



Veridian Connections Inc.

Conservation and Demand Management

2005 Annual Report

Veridian Connections Inc. - RP-2004-0203\EB-2004-0484

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APPENDIX A
APPENDIX B



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, Horizon Utilities Corporation, Hydro Ottawa Limited, PowerStream Inc., Toronto Hydro-Electric System Limited and Veridian Connections Inc. This report is a requirement of that decision. In respect of the application filed by Veridian Connections Inc. (“Veridian”), the Board issued its Final Order on February 3, 2005 under docket number RP-2004-0203 / EB-2004-0484.

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 these requirements. This report has been prepared in accordance with those guidelines.

Veridian’s CDM plan was updated once during 2005. This was initiated on September 14th 2005, when an application was submitted to the Board requesting approval of the following plan amendments:

- The incorporation of Scugog Hydro Energy Corporation’s (“Scugog Hydro”) CDM plan into Veridian’s plan, following Veridian’s acquisition of Scugog Hydro on July 1, 2005.
- The addition of the ‘Leveraging Energy Conservation and/or Load Management Programs’ initiative as presented in the applications by the Coalition of Large Distributors (CLD).
- A broadening of the scope of the ‘Distribution Loss Reduction Program’ to include Voltage Profile Management.

The Board responded to Veridian’s application on October 13, 2005 with notice that it would be treated as “an informational update rather than an application which requires Board approval”. Therefore, this report reflects the plan changes described in Veridian’s September 14th 2005 application.

Veridian also acquired Gravenhurst Hydro Electric Inc. (“Gravenhurst Hydro”) in 2005. This purchase was finalized on October 31, 2005, at which time Veridian assumed an obligation to execute Gravenhurst Hydro’s approved CDM plan. On February 1, 2006 Veridian submitted an application to the Board for an amendment to its electricity distribution licence to consolidate this acquired service territory under one licence. The Board’s decision on this application is pending. Veridian continues to serve customers in Gravenhurst under a separate distribution licence and, therefore, a separate annual CDM report will be filed on Gravenhurst Hydro’s CDM activities during 2005.



2. Evaluation of Overall Plan

Refer to Appendix A for an evaluation of Veridian's CDM activities during 2005.

In reviewing the information provided in both Appendix A and Appendix B, it should be noted that much of the work undertaken by Veridian 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 Veridian's CDM expenditures.

Furthermore, some components of Veridian's CDM plan relate to the deployment of Smart meters, which is being undertaken to support provincial government policy direction. The impact of Smart meters on kWh consumption and kW demand has not been assessed. This further skews the overall cost benefit analysis provided in Appendix A.

3. Discussion of the Programs

3.1 Residential and Small Commercial (< 50 kW)

Co-branded Mass Market Program

Program Description

This flagship co-branded mass-market program (e.g. powerWISE®) is a multifaceted approach to fostering the conservation culture in Ontario. Through development of a significant cooperative effort amongst six of the largest municipal LDCs, this program will become synonymous with specific initiatives such as Compact Fluorescent Lighting (CFL) change out programs, LED Christmas Lights, 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 contemplated as components of this program.

Target users

Mass-market including residential and small commercial <50 kW of monthly demand.

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 trademark prior to CDM activities.
- During CLD CDM plan preparation, it was agreed that the CLD would collectively develop a co-brand. HUC offered the powerWISE brand for joint ownership and the CLD agreed that this trademark would be adopted.
- As HUC owns the mark, the CLD needed to come up with a means of transitioning the trademark to joint ownership. Legal counsel recommended the formation of a Joint Venture (JV), among other options. For expediency, it was decided to start with a Memorandum of Understanding (MOU) and a sub-license agreement and then, based on the direction that the CLD CEO's determined over time, to either

continue with these arrangements, 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. 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 in 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 LDC's.

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.

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 Veridian bills between mid-September and December 31st, 2005.
- Six products were selected for promotion including:
 - Compact Fluorescent Lights (\$3 off per pack)
 - Seasonal LED lights (SLED's \$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

- Over 91,000 coupon books were distributed to Veridian customers.
- Over 4,000 coupons issued by Veridian were redeemed.
- Veridian's participation in this campaign produced peak demand savings of about 44 kW and annual energy savings of about 671,000 kWh.

Next Steps

- Conduct post mortem for lessons learned to improve future programs.
- Finalize participation in campaign for 2006.

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

- 60 Veridian vehicles have been branded.

Next Steps

- None.

powerWISE 'Starter Kit' and CFL Promotions

Action

- During the course of the year, Veridian assembled and distributed powerWISE 'Starter Kits' and CFL bulbs through a number of venues, to exhibit electricity

conservation opportunities to customers. The powerWISE 'Starter Kits' included two CFL bulbs, one LED night light, miscellaneous conservation literature and, for the duration of the powerWISE retail initiative described above, coupons redeemable at Canadian Tire on the purchase of select energy efficient products.

- Promotional events included:
 - The first annual Pickering Town Centre Electricity Conservation Forum, as coordinated by local member of Provincial Parliament Wayne Arthurs.
 - A Smart meter forum held in the community of Sunderland, to provide customers with information on smart meter technology, time of use electricity pricing, and electricity conservation opportunities.
 - An employee education campaign to increase awareness and commitment to electricity conservation.
 - A pilot Business 'Lunch and Learn' program, through which the staff of a local employee were provided with conservation training.
 - Local Board of Trade events.

Results to Date

- Through these efforts, a total of 1,664 CFL bulbs and accompanying conservation literature were distributed to 1082 individuals.

Next Steps

- Larger scale CFL promotions are planned for 2006, including a food bank program modeled after that undertaken by Cambridge and North Dumfries Hydro.

'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

- More than 91,000 discount coupons were distributed to Veridian 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.



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.

Residential Load Control Initiative

Action

- Veridian 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 mid January 2006.

Results to Date

- Results are expected in Q3 of 2006.

Next Steps

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

SMART Meter Pilot

Program Description

A pilot program for residential SMART meters will be deployed to enable the assessment of metering, communications, settlement, load control and other technologies that may be used to accommodate the universal application of SMART meters in the future. Further, sub-metering opportunities for the purposes of customer information in bulk-metered situations (i.e. condominiums) may be considered.

This initiative will commence upon the release of a formal definition of a SMART meter by the Board.

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 Veridian 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 also provide customers participating in the pilot programs with an incentive to conserve or shift energy use.

Discussion of 2005 Activities

Action

- The rural community of Sunderland was chosen as the location for Veridian's SMART meter pilot program. All residential and small business customers in the community were equipped with SMART meters during the month of November 2005.
- A SMART meter forum was held at the local community centre to provide customers with information on the smart meter technology, pending time-of-use electricity rate structures, and electricity conservation opportunities.
- Software has been purchased and deployed to provide customers with Internet access to historical consumption data retrieved from the smart meters.

Results to Date

- Have experienced an overall meter reading success rate of 99.6% since the implementation of the pilot program.
- To date, only a single meter failure has been experienced, and this was discovered upon initial installation.



- Approximately 30 customers equipped with smart meters are using the Internet service to review their electricity consumption patterns.

Next Steps

- Validate meter data obtained via remote meter readings by comparing to physical meter readings.
- Work with Customer Information System vendor to finalize time-of-use billing capabilities.
- Develop work processes and implement technological solutions to support mass deployment of SMART meters.

3.2 Commercial, Industrial and Institutional (> 50 kW)

SMART Meter Program

Program Description

Veridian will make an investment to further the use of SMART or interval meters by commercial industrial and institutional customers.

This program will commence upon the release of a formal definition of a SMART meter by the Board.

Target users

Commercial, Industrial and Institutional customers larger than 50 kW's.

Benefits

This program supports the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007. These meters are seen as an important means of establishing a 'conservation culture' in Ontario. In conjunction with appropriate rate structures, they will encourage customers to conserve or shift energy use.

Discussion of 2005 Activities

Action

- Amended Veridian's Conditions of Service to provide for mandatory interval metering of all customers with a peak demand of greater than 200 kW's. The previous threshold was 500 kW's.
- Initiated a meter conversion program for approximately 120 existing customers affected by the reduced threshold for interval meters:
- All affected customers have been notified of the meter conversion plans and have been apprised of the impact that the new meter will have on the way in which they are billed for electricity consumption.
- All converted meter installations will rely on traditional telephone line communication technology, however, two alternate wireless communications solutions will be tested as part of the SMART meter program.
- Acquired and implemented software to provide customers with secure Internet access to detailed historical electricity use data as obtained using the new interval meters.

Results to Date

- Approximately eleven (11) customers affected by the new interval meter threshold have been fully converted to interval metering.



- Four (4) interval meters supported by the 'Blue Tree' wireless solution are in service and the technology's meter data acquisition capability is being assessed.

Next Steps

- Proceed with the retrofit of the balance of existing non-interval meters serving customers with peak demands of greater than 200 kW.
- Consider a further reduction in the threshold for mandatory interval metering.

Leveraging Energy Conservation and Load Management

Program 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 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.

Target users

Large consumers over 50 kW including schools, large commercial facilities, institutional facilities, 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.

Discussion of 2005 Activities

powerWISE Business Incentives Program (PBIP)

Action

- In concert with all six members of the CLD, this flagship program provides incentives of up to \$25K per customer to advance energy conservation projects.
- Two streams of funding are available
 - Prescriptive:
 - This program provides incentives for specific activities ie. retrofitting T12 lighting to T8 lighting on a predetermined cost per unit basis.
 - Custom:
 - Projects will be considered on an individual case basis with incentives starting at \$150 per kW

Results to Date

- The program has been promoted to Veridian's larger business customers through direct mail correspondence on two occasions. Program details are also featured on Veridian's web site.
- Despite numerous customer enquiries regarding the program, no applications for funding have been received to date.



Next Steps

- Continue to promote this program to customers, contractors and energy service providers.

3.3. Distribution Loss Reduction

Distribution Loss Reduction

Program Description

The Distribution Loss Reduction 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:

Power Factor Correction - Under the Power Factor Correction initiative, a power factor assessment will be completed which will identify locations for the installation of power factor correction capacitor banks. The results and available funding will determine which projects proceed.

Power System Load Balancing - This program is designed to ascertain where load shifting can occur within the grid to improve system efficiency including the location of optimized “open points”. It is estimated that approximately 5% - 10% of system losses could be saved.

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 IMO’s voltage reduction program and will not interfere with the effectiveness of that program.

Target users

All of Veridian’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.



Discussion of 2005 Activities

Action

- Conducted a detailed engineering analysis of electricity consumption and demand savings opportunities available through network reconfiguration and power factor correction on eight 13.8 kV feeders in the City of Belleville.
- On the basis of this study, conducted Total Resource Cost test analysis to assess the viability of the proposed investments.

Results to Date

- The calculated savings associated with the measures studied for the eight Belleville feeders include a peak demand reduction of 260 kW and annual kWh savings of 1.4 million kWhs. The estimated implementation costs total about \$700,000. The costs to implement these system improvements were found to be less than the net present value of the savings calculated using the Board's TRC Guide.
- On the strength of the TRC analysis, system reconfiguration and power factor correction work on the eight feeders will be completed in 2006.

Next Steps

- Using the results of the pilot study on the Belleville feeders, seek out and implement similar cost-effective distribution loss reduction opportunities throughout Veridian's distribution network.

3.4 Distributed Energy

Load Displacement

Program 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, back-up power possibilities, education and skills development.

Discussion of 2005 Activities

Action

- Preliminary work has been undertaken to tailor the powerWISE Business Incentives Program (PBIP) to offer financial incentives for the installation of prescribed types of behind the meter load displacement generating capacity.
- As of the end of 2005, application guidelines and firm incentive levels had not been formally adopted and promoted to customers.



Results to Date

- Discussions have taken place with a number of customers interested in pursuing load displacement generating opportunities. Opportunities include solar, wind and combined heat and power generation projects.

Next Steps

- Work with the Coalition of Large Distributors (CLD) to finalize application guidelines and incentive levels for load displacement generation projects, follow-up on current project leads, and promote to other eligible customers.

Stand-by Generators

Program Description

This program may provide 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.

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.

Discussion of 2005 Activities

Action

- Through a joint initiative with the Coalition of Large Distributors (CLD), a leading energy consultant was engaged to survey target customers to assess the capacity and availability of back-up generators in Veridian's service area.
- Upon completion of this customer survey, the CLD engaged the same consultant to further 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, Veridian has worked with representatives of Enbridge Consumers Gas to identify and remove barriers to the use of back-up generators.

Results to Date

- Discussions have taken place with a number of customers interested in making back-up generation capacity available for dispatch by Veridian. No formal commitments have been made to date.

Next Steps

- Work with the CLD to finalize application guidelines and incentive levels for back-up generator projects, follow-up on current project leads, and promote to other eligible customers.

Peak Shaving Generator for Municipal Office

Program Description

A Bi-Fuel standby diesel generator will be sited at the Township of Scugog Municipal Building and serve the dual role as a “peak shaver” for demand response and a back-up power supply for the Township Emergency Command Centre in the event of a major emergency.

Target users

The Township of Scugog.

Benefits

Some of the benefits of peak shaving to the utility are:

- Dispatchable peak demand reduction
- Maximum use of standby capacity through safe parallel operation with the utility grid
- Cost-effective solution consistent with least cost planning emphasis
- Improved system load factor
- Enhanced voltage stability and avoided line losses during heavy load conditions

Some of the benefits of peak shaving to the end user are:

Enhanced reliability as standby gensets are tested under real load conditions with “bumpless” power transfers and potential cost savings as separate maintenance testing is no longer required.

Discussion of 2005 Activities

Action

- Have purchased a 60 kW bi-fuel standby generator for installation at the Scugog Municipal building, and have made contractual commitments to have it installed and available for operation during periods of supply constraints during the summer of 2006.

Results to Date

- None.

Next Steps

- Install and commission back-up generator, and arrange for dispatch during periods of supply constraints.

4. Lessons Learned

Working Together

During the past year, the members of the Coalition of Large Distributors (Toronto Hydro, Hydro Ottawa, Horizon Utilities, Veridian, Enersource Hydro Mississauga and Powerstream) have worked together on the execution of their individual CDM plans. A Steering Committee was established to oversee and coordinate joint actions, and program-specific working committees were constituted to promote the sharing of ideas, experiences and costs. The benefits of this joint action are numerous. For example:

Purchasing power:

- Together, the CLD group represents about 40% of the Province's electricity load. Accordingly, the group commands the attention of the marketplace when seeking vendors to support its CDM programs. The joint purchasing power of the CLD has provided it with access to the most innovative products and services available, at very competitive costs.

Consistent messaging:

- The adoption and promotion of the powerWISE brand by the CLD members will provide significant long-term benefits. The development of this single brand that is trusted by consumers and synonymous with energy efficiency can be leveraged to maximize the reach and penetration of future CDM initiatives, in a way that could not be achieved by each member LDC on its own.

Cost Sharing:

- While local electricity markets and customer contacts often deserve and demand customized treatment, other aspects of CDM programs are common and lend themselves to cost sharing. The CLD members early on agreed to a standard cost sharing formula to ensure that benefits were fairly allocated. During 2005, CLD members jointly funded a number of initiatives such as the establishment of the powerwise.ca website, the development of the powerWISE Business Incentives Program and more. Sharing costs has enabled individual CLD members to help minimize program costs.

Exchange of Ideas/Approaches:

- Customers' attitudes towards energy use are not homogeneous. Achieving a conservation culture in Ontario will require experimentation with varied and diverse approaches. Working in partnership with the CLD members has provided the opportunity to learn from each other's successes and setbacks. For example, Toronto Hydro's launch of its peakSAVER program in late 2005 offered proof that many customers are willing to participate in an air conditioner load control program for very little financial reward. This success will be translated into a broader scale program rollout across all CLD service areas in 2006.

Market Conditions

Veridian's first full year of CDM activities offered a number of important insights into the characteristics of Ontario's electricity marketplace as related to the promotion of CDM. For example:

Acceptance of Smart meters:

- During 2005, Veridian installed almost 400 residential smart meters and notified more than 100 general service customers that they would transition to interval meters and, in many cases, be billed based on hourly electricity rates. Perhaps surprisingly, there was little or no negative reaction to these initiatives. This was not due to simple lack of interest. When a smart meter forum was held in the community of Sunderland, an estimated one-third of the 400 affected customers attended. Almost all were either supportive or indifferent to the advent of smart meters and time-of-use rates.

Effectiveness of LDC Sponsored Coupon Campaigns:

- As detailed elsewhere in this report, Veridian participated in a fall 2005 powerWISE coupon campaign through which customers were provided with product discount coupons redeemable at Canadian Tire. Despite coupon values that were not overly generous, the coupon redemption rate far exceeded the forecast rate of 3%; a forecast which was based on professional advice from a firm with experience with these types of promotions. In fact, Veridian almost doubled the forecast rate with an actual redemption rate of 5%. This is clear evidence that customers read the content of their utility bill envelopes and that they are receptive to the conservation message.

Challenges to Efficiency Investments by Business:

- While promotions targeted at the residential market seem to have significant traction, the commercial, industrial and institutional markets appear to present a challenge. To date, Veridian has been disappointed by the response to its powerWISE Business Incentive Program offering. From discussions with potential recipients of these incentive payments, it is clear that more effort is needed to streamline energy efficiency promotions to minimize the distractions that they present to customers' core businesses. Most mid-sized customers do not have the internal resources to assess energy savings opportunities. Simple and low capital cost solutions will be needed to move this segment of the marketplace.

Regulatory and Policy Environment

Ontario's fast changing regulatory and policy environment has presented challenges for distributors. The number of entities promoting conservation is increasing with the Ministry of Energy, the OPA and the IESO all taking on roles in advancing the conservation culture. A cooperative effort among various agencies will be required to avoid customer confusion and overlapping, inefficient program execution.

Distributors have also been challenged by new Board requirements related to the delivery of CDM. For example, it was not anticipated in late 2004 that TRC analysis would be a requirement for this annual report, and the issue of whether 'non-incremental' LDC expenses should be deemed as eligible for inclusion in an LDC's spending obligation was not addressed until near the end of the year. Uncertainty continues to persist regarding the application of Shared Savings and Loss Revenue Adjustment mechanisms.

Comments on Program Success

	Successful / H/M/L	Continue	Notes
Residential and Commercial <50 kW			
Co-Branded Mass Market	Yes - High	Yes	Entry of the Ontario Power Authority into this market will require cooperation and clarity of roles.
Smart Meter Pilot	Yes - High	Yes	Supported by provincial policy.
Commercial Institutional and Industrial >50 kW			
Smart Meter Program	Yes - High	Yes	Supported by provincial policy.
Leveraging Energy Conservation or Load Mgmt	Too early to tell	Yes	Little interest to date, but may benefit from more effective promotion.
Distribution Loss Reduction			
Distribution Loss Reduction	Yes - Medium	Yes	TRC results not as positive as some other program areas, but savings are firm and sustainable.
Distributed Generation			
Load Displacement	Too early to tell	Yes	Distributed generation and load displacement offers significant opportunities for on-peak load reductions, but technological, operational and business processes can be complex. More work required to fully assess.
Standby Generators	Too early to tell	Yes	
Peak Shaving Generator for Municipal Office	Too early to tell	Yes	

5. Conclusion

Veridian has achieved significant results during its first year of CDM efforts, and has laid a foundation for even greater future contributions to the Ontario Power Authority's '10% by 2007' conservation challenge. Veridian has:

- Firmly established the powerWISE brand through its partnership with the Coalition of Large Distributors (CLD): a brand that can be used to enhance the success of future programs. The brand has been supported by the launch of the powerWISE website, powerWISE fleet messaging, powerWISE tips newsletters distributed as bill inserts, and more.
- Worked with its CLD partners to initiate, design and deliver a comprehensive retailer coupon campaign with Canadian Tire, through which more than 2.3 million coupons were distributed province-wide. Veridian alone achieved a 5% coupon redemption rate, providing for 44 kW in peak demand savings and 671,000 in annual kWh savings. Experience gained from this initiative will benefit future coupon campaigns.
- Launched the powerWISE Business Incentives Program, which offers qualifying commercial, industrial and institutional customers cash incentives for energy efficient lighting, electric motor and unitary air conditioner conversions.
- Implemented a residential smart meter pilot program in the community of Sunderland, through which all of approximately 400 local customers were equipped with smart meters and provided with access to detailed consumption information via a secure website.
- Expanded the use of interval meters for larger customers, to immediately provide these users with the price signal needed to encourage them to conserve electricity during periods of high demand. The threshold for the use of interval meters was reduced from 500 kW to 200 kW, providing for the conversion of approximately 120 customer accounts to interval metering.
- Conducted an extensive engineering analysis of distribution system losses on its 13.8 kW network in Belleville, and developed a system optimization and power factor correction plan that will be implemented in 2006. These measures will deliver a peak demand reduction of 260 kW and annual kWh savings of 1.4 million kWh when fully implemented.
- Distributed approximately 1,700 compact fluorescent light bulbs along with conservation literature through venues including an energy conservation forum at the Pickering Town Centre and a Smart Meter forum held in the community of Sunderland.
- 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.

Appendix A - Evaluation of the CDM Plan

	Residential			Commercial		Distribution Loss Reduction	Distributed Energy		
	Total	Co-Branded Mass Market	Residential Smart Meter Pilot	C.I. & I. Smart Meter Program	Leveraging Energy Conservation & Load Mgmt.	Distribution Loss Reduction	Load Displacement	Standby Generation	Scugog Peak Shaving Generator
<i>Net TRC value (\$):</i>	\$274,129	\$274,129	n/a	n/a	-	-	-	-	-
<i>Benefit to cost ratio:</i>	\$4.71	\$4.71	n/a	n/a	-	-	-	-	-
<i>Number of participants or units delivered:</i>	8755	8359	385	11	0	0	0	0	0
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	7,401,113	7,401,113	n/a	n/a	0	0	0	0	0
<i>Total in year kWh saved (kWh):</i>	825,175	825,175	n/a	n/a	0	0	0	0	0
<i>Total peak demand saved (kW):</i>	44	44	n/a	n/a	0	0	0	0	0
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.03%	0.03%	n/a	n/a	0.00%	0.00%	0.00%	0.00%	0.00%
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.01%	0.01%	n/a	n/a	0.00%	0.00%	0.00%	0.00%	0.00%
<i>Gross in year C&DM expenditures (\$):</i>	\$335,863	\$55,176	\$157,364	\$95,574	\$1,391	\$17,885	\$6,555	\$1,918	\$0
<i>Expenditures per kWh saved (\$/kWh)*:</i>	\$0.41	\$0.07	n/a	n/a	-	-	-	-	-
<i>Expenditures per kW saved (\$/kW)**:</i>	\$7,633	\$1,254	n/a	n/a	-	-	-	-	-
<i>Utility discount rate (%):</i>	5.93%								

*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

(complete this section for each program)

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

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

This flagship co-branded mass-market program (e.g. powerWISE®) is a multifaceted approach to fostering the conservation culture in Ontario. Through development of a significant cooperative effort amongst six of the largest municipal LDCs, this program will become synonymous with specific initiatives such as Compact Fluorescent Lighting (CFL) change out programs, LED Christmas Lights, 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 contemplated as components of this program.

Target users

Mass-market including residential and small commercial <50 kW of monthly demand

Benefits

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

Measure(s):

	Space Cooling	Holiday Lights	Holiday Lights
Base case technology:	A/C Base Load	5W Christmas lights C-7 (25)	Incandescent Mini Lights
Efficient technology:	EE Ceiling Fan	SLED	SLED
Number of participants or units delivered:	105	781	781
Measure life (years):	20	30	30
	Space Cooling	Space Heating	Lighting Controls
Base case technology:	Static thermostat	Static thermostat	Outdoor lighting
Efficient technology:	Programmable thermostat	Programmable thermostat	Outdoor timer
Number of participants or units delivered:	247	95	147
Measure life (years):	18	18	20
	Lighting Control	Space Cooling Controls	CFL
Base case technology:	Indoor Lighting	A/C Base Load	60 watt incandescent
Efficient technology:	Indoor timer	Indoor timer	CFL
Number of participants or units delivered:	37	37	6129
Measure life (years):	20	20	4

B. **TRC Results:**

TRC Benefits (\$):		\$ 347,953.00
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 34,411.00
	Participant cost:	\$ 39,413.00
	Total TRC costs:	\$ 73,824.00
Net TRC (in year CDN \$):		\$ 274,129.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 4.71

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

Conservation Programs:

Demand savings (kW):	Summer	43.93
	Winter	184.17
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):	\$ 7,401,112.76	\$ 825,175.44
Other resources saved :		
	Natural Gas (m3):	
	Other (specify):	

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):
Energy savngs (kWh):

	<i>lifecycle</i>	<i>in year</i>
<input type="text"/>	<input type="text"/>	<input type="text"/>

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:	\$	55,176.00
	Incentive:		
	Total:	\$	55,176.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		
Participant costs (\$):	Incremental equipment:	\$	39,413.00
	Incremental O&M:		
	Total:	\$	39,413.00

E. **Comments:**

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Residential and Small Commercial SMART Meter Pilot

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

A pilot program for residential SMART meters will be deployed to enable the assessment of metering, communications, settlement, load control and other technologies that may be used to accommodate the universal application of SMART meters in the future. Further, sub-metering opportunities for the purposes of customer information in bulk-metered situations (i.e. condominiums) may be considered.

This initiative will commence upon the release of a formal definition of a SMART meter by the Board.

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 Veridian with the experience and knowledge needed to efficiently expand the use of SMART meters over the next several years.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
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):	

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. Program Costs*:

Utility direct costs (\$):	Incremental capital:	\$	135,860.00
	Incremental O&M:	\$	21,504.00
	Incentive:		-
	Total:	\$	157,364.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		-

E. Comments:

1. No kWh or kW results attributed.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Commercial, Industrial and Institutional (>50 kW) SMART Meter Program

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

Veridian will make an investment to further the use of SMART or interval meters by commercial industrial and institutional customers.

This program will commence upon the release of a formal definition of a SMART meter by the Board.

Target users

Commercial, Industrial and Institutional customers larger than 50 kW's.

Benefits

This program supports the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007. These meters are seen as an important means of establishing a 'conservation culture' in Ontario. In conjunction with appropriate rate structures, they will encourage customers to conserve or shift energy use.

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):	

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. Program Costs*:

Utility direct costs (\$):	Incremental capital:	\$	78,143.00
	Incremental O&M:	\$	17,431.00
	Incentive:		-
	Total:	\$	95,574.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		-

E. Comments:

1. No kWh or kW results attributed.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Leveraging Energy Conservation and Load Management

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.

Target users

Large consumers over 50 kW including schools, large commercial facilities, institutional facilities, 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.

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):	

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. Program Costs*:

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	1,391.00
	Incentive:	\$	-
	Total:	\$	1,391.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		-

E. Comments:

1. No kWh or kW results in 2005.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Distribution Loss Reduction

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

The Distribution Loss Reduction 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:

Power Factor Correction - Under the Power Factor Correction initiative, a power factor assessment will be completed which will identify locations for the installation of power factor correction capacitor banks. The results and available funding will determine which projects proceed.

Power System Load Balancing - This program is designed to ascertain where load shifting can occur within the grid to improve system efficiency including the location of optimized "open points". It is estimated that approximately 5% - 10% of system losses could be saved.

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 IMO's voltage reduction program and will not interfere with the effectiveness of that program.

Target users

All of Veridian'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.

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:	
<hr/>	
Net TRC (in year CDN \$):	
<hr/>	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ -

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. **Program Costs*:**

Utility direct costs (\$):	<i>Incremental capital:</i>	\$	14,415.00
	<i>Incremental O&M:</i>	\$	3,470.00
	<i>Incentive:</i>	\$	-
	<i>Total:</i>	\$	17,885.00

Utility indirect costs (\$):	<i>Incremental capital:</i>	
	<i>Incremental O&M:</i>	
	<i>Total:</i>	-

Participant costs (\$):	<i>Incremental equipment:</i>	
	<i>Incremental O&M:</i>	
	<i>Total:</i>	-

E. **Comments:**

1. No kWh or kW results in 2005.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Distributed Energy - Load Displacement Program

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.

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, back-up power possibilities, education and skills development

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):	\$ -

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):		
Other resources saved :		
Natural Gas (m3):		
Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. **Program Costs*:**

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	6,555.00
	Incentive:	\$	-
	Total:	\$	6,555.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		-

E. **Comments:**

1. No kWh or kW results in 2005.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Distributed Energy - Stand-by Generator Program

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

This program may provide 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.

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.

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): \$ -

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

Conservation Programs:

Demand savings (kW):

	<i>Summer</i>	
	<i>Winter</i>	
	<i>lifecycle</i>	<i>in year</i>

Energy saved (kWh):

Other resources saved :

Natural Gas (m3):

Other (specify):

Demand Management Programs:

Controlled load (kW)

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

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

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

Demand Response Programs:

Dispatchable load (kW):

Peak hours dispatched in year (hours):

Power Factor Correction Programs:

Amount of KVar installed (KVar):

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

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy 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):	
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D. Program Costs*:

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	1,918.00
	Incentive:	\$	-
	Total:	\$	1,918.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		-

E. Comments:

1. No results to report for 2005.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Distributed Energy - Peak Shaving Generator for Scugog Municipal Office

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

A Bi-Fuel standby diesel generator will be sited at the Township of Scugog Municipal Building and serve the dual role as a "peak shaver" for demand response and a back-up power supply for the Township Emergency Command Centre in the event of a major emergency.

Target users

The Township of Scugog.

Benefits

Some of the benefits of peak shaving to the utility are:

- Dispatchable peak demand reduction
- Maximum use of standby capacity through safe parallel operation with the utility grid
- Cost-effective solution consistent with least cost planning emphasis
- Improved system load factor
- Enhanced voltage stability and avoided line losses during heavy load conditions

Some of the benefits of peak shaving to the end user are:

Enhanced reliability as standby gensets are tested under real load conditions with "bumpless" power transfers and potential cost savings as separate maintenance testing is no longer required.

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):	\$ -

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):		
Other resources saved :		
Natural Gas (m3):		
Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW): _____
lifecycle *in year*
Energy 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: \$ _____ -
Incentive: \$ _____ -
Total: \$ _____ -

Utility indirect costs (\$): *Incremental capital:* _____
Incremental O&M: _____
Total: _____ -

Participant costs (\$): *Incremental equipment:* _____
Incremental O&M: _____
Total: _____ -

E. Comments:

1. No results to report for 2005. _____

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.