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ENERSOURCE HYDRO MISSISSAUGA

Conservation and Demand Management Plan

Ontario Energy Board File No. RP-2004-0203

November 4th, 2004

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Introduction

Ontario's Minister of Energy has authorized electricity distributors to apply to the Ontario Energy Board (Board) for 2005 rate implementation of their third installment of market adjusted revenue requirement (MARR), on the condition that an equivalent amount of incremental revenue be invested by those distributors in conservation and demand management activities. In a letter dated May 31, 2004 to electricity distributors, the Minister identified some of the activities that might be included in a distributor's Conservation and Demand Management Plan, including:

- Energy efficiency;
- Behavioural and operational changes, including the application of benchmarking or "smart" control systems;
- Load management measures which facilitate interruptible and dispatchable loads, dual fuel applications, thermal storage, and demand response;
- Measures to encourage fuel switching which reduces the total system energy for a given end-use;
- Programs and initiatives targeted to low income and other hard to reach consumers; and
- Distributed energy options behind a customer's meter such as tri-generation, co-generation, ground source heat pumps, solar, wind, and biomass systems.

On October 5, 2004 the Board issued a procedural order (RP-2004-0203) setting out the process for how distributors may apply for approval of a Conservation and Demand Management Plan. It also set out the filing requirements for a distributor's plan. Distributors were given the option of applying for interim or final approval of their plan.

Enersource Hydro Mississauga's Conservation and Demand Management (CDM) Plan has been developed within the context of the Minister of Energy's May 31, 2004 letter and the procedural order issued by the Board.

Enersource Hydro Mississauga hereby requests the Board's approval and final order authorizing its CDM plan as being appropriate and effective in discharging its CDM investment obligation, subject to issuance in due course of an order for distribution rates including the final tranche of the market adjusted revenue requirement (MARR).

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Plan Budget and Assumptions

Enersource Hydro Mississauga's third MARR installment is approximately $8.2 million, exclusive of any payment in lieu of taxes.

Through a letter accompanying its Preliminary Guidelines for Electricity Distributor Conservation and Demand Management Activities, the Board has authorized that distributor conservation and demand management spending may occur until September 30, 2007.

Enersource Hydro Mississauga's Conservation and Demand Management Plan is therefore based on investing approximately $8.2 million in a combination of capital and operating expenses during the period from January 1, 2004 to September 30, 2007.

The implementation of this plan will require re-deployment of some existing personnel. Costs associated with the use of existing resources to implement this plan have been allocated to the individual programs and are provided for in the annual budget figures.

While the current plan is well balanced, it is recognized that the industry and regulatory framework is dynamic. Enersource Hydro Mississauga will continue to assess and update its plan as new opportunities are presented. If necessary, Enersource Hydro Mississauga will re-allocate funds between programs to respond to customer demand levels. However, Enersource Hydro Mississauga will make best efforts to achieve the target levels of capital and operating expenditures by year.

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Objectives

The Province of Ontario is facing serious challenges in meeting its future electricity needs. Energy conservation and demand management has been identified as one of the most viable and cost-effective means of meeting the province's energy needs in the short term.

The Minister of Energy has called for the creation of a 'Conservation Culture' in the province, and has established two important objectives for the electricity sector and electricity consumers. First, he has targeted a reduction in Ontario's demand for electricity by 5% by 2007. Second, he has committed to the installation of 800,000 SMART electricity meters by 2007, and the full deployment of SMART meters for all electricity consumers by 2010.

The objective of this plan is to contribute to the emergence of a conservation culture in Ontario and, more specifically, to support the Minister's commitments to peak demand reduction and SMART meter installations.

Strategy

In developing this plan, the following criteria were used to guide the selection of component programs:

i. Allocation of Benefits – The overall plan should distribute benefits broadly to Enersource Hydro Mississauga's customers.

ii. Certainty of Achieving Targeted Benefits – Preference was given to investments that offer more predictable results.

iii. Leveraging Partnerships – Partnerships will be sought to deliver 'behind the meter' programs that will benefit from greater scale for cost-effective implementation.

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Programs

Conservation and Demand Management (CDM)

Residential and Small Commercial (< 50 KW)

Co-branded Mass Market 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, water heater blanket wraps, school based education and a host of other programs aimed at providing customers 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

Benefits

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

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$280	$270	$270	$820
Capital Expenditures	$0	$0	$0	$0
Totals	$280	$270	$270	$820

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SMART Meter Pilot

Description

A pilot program for residential SMART meters will be deployed to enable the assessment of metering, communications, settlement and 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 a bulk-metered situation (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 Enersource Hydro Mississauga 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.

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$60	$50	$50	$160
Capital Expenditures	$300	$	$	$300
Totals	$360	$50	$50	$460

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Residential Load Control Program

Description

Load control uses a real time communications link to enable or disable customer loads. 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.

Target users

Load control applies to all market segments. Though the control systems and technologies may vary by market segment, the methodology remains the same.

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.

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$25	$35	$45	$105
Capital Expenditures	$125	$150	$200	$475
Totals	$150	$185	$245	$580

"Electric Avenue" – A Community Pilot

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, etc.

Target users

Residential and small commercial customers, either in a new or existing community

Benefits

Potential high visibility project that could demonstrate the before and after impact of serious energy conservation and load control initiatives

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$20	$25	$30	$75
Capital Expenditures	$75	$75	$100	$250
Totals	$95	$100	$130	$325

Social Housing Program

Description

A province wide centralized energy management service for the social housing sector may be developed in collaboration with the Provincial Government, utilities (e.g. Enbridge, Union Gas) and others.

A pilot program may be conducted to determine feasibility with an expectation that a full-scale provincial program would follow.

Target users

Local social housing corporations, non-profit homes and co-op housing. For the initial pilot we will attempt to do one building in the Mississauga area

Benefits

Synergies will be created though the combined initiatives of the various agencies.

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$25	$20	$20	$65
Capital Expenditures	$50	$75	$75	$200
Totals	$75	$95	$95	$265

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Commercial, Industrial and Institutional (> 50 KW)

SMART Meter Program

Description

Enersource Hydro Mississauga will further the use of SMART or interval meters to include all 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

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.

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$60	$30	$30	$120
Capital Expenditures	$440	$0	$0	$440
Totals	$500	$30	$30	$560

Leveraging Energy Conservation and/or Load Management Programs

Description

Existing energy conservation and/or load management programs such as NRCan's Energy Innovators Initiative and 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.

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

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$25	$25	$25	$75
Capital Expenditures	$50	$50	$50	$150
Totals	$75	$75	$75	$225

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Commercial Industrial & Institutional (CI&I) 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. Some new technologies will be tested in this area that specifically address the need of this larger type of customer.

Target Users

Larger commercial, industrial and institutional customers

Benefit

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

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$25	$20	$20	$65
Capital Expenditures	$700	$500	$500	$1700
Totals	$725	$520	$520	$1765

On-the-Bill Financing

Description

On-the-Bill financing will start with a pilot offering that will be developed to help remove a significant energy conservation purchase barrier. This 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 for scarce capital dollars. Financing arrangements will be made with third party investment organizations and the payment amounts will be presented on the customer's hydro bill.

Target Users

Larger commercial, industrial and institutional customers

Benefit

It is anticipated that this program will remove a significant energy conservation investment-purchasing barrier

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$36	$72	$72	$180
Capital Expenditures	$5	$0	$0	$5
Totals	$41	$72	$72	$185

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Distribution Loss Reduction

Voltage Profile Management

Description:
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
The results of this program will positively impact all of Enersource Hydro Mississauga'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 delivery and 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.

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$10	$15	$30	$55
Capital Expenditures	$150	$150	$300	$600
Totals	$160	$165	$330	$655

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 efficiency of power 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, fuel cell 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, residential, schools, colleges and universities

Benefits

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

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$50	$50	$75	$175
Capital Expenditures	$200	$200	$200	$600
Totals	$250	$250	$275	$775

Stand-by Generators

Description

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

Target Users

Commercial and industrial customers with sufficiently sized stand-by generators

Benefits

Reduction of customer and system peak demand and energy costs

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$8	$23	$53	$83
Capital Expenditures	$250	$300	$315	$865
Totals	$258	$323	$368	$948

Overall Program Support

Description

Several functions supporting the overall CDM initiatives such as; an annual Key Account Conference, Home Show participation, an energy conservation website, customer newsletters, staff training and media support activities etc. may be considered.

Outreach support to smaller utilities is an additional area that may be explored.

Target Users

All customer classes

Benefits

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

Budget

$K	2004/2005	2006	2007	Totals
Operating Expense	$300	$200	$200	$700
Capital Expenditures	$0	$0	$0	$0
Totals	$300	$200	$200	$700

Conclusion

Enersource Hydro Mississauga believes that the plan set out in this document is a prudent and effective approach in helping to achieve the Province's energy conservation and demand management goals. This plan addresses many of the potential initiatives outlined in the Minister's letter and represents a responsible first step in Enersource Hydro Mississauga's implementation of CDM programs.

Enersource Hydro Mississauga looks forward to the Board's approval of this plan and the implementation of these initiatives. Enersource Hydro Mississauga requests that in the Board's Decision granting approval of Enersource Hydro Mississauga's CDM Plan, the Board confirm that the approved plan will discharge Enersource Hydro Mississauga's obligation to invest an amount equivalent to it's third tranche MARR, subject to *ex post* review by the Board only with respect to planned versus actual CDM spending.

Contact Information

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Program Budget and Timeline Summary

The following spreadsheet provides an overall summary of funding and timelines for the suite of Enersource Hydro Mississauga's Conservation and Demand Management Programs.

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Program Budget and Timeline Summary

		Annual Budget ($ '000)			Total Budget
		2004-05	2006	2007	($ '000)
CONSERVATION AND DEMAND MANAGEMENT					
Residential and Small Commercial (< 50 kW)					
	OPEX	$410	$400	$415	$1,225
	CAPEX	$550	$300	$375	$1,225
Commercial, Industrial & Institutional Market (> 50 kW)					
	OPEX	$146	$147	$147	$440
	CAPEX	$1,195	$550	$550	$2,295
Sub-Total, Conservation & Demand Management:		$2,301	$1,397	$1,487	$5,185
DISTRIBUTION LOSS REDUCTION					
	OPEX	$10	$15	$30	$55
	CAPEX	$150	$150	$300	$600
Sub-Total, Distribution Loss Reduction:		$160	$165	$330	$655
DISTRIBUTED ENERGY					
	OPEX	$58	$73	$128	$258
	CAPEX	$450	$500	$515	$1,465
Sub-Total, Distributed Energy:		$508	$573	$643	$1,723
OVERALL PROGRAM SUPPORT					
	OPEX	$300	$200	$200	$700
	CAPEX	$0	$0	$0	$0
Sub-Total, Distributed Energy:		$300	$200	$200	$700
Total Budget, All Programs		**$3,269**	**$2,335**	**$2,660**	**$8,263**