Conservation and Demand Management
2005 Annual Report

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

March 31, 2006

EXECUTIVE SUMMARY

This report is in compliance of the requirements of an oral decision the OEB issued on December 10, 2004 with respect to an application by the Coalition of Large Distributors (CLD)[1], filed in response to procedural order RP-2004-0203, which set out the process for how Local Distribution Companies might apply for approval of a Conservation and Demand Management (CDM) Plan. 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 Guideline for Annual Reporting of CDM Initiatives that the OEB issued in December 2005 and presents an account of the CDM initiatives and programs started by Enersource Hydro Mississauga (Enersource) in 2005, in fulfillment of the OEB approved CDM Plan.

In 2005 Enersource launched its CDM program and invested approximately $2.8M which resulted in savings of 4 million kWh. It should be noted that a number of the CDM programs undertaken in 2005 will not yield measurable savings until 2006 as much of the cost associated with these programs have gone into their development. The fixed costs of the program development have been primarily incurred in the 2005 budget.

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 2005 we implemented measures resulting in about 3,300,000 kWh annual energy savings and a demand savings of 96kW in the residential and in the large commercial sectors.

- All initiatives under all CDM programs were screened for Total Resource Cost (TRC) cost test. We calculated TRC Benefit-Cost Ratios of 2.7 and 3.9 respectively, based on those initiatives actually launched in 2005. Other benefits will accrue with initiatives launched in 2006, further improving TRC results.
- Worked with CLD partners to launch the powerWISE brand and a number of co-branded, mass-market CDM initiatives. These include:
  - Water Heater Tune-up
  - Library Program
  - Program-in-a-Box
  - Retailer Coupon Program
  - Switch to Cold Coupon Campaign
  - LED Christmas Lights Exchange

[1] The CLD is comprised of Enersource Hydro Mississauga, Hamilton Hydro, Hydro Ottawa Ltd., PowerStream Inc., Toronto Hydro-Electric System Ltd. and Veridian Connections Inc.

- In support of the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007, Enersource installed 555 such meters in a pilot program, targeting the residential sector.
- A powerWISE Business Incentive Program was launched, to help improve the economics of certain energy conservation measures and their implementation.
- Load control initiatives were developed, which provide mechanisms to respond to price signals in all market sectors and to provide needed relief, during critical periods of peak demand.
- Cooperative efforts were investigated, with the Region of Peel, local social housing corporations, non-profit homes and co-op housing.

- **Distribution Loss Reduction**
  - o *Voltage Profile Management*

Highlights: - A pilot program was developed, to investigate the effectiveness of technologies aimed at reducing power grid distribution losses. To be completed in 2006, it involves voltage conditioning at a distribution transformer station. An RFP was executed and the vendor selected.

- The initial TRC indicates an expected savings of approximately 1,553,000 kWh and a peak reduction of 300 kW. These are preliminary numbers and are subject to change pending final installation and verification of costs.

- **Distributed Energy**
  - o Load Displacement
  - o Stand-by Generators

Highlights: - We participated in a CLD co-funded distributed energy, load displacement project, to test the effectiveness of an SCR (selective catalytic reduction) system to reduce NO_x levels in the exhaust of a bi-fuel Diesel generator. This project will also test results against environmental permitting and regulatory implications.
- We have retained a leading consultant, to determine the viability of dispatching existing customer stand-by generators in Ontario, while ensuring we are compliant with Ministry Of Environment guidelines and available IESO programs.
- It is premature at this stage to predict the expected savings from this program but we anticipate good success with this program as it provides pure demand response capacity to the market.

- **Overall Program Support**
  - o powerWISE Brand
  - o powerWISE Fleet Branding
  - o powerWISE Website
  - o Special Events Van
  - o CDM Program Compliance
  - o Code Green – TV Show

Highlights: - The activities related to the Special Events Van resulted in a TRC Benefit-Cost Ratio of 3.1.

- The powerWISE website is designed to provide customers a centralized source of information on energy conservation issues and cost-effective measures. Links have been provided to each CLD member's website, where LDC-specific program information can be accessed. Enersource's site proved very successful, registering 37,000 visitors since inception and logging on average over 210,000 hits per month.
- A Special Events Van carrying energy conservation messages participated at 40 events, engaging 160,000 people, distributing 8,000 CFLs, 1,000 promotional items and educational material.
- Developed a governance structure, to develop processes to manage project evaluations, approvals, status tracking and results monitoring and verification.

The cumulative TRC Benefit-Cost Ratios of initiatives launched in 2005 was 2.8. Some projects were launched late in the year. The benefits of these projects will continue to accrue in 2006, as deployment increases.

The first full year of Conservation and Demand Management was 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 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.

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. This report is a requirement of that decision.

In respect of the application filed by Enersource Corporation ("Enersource"), the Board issued its Final Order on February 3, 2005 under docket number RP-2004-0203 / EB-2004-0489.

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 31st of the following year" and would be subject to a public review. On December 21, 2005 the Board issued a Guideline for Annual Reporting of CDM Initiatives that explained more fully the requirements. This report has been prepared in accordance with those guidelines.

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
- **Distributed Energy**
    - Load Displacement
    - Stand-by Generators
- **Overall Program Support**
    - powerWISE Website and Brand Development
    - Special Events Van
    - CDM Program Compliance

The assessment of benefits resulting from each initiative or program was carried out according to the OEB issued Total Resource Cost (TRC) Test Guide,[2] which includes cost effectiveness data for a number of energy efficiency enabling technologies, applicable to the Residential, Commercial, Institutional and Industrial sectors. Where such data was not provided, technology-specific assessment methods were derived.

CDM Programs and Initiatives were developed to engage employees, stakeholders, and all customer classes of electricity users within Enersource's boundaries. Key thrusts of our CDM program include reducing the peak demand, while helping promote a ***conservation culture*** in Ontario, as per Provincial directive.

[2] Available at: http://www.oeb.gov.on.ca/documents/cases/RP-2004-0203/cdm_trcguide_141005.pdf

2. Evaluation of the CDM Plan

In this first year of our CDM Plan, we have successfully developed or launched programs reaching all market sectors

Individual programs and projects are discussed further in Section 3. Energy savings and TRC benefits for each program heading are summarized in Appendix A. Individual Programs' results are presented in a series of appendices in Appendix B.

In reviewing the information provided in both Appendix A and Appendix B, it should be noted that much of the work undertaken by Enersource during 2005 related to program development. A number of the programs initiated in 2005 will not yield measurable kWh or kW demand savings until 2006 and beyond. Therefore, the cost benefit analysis presented does not accurately reflect the effectiveness of Enersource's CDM expenditures.

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 2005 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.
- As HUC owns the mark, the CLD needed to come up with a vehicle to transition the mark that would allow joint ownership. Legal counsel recommended the formation of a Joint Venture (JV) among other options. For expediency, and under the spirit of co-operation, the team recommended that we start with an MOU and a sub-license agreement and then based on the direction that the CLD CEO's determined over time, we would either continue the way we are, move to a more formal JV, transition the mark into some other entity that the CLD may create in the future, or pursue other options. Bottom line, the MOU and License were seen as a way to get things moving quickly.
- Weekly conference call meetings are held with the communications sub-committee to coordinate all powerWISE and branding activities.

- The Ministry of Energy (Director of Communications) participates on weekly conference calls.
- Two-way monthly update meetings are conducted with the Ontario Power Authority (OPA).

Results to Date

- powerWISE trade mark MOU and powerWISE trade mark licenses were executed between each of Enersource, Horizon, Hydro Ottawa, PowerStream, Toronto Hydro and Veridian with HUC.
- powerWISE brand launched April 1st, 2005.
- powerWISE is being used extensively by the CLD to brand CLD conservation programs.
- The powerWISE brand has also been translated to Eco-Consumer for French language purposes.
- Interest in the powerWISE/Eco-Consumer brand has been expressed by the Ministry of Energy, the OPA, Hydro One and other utilities.

Next Steps

- Extend the powerWISE brand to the Ministry of Energy, the OPA and Hydro One and other LDCs.

powerWISE Website

Action

- The powerWISE website www.powerwise.ca was jointly developed and announced on April 1st, 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 April 1 to December 31, 2005 the PowerWISE website has received over 37,000 visitors.
- We also receive several phone calls per day from customers wanting more information on conservation.
- The web site has had several visitors from LDCs who subsequently called Enersource looking for information on subscribing to powerWISE.

Next Steps

- Continue to develop and promote powerwise.ca in conjunction with the Ministry of Energy.
- Continue to improve and enhance the website with new materials and applications.

powerWISE Retail Initiative

Action

- Enersource, Horizon, Hydro Ottawa, PowerStream and Veridian developed a major mass-market retail campaign to advance energy efficient devices into the marketplace through point of purchase redeemable coupons.
- Under the banner "Lighten Your Electricity Load", coupons were distributed in all Enersource bills between October 1st and December 31st, 2005.
- Six products were selected for promotion including:
  - Compact Fluorescent Lights ($3 off per pack)
  - Seasonal LED lights (SLEDs $5 off)
  - Ceiling Fans ($5 off)
  - Programmable Thermostats ($15 off)
  - Light and Appliance Timers ($1 off)
  - Pool and Hot Tub Timers ($4 off)

Results to Date

- In Mississauga about 200,000 coupon books were distributed.
- Over 14,000 coupons were redeemed locally.
- Enersource' participation in this campaign produced peak demand savings of about 61 kW and annual energy savings of over 1,300,000 kWh.

Next Steps

- Conduct post mortem for lessons learned to improve future programs.

powerWISE Fleet Branding

Action

- On Nov 3rd, 2005 the CLD announced the Fleet Branding Program.
- Conservation messages under the powerWISE brand were applied to LDC vehicles to increase conservation messaging to the mass market.

Results to Date

- 70 Enersource vehicles have been branded.

Next Steps

- No next steps required.

Code Green – TV Show

Action

- This initiative consists of sponsoring a six-part educational mini-series featuring the retrofit of twelve homes from across the country. Contestants would be given $15,000 each and compete against one another to renovate

their homes in an effort to create the greatest savings in energy consumption and the greatest reduction in greenhouse gas emissions.

Results to Date

- Production is underway and the program will be aired in 2006.
- There are minimal kW or kWh reductions associated with this project but it is considered to aid in the creation of a conservation culture.

Next Steps

- Ensure that program is delivered.

'Switch to Cold' Coupon Campaign

Action

- Participated in the fall 2005 'Switch to Cold' coupon campaign, through which discount coupons redeemable on the purchase of cold-water wash detergent were distributed to customers as bill inserts. Switch to Cold is a national consumer awareness campaign, created by the Canadian Energy Efficiency Alliance to educate Canadians about how much energy and money they can save by switching to cold water washing.

Results to Date

- About 190,000 discount coupons were distributed to Enersource customers during the fall of 2005. The coupons were valid until the end of February 2006, therefore, data regarding redemption rates and attributed kWh and kW demand savings will not be available until spring 2006.

Next Steps

- Further opportunities to promote cold-water washing are being contemplated in the context of a pending 2006 water heater tune-up program.

Water Heater Tune-Up

Action

- The Tune-ups are completed by co-op students who visit the homes of Mississauga residents who rent electric water heater tanks from Enersource.
- The Tune-up team;
  - wraps a thin insulation jacket around the hot water tank
  - install up to four compact florescent light bulbs
  - install a low flow shower head
  - install a water aerators for sink taps
- Customers are left with information on ways they can further reduce their energy consumption.

Results to Date

- Over 1,200 Tune-Ups were completed.
- Distributed:
  - 1,200 Efficient Showerheads
  - 3,600 Faucet Aerators
  - 1,200 Faucet Washers
  - 1,200 Tank Wraps
  - 4,800 CFLs-13W
- No summer peak demand reductions attributable.
- Resulting annual energy savings are over 1,482,000 kWh.

Next Steps

- This program was submitted to the OEB as a 2nd generation CDM plan and will continue if and when our order of approval is granted.

LED Light Exchange

Action

- An exchange campaign was launched to encourage customers to "set free" their old Christmas lighting, in favour of energy saving LED lights.
- LED lights were exchanged around the City during the Christmas season, at various special events in Streetsville Village, Port Credit and Mississauga's Civic Centre.
- Enersource partnered with Foodpath, the Region of Peel's largest community food bank, to deliver energy savings to the city's neediest residents this Holiday Season.
- Customers were also given energy efficiency educational information.
- Old inefficient lights are disposed of in an environmentally friendly manner.

Results to Date

- Enersource distributed around 11,000 LED light sets.
- At the Foodpath, over 400 sets of LED lights were distributed to needy clients.
- No summer peak demand reductions attributable.
- Annual energy savings in 2005 were over 190,700 kWh.

Next Steps

- This program was submitted to the OEB as a 2nd generation CDM plan and will continue if and when our order for approval is granted.

Library Loan Program

Action

- The "Watt Reader" energy measuring device lending program was developed in cooperation with the Mississauga Library System.
- Customers borrowing the device received operating instructions and two energy efficient compact fluorescent light bulbs (13W CFL).

- 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 about 1,000 “Watt Reader” devices.
- 2,980 CFLs were distributed with the devices.
- Non-peak demand reductions for 2005 were 94kW, assuming that each customer replaced two 60W incandescent bulbs, with the two CFLs handed out with the device.
- Annual energy savings in 2005 were over 292,000 kWh.

Next Steps

- Continue the program for 2006.

Program-In-A-Box

Action

- Enersource developed the Program-In-A-Box concept in an educational CDM program tool-kit, for use by other utilities.
- The concept was to develop a template for the CLD group as well as other LDCs to outline programs’ details. The template included marketing collateral for the customer as well as necessary information for the OEB. This was done in an effort to avoid duplicate development cost associated with similar programs as well as to develop consistency in programs throughout each of the service territories.
- The first Program-In-A-Box covered the Water Heater Tune-up program.

Results to Date

- Good level of interest from utilities who have received the Water Heater Tune-Up Program-In-A-Box.

Next Steps

- Distribute information packages to representatives of Ontario LDCs.
- The first Program-In-A-Box educational CDM tool-kit will be launched at the Enercom 2006 Conference in Toronto.
- Develop and launch next program in series; possibly On-the-Bill Financing Program.
- Request that the CLD group launch other programs such as the Fridge Bounty program.
- Program-In-A-Box will be given to the OPA for distribution to encourage other LDCs to follow a similar format.
- Consideration will also be given to making the Program-In-A-Box programs part of the benefits of joining powerWISE.

SMART Meter Pilot Programs

Description:
Pilot programs for residential SMART meters were completed 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.

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 2005 Activities

SMART Meters – Elster MeshNetwork Pilot

Action

- 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.

Results to Date

- 555 SMART meters were installed by the end of 2005.
- 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 with their consumption patterns and associated costs.

Next Steps

- Combine conservation products with the Smart Meter, to leverage the smart meter potential as a behavioral changing device, with respect to energy consumption habits.
- Analyze metering data, to estimate savings, on the basis of shifted patterns.
- This program will stop as a smart meter program as it has evolved beyond the original scope of just installing smart meters. As a result the program will be moved to the Electric Avenues program.

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 2005 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 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 will eventually receive Time-Of-Use (TOU) rates. We want to demonstrate the potential savings that may result in adopting these rates along with the technologies implemented.

Results to Date

- The neighborhood has been selected and smart meters have been installed.
- The customers have been well advised of our plans.

Next Steps

- Issue RFP to technology providers for the pilot. Once selected, the products will be installed and tested for effectiveness throughout the year.

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 2005 Activities

Residential Load Control Initiative

Action

- 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.
- A request for proposal has been issued for response in mid January 2006.

Results to Date

- Full installation and deployment is expected by Q3 of 2006.

Next Steps

- An integrator will be contracted in Q1 2006.
- An RFP for control equipment will be issued and awarded in Q2 2006.
- Customers will be canvassed and commissioned to sign up for the program in Q2 2006.

Social Housing Program

Description
The Social Housing Sector is a prime candidate for CDM incentives, due to funding constraints that characterizes it.

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

Benefits
Synergies can be created though the combined initiatives of the various agencies.

Description of 2005 Activities

Enersource Social Housing Initiative

Action

- 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.
- In addition to this, LED seasonal lights were issued at food banks over the December holiday season.

Results to Date

- The program was well received and appreciated by the customers.
- Results were very good as we issued 400 LED packages at the food banks. The rest of the results are embedded in the mass market programs.

Next Steps

- Programs and initiatives will be repeated in 2006.
- We will continue to look for ways to combine this program with some of our existing Mass Market programs.

3.2 Commercial, Industrial and Institutional (> 50 kW)

SMART Meter Commercial Programs

Description
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.

Target users
Large commercial, industrial and institutional 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 2005 Activities

SMART Meters – Commercial Pilot

Action
- Identify a multi-residential complex for retrofitting in 2006 to individually metered units with smart meters, from bulk commercial meter.
- Retrofit will be completed in April 2006.
- Designated pilot building will shift from a single commercial account to multiple residential accounts, dependent on the number of its residential units.

Results to Date
- A multi-residential complex with 186 units was identified for retrofitting.

Next Steps
- Proceed with installation of Quadlogic SMART metering technology in selected apartment building.

Leveraging Energy Conservation

Description
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 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 2005 Activities

powerWISE Business Incentive Program

Action
- The program was made available to customers in late 2005.
- Applications under the program consisted mainly of lighting upgrades.
- Enersource worked with Osram-Sylvania to organize a seminar at their lighting facilities in Mississauga. Delivery is planned for January 2006.

Results to Date
- Three customers were signed up.
- Other applications were still under evaluation.
- Energy and Demand savings were not reported for TRC purposes, since they will accrue in 2006. However, peak demand reduction and annual energy savings from 2005 activities are projected at around 146 kW and about 1,000,000 kWh, when projects are fully installed.

Next Steps
- Conduct seminars to various markets to increase program awareness.
- Full rollout of program in 2006 and increased marketing efforts.

- Monitor and evaluate program throughout 2006.
- We will plan to rate-base this program in the 2008 rate application.

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 2005 Activities

CI&I Lighting Load Controller

Action

- A pilot project has been developed in cooperation with Electric City Corporation, the lighting load control equipment manufacturer.
- 1 unit was installed and commissioned at a large food retailing store (Loblaws).
- 11 more units were procured for installation during the first quarter in 2006.

Results to Date

- The installed unit was tested and successfully demonstrated to the customer.
- A continuous energy saving of about 5% of connected load was verified.
- Connected load was curtailed by over 25% (30% maximum), without any difference in perceived lighting levels.
- Peak load savings are around 35 kW per unit installed.
- Annual energy savings are about 64,250 kWh for the single unit installed.
- TRC Benefit-Cost Ratio was calculated at 3.9.
- Annual energy savings are dependent on annual operating hours of hosting facility.

Next Steps

- Continue to recruit customers and install 11 more lighting load controllers as planned, in first quarter 2006.
- Enroll curtailable loads in IESO-OPA demand response programs.
- Collect data to verify and quantify energy savings.
- Consider expanding program beyond 12 installed units.

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.

Responses were received from 2 vendors. The responses have been reviewed and a presentation is scheduled for January 6, 2006 with the preferred vendor. We expect to award the contract by mid January.

Description of 2005 Activities

On-the-Bill Financing

Action
- As of the end of December, an RFI was issued to 4 potential vendors.
- Responses were received from 2 vendors.
- We expect to contract in early 2006.
- 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.

Results to Date
- The program has not been implemented yet. The expected launch date is first quarter, 2006.

Next Steps
- Proceed with program launch.
- Prepare a Program-In-A-Box for this program so that other utilities can offer the same type of program to their customers.

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. 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 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 2005 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

- Benefits will be realized in the second half of 2006.
- Once installed, forecasted annual energy savings is expected to be around 1,553,000 kWh.
- Forecasted Peak demand reduction at the station is expected to be 300 kW.

Next Steps

- Proceed with project implementation.
- Complete pre-deployment study and installation by end of Q2, 2006.
- The AdaptiVolt system is expected to be operational by August 2006.

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 2005 Activities

Load Displacement

Action

- This was a demonstration generation project funded by the CLD, to study the effect of selective catalytic reduction converters on emissions from bi-fuel Diesel generators.

Results to Date

- The generator was installed and commissioned successfully in 2005.
- No kW or kWh results to report.

Next Steps

- We are expecting a full report from IESA on the operation of the generator
- On going monitoring of the project.

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 2005 Activities

Standby Generators

Action

- The CLD engaged a consultant to study and make detailed recommendations on a back-up generator program through which distributed generation capacity could be aggregated and made available during times of supply constraints. The study, which will assess technical, financial and operational issues, is currently underway.
- Also with the CLD, have worked with representatives of Enbridge Consumers Gas to identify and remove barriers to the use of back-up generators.
- Generators will be controlled from a single dispatch point at Enersource.

Results to Date

- Negotiations were conducted with a number of prospective customers.
- We have negotiated with several customers to aggregate their natural gas generators, for dispatching during critical peak periods.
- A 1.25 MW natural gas generator was ordered and received for installation at Enersource site. This generator will serve as a testing facility for dispatch when required. Enersource felt it necessary to gain experience with testing of the generators at their own site before launching a full program at customer sites.

Next Steps

- The program will be launched in 2006.
- Proceed with the Enersource generator installations.
- Contracted generators will be aggregated and made available for dispatch when required.

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

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 2005 Activities

Special Events Van

Action

- As of the end of December, the special events team has talked to more than 16,000 people about energy conservation and participated in 40 events including Carassauga, the Bread and Honey Festival and the Islamic BBQ to name a few.

Results

- A total of 8,000 CFL bulbs were distributed along with instructions on their best use.
- 1,000 promotional items were distributed, which has helped to spread the energy efficiency message within the residents of Mississauga.
- Annual energy savings from CFLs were calculated at 784,670 kWh.
- TRC results show an excellent 3.1 Benefit-Cost Ratio.

Next Steps

- This program was submitted to the OEB as a 2nd generation CDM plan and will continue if and when our order of approval is granted.

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.

4. Lessons Learned

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

- Customer decision making factors
- Customer behaviour
- System benefits and relative desirability
- 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 to be a significant factor input cost.

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.

With hindsight, Enersource would have given 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. Again, with hindsight, Enersource would have also placed greater emphasis on programs that improved its load shape – specifically, programs that would flatten the load shape, thus improving our load factor.

Enersource found that the technical aspects of program design and delivery were more readily dealt with than program delivery issues and in particular the program delivery issues associated with multi-party programs. Enersource 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 continues to believe that joint programs are highly desirable given that they rely on a consistent message and allow many parties to apply successful programs.

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 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.

Lastly, Enersource has, with hindsight, 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 year of our program was successful. Full benefits from all our CDM Programs will be realized starting with 2006.

The following Table summarizes results:

	Successful? High (H) Medium (M) Low (L)	Continue?	Notes
Residential and Commercial <50kW			
Co-Branded Mass Market	Yes – H	Yes	Significant interest in mass market for techniques for saving energy.
SMART Meter Pilot Programs Residential	Yes – H	Yes	As part of Provincial directive.
Residential Load Control Initiative	Too early to tell	Yes	
SMART Avenues Program (Previously call Electric Avenue)	Too early to tell	Too early to tell	We anticipate this program to be very successful
Social Housing Program	Yes	Yes	This will be integrated into our other programs (i.e. Mass Market and Events Van).
Commercial Institutional and Industrial >50kW			
SMART Meter Program Commercial	Yes - H	Yes	We anticipate good results from our pilot
Leveraging Energy Conservation or Load Management	Yes - H	Yes	Significant interest in CI&I Sector.
CI&I Load Control	Yes - H	Yes	Significant potential for on-peak load reductions.
Off-the-Bill Financing	Too early to tell	Too early to tell	This is a great program for all LDC to implement at a low cost. Will be made into a Program-In-A-Box.
Distribution Loss Reduction			
Voltage Profile Management	Yes - H	Yes	

Distributed Generation			
Load Displacement	Too early to tell	Too early to tell	Significant potential for on-peak load reductions.
Standby Generators	Too early to tell	Too early to tell	
Overall Program Support			
Special Events Van	Yes - H	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.
Regulatory Reporting	Yes - H	Yes	

5. Conclusions

2005 was a year of program exploration and program development for Enersource. The beginning of the year was more challenging as resources were minimal. As the year progressed, our CDM plan began to unfold into a more comprehensive plan as the details of each program became known.

We attempted to capture the program development details and package them for other LDCs to use. We called this packaging "Program-In-A-Box" The intent was to develop consistency for program delivery for other LDCs, and to avoid duplication of development work for similar programs. Our intent will be to package all our programs using this template.

Many of our programs were not launched until the end of 2005. Results for 2006 will be much more significant because programs launched throughout 2005 will have had time to operate for a number of months and generate the expected results.

Approximately 34% of the available 3rd traunche CDM funds were committed to projects active in 2005. Proposed projects were reviewed on the basis of energy conservation and demand management potential and screened using the TRC Guide.

The first full year of Conservation and Demand Management was 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.

Appendix A - Evaluation of the CDM Plan

	Total	Conservation and Demand Management Residential and Commercial (<50kW)	Conservation and Demand Management Commercial, Industrial and Institutional	Distributed Energy	Distribution Line Reduction	Program Support
Net TRC value ($):	$1,471,947	$1,252,890	$83,675	$0	$0	$135,382
Benefit to cost ratio:	2.79	2.72	3.94	n/a	n/a	3.10
Number of participants or units delivered:	85,402	40,784	36,618	0	0	8,000
Total KWh to be saved over the lifecycle of the plan (kWh):	35,463,914	31,361,533	963,699	0	0	3,138,682
Total in year kWh saved (kWh):	4,123,018	3,274,101	64,247	0	0	784,670
Total peak demand saved (kW):	61.3	61.3	0.0	0.0	0.0	0.0
Total kWh saved as a percentage of total kWh delivered (%):	0.04%	0.03%	0.00%	0.00%	0.00%	0.01%
Peak kW saved as a percentage of LDC peak kW load (%):	0.23%	0.23%	0.00%	0.00%	0.00%	0.00%
Gross in year C&DM expenditures ($):	$2,522,758	$946,734	$136,580	$598,000	$2,000	$839,444
Expenditures per KWh saved ($/kWh):*	$0.61	$0.29	$2.13	n/a	n/a	$1.07
*Expenditures per KW saved ($/kW)**:*	$41,147.58	$15,442	n/a	n/a	n/a	n/a

Utility discount rate (%):	6.60

*Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
**Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.

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	Library Loan Program	Retailer Program
Base case technology:	Do Nothing	Incandescent String	Incandescent Bulb	Incandescent Bulb, Do Nothing
Efficient technology:	Efficient Showerhead, Faucet Aerator, Faucet Washer, Tank Wrap and Compact Fluorescent Bulb	LED Light String	Compact Fluorescent	Compact fluorescent bulb, LED Christmas Lights, Programmable Thermostat, Indoor Timer, Outdoor Timer, Ceiling Fan and Energuide for Existing Homes
Number of participants or units delivered:	1,200	11,000	2,980	14,254
Measure life (years):	12,12,6,6 and 4	30	4	4,30,18,20,20,20 and 25

B. **TRC Results:**

TRC Benefits ($):		$ 1,981,817.00
TRC Costs ($):		
	Utility program cost (less incentives):	$ 669,556.00
	Participant cost:	$ 59,371.00
	Total TRC costs:	$ 728,927.00
Net TRC (in year CDN $):		$ 1,252,890
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		2.72

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

Conservation Programs:

Demand savings (kW):	*Summer*		61.31
	Winter		n/a
		lifecycle	*in year*
Energy saved (kWh):		*31,361,533*	3,274,101
Other resources saved :			
	Natural Gas (m3):		
	Water Savings (000's liters)	39,536	

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	107,000
	Incremental O&M:	$	612,556
	Incentive:	$	42,178
	Total:	$	761,734
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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.

Next Steps
- Extend the powerWISE brand to the Ministry of Energy, the OPA, Hydro One and other LDCs.

powerWISE Website
- powerWISE website has received over 37,000 visitors since its launch.

Next Steps
- Extend the use of the powerWISE brand to the Ministry of Energy, the OPA, Hydro One and other LDCs.

Water Heater Tune-Up
- Over 1,200 Tune-Ups were completed in 2005.

Next Steps
- This highly successful program will continue in 2006.

LED Light Exchange
- Enersource distributed approximately 11,000 LED light sets.
- At the Foodpath, over 400 sets of LED lights were distributed to needy clients.

Next Steps
- Similar LED exchanges are planned for 2006.

Library Loan Program
- Enersource customers borrowed about 1,000 “Watt Reader” devices.
- 2,900 CFLs were distributed with the devices.

Next Steps
- Continue the program for 2006

Retailer Coupon Program
- As the program developed, other LDCs expressed an interest in participating.
- The program resulted in an unprecedented cooperative effort by 31 LDCs.
- About 200,000 redeemable retail coupon books were distributed to Enersource customers.
- Over 14,000 coupons were redeemed locally.

Next Steps
- Similar coupons distributions are planned for 2006.

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 completed 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):

	SMART Meter Elster Pilot		
Base case technology:	Do Nothing		
Efficient technology:	SMART Meter		
Number of participants or units delivered:	550		
Measure life (years):	n/a		

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	122,000
	Incremental O&M:	$	5,000
	Incentive:	$	-
	Total:	$	127,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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.
■ Analyze metering data, to estimate savings, on the basis of shifted patterns.
■ This program will stop as a smart meter program as it has evolved beyond the original scope of just installing smart meters. As a result the program will be moved to the Smart Avenues program.

Appendix B - Discussion of the Program

A. **Name of the Program:** **SMART Avenues – A Community Pilot (Previously named "Electric Avenue")**

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

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.

This pilot may also include the design and construction of an energy efficient home that will showcase all the latest technologies in energy efficiency.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	3,000
	Incentive:	$	-
	Total:	$	3,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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 will 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.

Next Steps

- Issue RFP to technology providers for the pilot. Once selected, the products will be installed and tested for effectiveness throughout the year.

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)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	6,000
	Incentive:	$	-
	Total:	$	6,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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.
■ Full installation and deployment is expected by Q3 of 2006.

Next Steps

■ An integrator will be contracted in Q1 2006.
■ An RFP for control equipment will be issued and awarded in Q2 2006.
■ Customers will be canvassed and commissioned to sign up for the program in Q2 2006.

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):

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

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
Utility program cost (less incentives):		$ -
Participant cost:		$ -
Total TRC costs:		$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*	0
	Winter	0
	lifecycle	*in year*
Energy saved (kWh):	*0*	0
Other resources saved :		
Natural Gas (m3):		
Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	49,000
	Incentive:	$	-
	Total:	$	49,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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.
- In addition to this, LED seasonal lights were issued at food banks over the December holiday season.
- The program was well received and appreciated by the customers.
- Results were very good as we issued 400 LED packages at the food banks. The rest of the results are embedded in the mass market programs.

Next Steps

- Programs and initiatives will be repeated in 2006.
- We will continue to look for ways to combine this program with some of our existing Mass Market programs.

Appendix B - Discussion of the Program

A. **Name of the Program:** **SMART Meter Commercial Programs**

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:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	23,000
	Incentive:	$	-
	Total:	$	23,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

■ A multi-residential complex with 186 units was identified for retrofitting. Retrofit will be completed in April 2006.
■ Designated pilot building will shift from a single commercial account to multiple residential accounts, dependent on the number of its residential units.

Next Steps

■ Proceed with installation of Quadlogic SMART metering technology in selected apartment building.

Appendix B - Discussion of the Program

A. **Name of the Program:** **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 lighting, high efficient motors and unitary air conditioners		
Number of participants or units delivered	36,617		
Measure life (years):	25,6,18 and 15		

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		n/a
		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 begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	42,000
	Incremental O&M:	$	43,000
	Incentive:	$	-
	Total:	$	85,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

- The program was made available to customers in late 2005.
- Applications under the program consisted mainly of lighting upgrades.
- Three customers were signed up.
- Other applications were still under evaluation.
- Energy and Demand savings were not reported for TRC purposes, since they will accrue in 2006. However, peak demand reduction and annual energy savings from 2005 activities are projected at about 146 kW and about 1 million kWh, when projects are fully installed.
- Enersource worked with Osram-Sylvania to organize a seminar at their lighting facilities in Mississauga. Delivery is planned for January 2006.

Next Steps

- Conduct seminars to various markets to increase program awareness.
- Full rollout of program in 2006 and increased marketing efforts.
- Monitor and evaluate program throughout 2006.
- We will plan to rate-base this program in the 2008 rate application.

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 Controller		
Number of participants or units delive	1		
Measure life (years):	15		

B. **TRC Results:**

TRC Benefits ($):		$ 112,175
TRC Costs ($):		
	Utility program cost (less incentives):	$ 28,500
	Participant cost:	$ -
	Total TRC costs:	$ 28,500
Net TRC (in year CDN $):		$ 83,675
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		3.94

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*963,699*	64,247
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):	35
Peak hours dispatched in year (hours):	500

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	27,000
	Incremental O&M:	$	1,500
	Incentive:	$	-
	Total:	$	28,500
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

- A pilot project has been developed in cooperation with Electric City Corporation, the lighting load control equipment manufacturer.
- 1 unit was installed and commissioned at a large food retailing store (Loblaws).
- 11 more units were procured for installation during the first quarter in 2006.
- The installed unit was tested and successfully demonstrated to the customer.
- A continuous energy saving of 3~5% of connected load was verified.
- Connected load was curtailed by over 25% (30% maximum), without any appreciable difference in perceived lighting levels.
- Peak load savings are 33-35 kW per unit installed.
- Annual energy savings are 64,247 kWh for the single unit installed and are dependent on annual operating hours of hosting facility.

Next Steps

- Continue to recruit customers and install 11 more lighting load controllers as planned.
- Enroll curtailable loads in IESO-OPA demand response programs.
- Collect data to verify and quantify energy savings.
- Consider expanding program beyond 12 installed units.

Appendix B - Discussion of the Program

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

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*	0	
	Winter	0	
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	80
	Incentive:	$	-
	Total:	$	80
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

- As of the end of December, an RFI was issued to 4 potential Financial Services vendors.
- Responses were received from 2 vendors.
- We expect to contract in early 2006.
- 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 not been implemented yet. The expected launch date is first quarter, 2006.

Next Steps

- Proceed with program launch.
- Prepare a Program-In-A-Box for this program so that other utilities can offer the same type of program to their customers.

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 program.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	2,000
	Incremental O&M:	$	-
	Incentive:	$	-
	Total:	$	2,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. 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.
- Benefits will be realized in the second half of 2006.
- Forecasted Annual energy savings is expected to be 1,553,000 kWh.
- Forecasted Peak demand reduction at the station is expected to be 300 kW.

Next Steps

- Proceed with project implementation.
- Complete pre-deployment study and installation by end of Q2, 2006
- The AdaptiVolt system is expected to be operational by August 2006.

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:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):		$ -
TRC Costs ($):		
	Utility program cost (less incentives):	$ -
	Participant cost:	$ -
	Total TRC costs:	$ -
Net TRC (in year CDN $):		$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		NA

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*0*	0
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	1,000
	Incremental O&M:	$	23,000
	Incentive:	$	-
	Total:	$	24,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

■ This was a demonstration generation project funded by the CLD, to study the effect of selective catalytic reduction converters on emissions from bi-fuel Diesel generators.
■ The demonstration was completed successfully in 2005.
■ No kW or kWh results to report.

Next Steps

■ Project is complete.
■ We are expecting a full report from IESA on the operation of the generator
■ On going monitoring of the project.

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:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):	$ -
TRC Costs ($):	
Utility program cost (less incentives):	$ -
Participant cost:	$ -
Total TRC costs:	$ -
Net TRC (in year CDN $):	$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	NA

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

Conservation Programs:

Demand savings (kW):	*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 begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	518,000
	Incremental O&M:	$	56,000
	Incentive:	$	-
	Total:	$	574,000
Utility indirect costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	-
	Total:	$	-
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

- The CLD engaged a consultant to study and make detailed recommendations on a back-up generator program through which distributed generation capacity could be aggregated and made available during times of supply constraints. The study, which will assess technical, financial and operational issues, is currently underway.
- Also with the CLD, have worked with representatives of Enbridge Consumers Gas to identify and remove barriers to the use of back-up generators.
- Generators will be controlled from a single dispatch point at Enersource.
- Negotiations were conducted with a number of prospective customers.
- We have negotiated with a large food retailer to aggregate their natural gas generators at 5 stores, for dispatching during critical peak periods.
- A 1.25MW natural gas generator was ordered and received for installation at Enersource.

Next Steps

- The program will be launched in 2006.
- Proceed with the Enersource generator installation.
- Contracted generators will be aggregated and made available for dispatch when required.

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 delive	8,000		
Measure life (years):	4		

B. **TRC Results:**

TRC Benefits ($):		$ 199,826
TRC Costs ($):		
	Utility program cost (less incentives):	$ 64,444
	Participant cost:	$ -
	Total TRC costs:	$ 64,444
Net TRC (in year CDN $):		$ 135,382
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		3.10

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

Conservation Programs:

Demand savings (kW):	*Summer*		0
	Winter		0
		lifecycle	*in year*
Energy saved (kWh):		*3,138,682*	784,670
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 begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		
	lifecycle	*in year*
Energy savngs (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. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$	-
	Incremental O&M:	$	64,444
	Incentive:	$	-
	Total:	$	64,444
Utility indirect costs ($):	*Incremental capital:*	$	30,000
	Incremental O&M:	$	745,000
	Total:	$	775,000
Participant costs ($):	*Incremental equipment:*	$	-
	Incremental O&M:	$	-
	Total:	$	-

E. Comments:

■ As of the end of December, the special events team has talked to more than 16,000 people about energy conservation and participated in 40 events including Carassauga, the Bread and Honey Festival and the Islamic BBQ to name a few.
■ A total of 8,000 CFL bulbs were distributed along with instructions on their best use.
■ 1,000 promotional items were distributed, which has helped to spread the energy efficiency message within the residents of Mississauga.

Next Steps
■ Continue to interact with the public to further spread the energy conservation message.
■ Looking at adding a fuel cell, a solar panel and windmill display to the van, to further exhibit energy efficient technologies to our customers.