 280,546.00
Incremental Measure Costs (Equipment Costs)	\$ 675,000.34	\$ 870,044.34
<b>Total TRC costs:</b>	<b>\$ 789,581.34</b>	<b>\$ 1,150,590.34</b>
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.5	2.0

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

**Cumulative Results:**

**Conservation Programs:**

Demand savings (kW):	Summer	701	839
	Winter		

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):	35034900	5,825,089	40767375	6,444,282
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):		
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D. <b>Actual Program Costs:</b>		<u>Reporting Year</u>	<u>Cumulative Life to Date</u>
Utility direct costs (\$):	Incremental capital:	\$ 58,697.00	\$ 100,697.00
	Incremental O&M:	\$ 55,884.00	\$ 179,849.00
	Incentive:	\$ 105,168.00	\$ 142,038.00
	Total:	\$ 219,749.00	\$ 422,584.00
Utility indirect costs (\$):	Incremental capital:	0	
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- The program was made available to customers in late 2005 and continued to funding exhaustion in 2007.
- Applications under the program consisted mainly of lighting upgrades.
- Of the projects pre-approved under the program, incentives were paid to 9 customers (9 projects), for a total of \$142,038.
- Other applications were still under evaluation at funding exhaustion.
- Based on results to-date, expected annual energy and demand savings are over 5.8 million kWh and 839 kW (summer peak).

**Next Steps**

- Accept a few more applications in 2007 as a result of a minor budget increase.
- Monitor and evaluate programs, to measure and verify savings as projects are completed.
- We will plan to rate-base this program in the 2008 rate application.

<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:** Commercial Industrial & Institutional (CI&I) Load Control Initiative

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

Load control is part of our developing Demand Response (DR) initiatives. It aims at developing suitable systems to free up capacity during critical times of severe system demand. This program uses a Web-based load controller, with a real time communications link, to enable or disable designated customer loads at the discretion of Enersource. These controls are usually engaged during system peak periods or when required to relieve pressure on the system distribution grid.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing		
Efficient technology:	Lighting Load Controllers.		
Number of participants or units delivered for reporting year:	2		
Measure life (years):			
Number of Participants or units delivered life to date	8		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 988,033.19	\$ 4,648,033
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 461,234.04	\$ 1,536,483.33
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 461,234.04	\$ 1,536,483.33
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.1	3.0

C. <b>Results:</b> (one or more category may apply)	<b>Cumulative Results:</b>			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer	679	5085	
	Winter	679	5085	
	<i>lifecycle</i>	<i>in year</i>	<i>Cumulative Lifecycle</i>	<i>Cumulative Annual Savings</i>
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):				
<b>Demand Response Programs:</b>				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
<b>Power Factor Correction Programs:</b>				
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>Actual Program Costs:</b>		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	\$ 75,400.00	\$ 279,400.00
	Incremental O&M:	\$ 385,834.04	\$ 552,863.04
	Incentive:		
	Total:	\$ 461,234.04	\$ 832,263.04
Utility indirect costs (\$):	Incremental capital:		\$ -
	Incremental O&M:		\$ 704,220.29
	Total:	\$ -	\$ 704,220.29

**E. Assumptions & Comments:**

- Enersource has developed and launched a demand response program.
- Enersource will act as an aggregator of all load reduction capacities offered by customers and will fully administer customer participation in the IESO and OPA's demand response programs.
- There are two categories of customers in our program. The first category (on-call curtailment) of customers will not require the installation of load control equipment. They will reduce load upon receiving notification from Enersource.
- In the second category, load reduction equipment will be required to be supplied and installed by Enersource's contractor.
- An internal process of administering the demand response has been completed.
- Under on-call curtailment we have signed up 5 MW of demand response capacity.
- In the second category, we have 2 projects controlled through ECO Power DR load control equipment.
- The total estimated demand response capacity under this category is 1,556kW.
- Enersource have terminated the contract with Electric City due to poor performance.
- TRC Benefit-Cost Ratio was calculated at 3.7.
- Annual energy savings are dependent on annual operating hours of hosting facility.

**Next Steps**

- Enroll curtailable loads in IESO-OPA demand response programs.
- We also need to implement an internal process of demand response.

<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:** On-the-Bill Payment Plan Program (previously named On-the-Bill Financing)

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

On-the-Bill Financing will start with a pilot offering, which will be developed to help remove a significant energy conservation purchase barrier.

This program will allow customers to finance their conservation investment off their balance sheet via an "expense budget" on their hydro bill, instead of having to contend with scarce capital dollars.

Financing arrangements will be made with third party investment organizations and payment amounts will be presented on the customer's hydro bill.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	T12 w/magnetic ballast		
Efficient technology:	T8 w/electronic ballast		
Number of participants or units delivered for reporting year:	0		
Measure life (years):	5		
Number of Participants or units delivered life to date	5		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):		\$ 231,554
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 19,405.00	\$ 107,013.00
Incremental Measure Costs (Equipment Costs)		
<b>Total TRC costs:</b>	<b>\$ 19,405.00</b>	<b>\$ 107,013.00</b>
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	-	2.2

C. <b>Results:</b> (one or more category may apply)	<b>Cumulative Results:</b>			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer			114.8
	Winter			
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):			3,259,565	651,913
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):				
<b>Demand Response Programs:</b>				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
<b>Power Factor Correction Programs:</b>				
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>Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	Incremental capital:	\$ -	\$ -
	Incremental O&M:	\$ 19,405.00	\$ 87,603.00
	Incentive:		
	Total:	\$ 19,405.00	\$ 107,013.00
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- Following an RFI issued to 4 potential Financial Services vendors, we contracted with CitiCapital.
- We advised CI&I customers and a select number of energy conservation consultants of this program through a direct mail marketing initiative. The mailing included specific marketing material and a Pre-Qualification form designed to capture customer and proposed project information (including costs and benefits), for an initial screening.
- At present, we have 5 approved, 1 declined and 1 funded customers.
- Enersource will work with the Financial Services Company on the application forms and other elements of this program.
- Customers will be advised of this program through various marketing initiatives such as commercial customer newsletters and bill messaging.
- The program has so far resulted in annual energy savings of over 637,000 kWh and summer peak demand savings are 137 kW.
- TRC Benefit-Cost Ratio is over 2.6. Forthcoming projects will show improved TRC results, because of the limited on-going costs.
- Prepare a Program-In-A-Box for this program so that other utilities can offer the same type of program to their customers.

**Next Steps**

- Continue working with CitiCapital to perfect all elements of the program's process flow.
- Continue promoting the program, through another mailing and at workshops organized for other CDM programs. Forthcoming projects
- Consider launching a similar program directed to the residential sector.

<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:** Distribution Loss Reduction

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

The Distribution Loss Program is a broad network based initiative to drive greater efficiencies within the distribution grid. This program will identify opportunities for system enhancements. Next steps will be to complete the engineering analysis and feasibility studies. Projects will be prioritized and selected based on the most attractive investment to results ratio. Items to be addressed may include, but are not limited to:

Voltage Profile Management - Changing voltage profiles at the distribution station level can result in a peak reduction at the controllable distribution stations. This is in addition to the IESO's voltage reduction program and will not interfere with the effectiveness of that

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing.		
Efficient technology:	Adaptivolt system.		
Number of participants or units delivered for reporting year:	1		
Measure life (years):	15		
Number of Participants or units delivered life to date	1		

<b>B. TRC Results:</b>	<b>Reporting Year</b>	<b>Life-to-date TRC Results:</b>
<sup>1</sup> TRC Benefits (\$):		
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	-\$ 47,004.00	\$ 570,280.00
Incremental Measure Costs (Equipment Costs)		
<b>Total TRC costs:</b>	<b>-\$ 47,004.00</b>	<b>\$ 570,280.00</b>
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

<b>C. Results:</b> (one or more category may apply)	<b>Cumulative Results:</b>			
<b>Conservation Programs:</b>				
Demand savings (kW):	Summer	420	420	420
	Winter	420	420	420
	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):		3,635,400	54,531,000	3,635,400
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):				
<b>Demand Response Programs:</b>				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
<b>Power Factor Correction Programs:</b>				
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>Actual Program Costs:</b>		<b>Reporting Year</b>	<b>Cumulative Life to Date</b>
Utility direct costs (\$):	Incremental capital:	-\$ 51,420.00	\$ 549,580.00
	Incremental O&M:	\$ 4,416.00	\$ 20,700.00
	Incentive:		
	Total:	-\$ 47,004.00	\$ 570,280.00
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- An RFP was issued in October 2005 for the procurement of a conservation voltage reduction system (CVRS).
- Steps were taken to implement a project in 2006 to reduce voltage at Grossbeak MS using an AdaptiVolt CVRS system, which controls the transformer on-load-tap-changer to optimize the voltage profile.
- AdaptiVolt is the selected CVRS system; it controls the transformer on-load-tap-changer to optimize the voltage profile.
- Factory Acceptance Test was completed on July 5th 2006 on the Adaptivolt System. Product was received in July, but because of extreme weather conditions installation was not carried out, to avoid possible service interruptions.
- The project was delayed, because EHM Load Centers could not accommodate the Potential Transformers (PT's) that were sourced.
- A new design of the installation was required and the installation became operational in July 2007.
- Tests by an independent agency forecasted annual energy savings to be over 3,600,000 kWh.
- Forecasted Peak demand reduction at the station is expected to be 420 kW.

**Next Steps**

- Consider installing other CVRS systems at other stations.

<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:** Load Displacement

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

Distributed generation behind the customer's meter provides an excellent opportunity to displace load from the local distribution system's grid in a very effective manner. Load displacement technology, such as combined heat and power systems, provides increased power efficiency and thermal systems. Combined with an existing or new district heating distribution system this technology contributes to the development of sustainable energy networks within Ontario's communities.

Other technologies such as micro-turbines, wind, biomass fuels and solar provide additional options to meet the customer's needs. This initiative will facilitate the development and implementation of these opportunities. Financial incentives will be considered based on the project's viability.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing.		
Efficient technology:	Photovoltaic panels.		
Number of participants or units delivered for reporting year:	2		
Measure life (years):			
Number of Participants or units delivered life to date	2		

	Reporting Year	Life-to-date TRC Results:
<b>B. TRC Results:</b>		
<sup>1</sup> TRC Benefits (\$):		
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 10,679.00	\$ 70,548.00
Incremental Measure Costs (Equipment Costs):		
<b>Total TRC costs:</b>	<b>\$ 10,679.00</b>	<b>\$ 70,548.00</b>
<b>Net TRC (in year CDN \$):</b>		
<hr/>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

**Conservation Programs:**

Demand savings (kW):	Summer			
	Winter			

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):				
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

**Demand Management Programs:**

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

**Demand Response Programs:**

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

**Power Factor Correction Programs:**

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

**Line Loss Reduction Programs:**

Peak load savings (kW):			
	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>Actual Program Costs:</b>		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	\$ 600.00	\$ 4,434.00
	Incremental O&M:	\$ 10,079.00	\$ 66,114.00
	Incentive:		
	Total:	\$ 10,679.00	\$ 70,548.00
Utility indirect costs (\$):	Incremental capital:	0	-
	Incremental O&M:		
	Total:	0	-

**E. Assumptions & Comments:**

- Fund two demonstration projects, matching funding on a dollar per dollar basis up to a maximum of \$150,000 for each project.
  - The budget for this program has been decreased from \$775K to \$362K. ■ Work cooperatively with the City of Mississauga and the Region of Peel to identify suitable candidate demonstration projects, like photovoltaic roof panels.
  - The City of Mississauga made a presentation to Enersource outlining several potential projects.
  - We agreed on demonstrating a 25.2 kW photovoltaic roof panel at the Hershey Centre.
  - The Region of Peel has also submitted a paper outlining potential projects.
  - They decided on one 10.8 kW project at a wastewater treatment plant.
  - No kW or kWh results to report in 2007. Both projects will be fully operational in early 2008.
- Next Steps**
- Continue contacts with the Region and the City to monitor and evaluate performance, once projects are operational in early 2008.
  - Finalize TRC forecast.
  - Pay out incentives, once projects are set and costs finalized.

<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:** Stand-by Generators

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

This program provides for the use of customers' existing standby generators when required and/or economical. Environmentally friendly generators will be the primary focus of this initiative however all generators may be considered if needed during an emergency.

Enersource will act as an aggregator of loads to be made available for the market place on a moment's notice, when economical to do so or during critical peak conditions.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing.		
Efficient technology:	Stand-by Generators		
Number of participants or units delivered for reporting year:	3		
Measure life (years):	10		
Number of Participants or units delivered life to date	8		

B. <b>TRC Results:</b>	Reporting Year	Life-to-date TRC Results:
<sup>1</sup> TRC Benefits (\$):	\$ 3,370,545.79	\$ 5,671,788.79
<sup>2</sup> TRC Costs (\$):		
Utility program cost (excluding incentives):	\$ 22,839.00	\$ 2,269,038.40
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 22,839.00	\$ 2,269,038.40
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	na	2.5

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

**Conservation Programs:**

Demand savings (kW):	Summer	2770	6205
	Winter	3435	6205

	lifecycle	in year	Cumulative Lifecycle	Cumulative Annual Savings
Energy saved (kWh):				
Other resources saved :				
Natural Gas (m3):				
Other (specify):				

**Demand Management Programs:**

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

**Demand Response Programs:**

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

**Power Factor Correction Programs:**

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

**Line Loss Reduction Programs:**

Peak load savings (kW):			
	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>Actual Program Costs:</b>		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	\$ 2,696.00	\$ 1,249,696.00
	Incremental O&M:	\$ 20,143.00	\$ 233,509.00
	Incentive:		
	Total:	\$ 22,839.00	\$ 1,483,205.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		\$ 785,833.40
	Total:	0	\$ 785,833.40

**E. Assumptions & Comments:**

- Generators will be controlled from a single dispatch point at Enersource. ■ A 1.25
- MW standby natural gas generator was installed and commissioned at Enersource.
- Enersource has registered this generator with the IESO under the Emergency Load Reduction Program. and IESO
- Negotiations were conducted with a number of prospective customers.
- Loblaw's has agreed to use its standby generators at three locations in Mississauga to participate in the Enersource Demand Response Program. Enersource will pay for the installation of transfer switches in order to transfer the load to the generators during demand response events.
- An estimated total of 100 kW of demand response capacity can be achieved through the Loblaw's projects.
- Other participants include GTAA airport (2,000 kW), Orenda (2,400 kW) and Glaxo Smith Kline (500kW).
- Currently, we have 2,770 kW and 3,435 kW dispatchable in summer and winter respectively.
- TRC results show a 2.5 Benefit-Cost ratio.

**Next Steps**

- Enersource will continue to obtain signed agreements from customers, regarding demand response.
- Enersource will apply to OPA and IESO to enroll the participating generators into the market.

<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:** Overall Program Support

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

Several supporting initiatives were considered such as an annual Key Account Conference, Home Show participation, an energy conservation website, customer newsletters, staff training and media support activities etc..

Enersource Hydro launched the following initiative:

powerWISE Brand and powerWISE Website  
These initiatives were already described in a previous section.

**Special Events Van**

The Special Events Van Team at Enersource was created for the purpose of educating the public about energy conservation and ways for consumers to reduce their electricity bills. The team is constantly on the road with the natural gas fuelled van, interacting with the public. The van is promotionally wrapped in energy saving tips and graphics.

The team represents Enersource Hydro Mississauga at various community venues. As part of the energy efficient message, our students hand out various promotional items including showerheads, compact fluorescent lamps, LED light sets and brochures.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Do nothing.		
Efficient technology:	Compact Fluorescent Bulbs.		
Number of participants or units delivered for reporting year:	0		
Measure life (years):	4		
Number of Participants or units delivered life to date	10,240		

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):	\$ 61,701.56	\$ 1,389,929.56
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	\$ 61,701.56	\$ 1,389,929.56
<b>Net TRC (in year CDN \$):</b>		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	na	na

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

**Cumulative Results:**

**Conservation Programs:**

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

**Demand Management Programs:**

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

**Demand Response Programs:**

Dispatchable load (kW):

Peak hours dispatched in year (hours):

**Power Factor Correction Programs:**

Amount of KVar installed (KVar):

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

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

**Line Loss Reduction Programs:**

Peak load savings (kW):

Energy savings (kWh):

lifecycle

in year

**Distributed Generation and Load Displacement Programs:**

Amount of DG installed (kW):

Energy generated (kWh):

Peak energy generated (kWh):

Fuel type:

**Other Programs (specify):**

Metric (specify):

**D. Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs (\$):	Incremental capital:	-\$ 52,197.00	\$ 101,730.00
	Incremental O&M:	\$ 113,898.56	\$ 1,288,199.56
	Incentive:		
	Total:	\$ 61,701.56	\$ 1,389,929.56
Utility indirect costs (\$):	Incremental capital:	0	\$ -
	Incremental O&M:		
	Total:	0	\$ -

**E. Assumptions & Comments:**

- Utilized the special events team to talk to customers about energy conservation, by participating in community events like Carassauga, the Bread and Honey Festival, the Islamic BBQ and similar.
- Distributed CFL bulbs, to foster the energy saving message.
- 3rd Traunche funding was exhausted by the end of April 2006.
- The program continued under 2nd Generation 2006 Supplemental Funding.
- Under 3rd Traunche, a total of 10,240 CFLs and thousands of educational and promotional items were distributed, to contribute spreading the energy efficiency and conservation message among the residents of Mississauga.
- Since January 2006, they have participated at 56 events – 10 of which under 3rd Tranche - and made several 'drop-offs' at libraries and other venues.
- 3rd Traunche annual energy savings from distributed CFLs were calculated at 244,250 kWh.
- For TRC purposes, these results were included under the Co-Branded Mass Market Program, which served as the source for funding this initiative.

**Next Steps**

- We are reviewing a number of different approaches that can be taken to implement the Bulb Drop portion of the 2nd Generation Supplemental Funding program, including outsourcing its delivery.
- In the meantime, the Events Van team continues to participate in events around the city to distribute CFLs, funded under 2nd Generation
- Continue to interact with the public to further spread the energy conservation message.

<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: **2007**

### 1. Residential and Small Comm <50 Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Co-Branded Mass Market Program	\$ -	\$ 7,851	-\$ 7,851	0.00	14,646,944	92,249,585	472	\$ 7,851
SMART Meter Residential	\$ -	\$ -	\$ -	0.00	0	0	0	\$ 9,223
SMART Avenues – A Community Pk	\$ -	\$ 68,011	-\$ 68,011	0.00	0	0	0	\$ 68,011
Residential Load Control Initiative	\$ 1,962,575	\$ 1,393,941	\$ 568,634	1.41	217,512	3,915,216	1,094	\$ 571,890
Social Housing Program	\$ 174,750	\$ 45,379	\$ 129,371	3.85	643,400	3,172,448	0	\$ 45,379
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Residential and Small Comm &lt;50</b>	<b>\$ 2,137,325</b>	<b>\$ 1,515,182</b>	<b>\$ 622,143</b>	<b>1.41</b>	<b>15,507,856</b>	<b>99,337,249</b>	<b>1,566</b>	<b>\$ 702,354</b>
Residential and Small Comm <50 Indirect Costs not attributable to any specific program								
<b>Total Residential and Small Comm &lt;50 TRC Costs</b>		<b>\$ 1,515,182</b>						
<b>**Totals TRC - Residential and Small Comm &lt;50</b>	<b>\$ 2,137,325</b>	<b>\$ 1,515,182</b>	<b>\$ 622,143</b>	<b>1.41</b>				

### 2. Comm Ind Inst >50 kW Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
SMART Meter Commercial Program	\$ -	\$ 26,909	-\$ 26,909	0.00	0	0	0	\$ 26,909
Business Incentive Program (previo	\$ 1,987,556	\$ 789,581	\$ 1,197,975	2.52	5,825,089	35,034,900	701	\$ 219,749
Commercial Industrial & Institutional (	\$ 988,033	\$ 461,234	\$ 526,799	2.14	0	0	679	\$ 461,234
On-the-Bill Payment Plan Program (I	\$ -	\$ 19,405	-\$ 19,405	0.00	0	0	0	\$ 19,405
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Comm Ind Inst &gt;50</b>	<b>\$ 2,975,590</b>	<b>\$ 1,297,129</b>	<b>\$ 1,678,460</b>	<b>2.29</b>	<b>5,825,089</b>	<b>35,034,900</b>	<b>1,380</b>	<b>\$ 727,297</b>
Comm Ind Inst >50 kW Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		<b>\$ 1,297,129</b>						
<b>**Totals TRC - Comm Ind Inst &gt;50</b>	<b>\$ 2,975,590</b>	<b>\$ 1,297,129</b>	<b>\$ 1,678,460</b>	<b>2.29</b>				

### 3. Dist Loss Reduction Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Distribution Loss Reduction	\$ -	\$ 47,004	-\$ 47,004	0.00	0	0	0	-\$ 47,004
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Dist Loss Reductio</b>	<b>\$ -</b>	<b>\$ 47,004</b>	<b>\$ 47,004</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-\$ 47,004</b>
Dist Loss Reduction Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		<b>-\$ 47,004</b>						
<b>**Totals TRC - Dist Loss Reduction</b>	<b>\$ -</b>	<b>-\$ 47,004</b>	<b>\$ 47,004</b>	<b>0.00</b>				

#### 4. Dist Energy Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Load Displacement	\$ -	\$ 10,679	-\$ 10,679	0.00	0	0	0	\$ 10,679
Stand-by Generators	\$ 3,370,546	\$ 22,839	\$ 3,347,707	147.58	0	0	2,770	\$ 22,839
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Dist Energy</b>	<b>\$ 3,370,546</b>	<b>\$ 33,518</b>	<b>\$ 3,337,028</b>	<b>100.56</b>	<b>0</b>	<b>0</b>	<b>2,770</b>	<b>\$ 33,518</b>
Dist Energy Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		<b>\$ 33,518</b>						
<b>**Totals TRC - Dist Energy</b>	<b>\$ 3,370,546</b>	<b>\$ 33,518</b>	<b>\$ 3,337,028</b>	<b>100.56</b>				

#### 5. Overall Program Support Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Overall Program S</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$ 1,389,930</b>
Overall Program Support Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		<b>\$ 1,389,930</b>						
<b>**Totals TRC - Overall Program Su</b>	<b>\$ -</b>	<b>\$ 1,389,930</b>	<b>-\$ 1,389,930</b>	<b>0.00</b>				

#### 6. LDC System Programs

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

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

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

#### 7. Smart Meters Program

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

Report Year Gross C&DM Expenditures (\$) → -

### 8. Other #1 Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program F			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Other #1</b>	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Other #1 Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ -						
<b>**Totals TRC - Other #1</b>	\$ -	\$ -	\$ -	0.00				

### 9. Other #2 Programs

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

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

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
Name of Program A			\$ -	0.00				
Name of Program B			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program D			\$ -	0.00				
Name of Program E			\$ -	0.00				
Name of Program C			\$ -	0.00				
Name of Program G			\$ -	0.00				
Name of Program H			\$ -	0.00				
Name of Program I			\$ -	0.00				
Name of Program J			\$ -	0.00				
<b>*Totals App. B - Other #2</b>	\$ -	\$ -	\$ -	0.00	0	0	0	\$ -
Other #2 Indirect Costs not attributable to any specific program								
<b>Total TRC Costs</b>		\$ -						
<b>**Totals TRC - Other #2</b>	\$ -	\$ -	\$ -	0.00				

### LDC's CDM PORTFOLIO TOTALS

	TRC Benefits (PV)	TRC Costs (PV)	\$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures (\$)
<b>*TOTALS FOR ALL APPENDIX B</b>	\$ 8,483,460	\$ 4,188,755	\$ 4,294,705	2.03	\$ 21,332,945	\$ 134,372,149	\$ 5,716	\$ 2,806,095
Other Indirect Costs not attributable to any specific program								
<b>TOTAL ALL LDC COSTS</b>		\$ 4,188,755						
<b>**LDC' PORTFOLIO TRC</b>	\$ 8,483,460	\$ 4,188,755	\$ 4,294,705	2.03				

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

\*\* The TRC information from this row is to be carried forward to Appendix A.