



# **Veridian Connections Inc.**

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

**Ontario Energy Board File No. RP-2004-0203**

November 4<sup>th</sup>, 2004



## TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>2</b>
<b>PLAN BUDGET AND ASSUMPTIONS .....</b>	<b>3</b>
<b>OBJECTIVES .....</b>	<b>4</b>
<b>STRATEGY .....</b>	<b>4</b>
<b>PROGRAMS .....</b>	<b>5</b>
<b>CONSERVATION AND DEMAND MANAGEMENT (CDM).....</b>	<b>5</b>
<b>RESIDENTIAL AND SMALL COMMERCIAL (&lt; 50 kW) .....</b>	<b>5</b>
<i>Co-branded Mass Market Program.....</i>	<i>5</i>
<i>SMART Meter Pilot .....</i>	<i>6</i>
<i>SMART Meter Program .....</i>	<i>7</i>
<b>DISTRIBUTION LOSS REDUCTION .....</b>	<b>8</b>
<i>Distribution Loss Reduction .....</i>	<i>8</i>
<b>DISTRIBUTED ENERGY .....</b>	<b>9</b>
<i>Load Displacement .....</i>	<i>9</i>
<i>Stand-by Generators.....</i>	<i>10</i>
<b>CONCLUSION .....</b>	<b>11</b>
<b>CONTACT INFORMATION.....</b>	<b>11</b>
<b>PROGRAM BUDGET AND TIMELINE SUMMARY .....</b>	<b>12</b>



## Introduction

Ontario's Minister of Energy has authorized electricity distributors to apply to the Ontario Energy Board (the '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;
- Behavioral 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.

Veridian Connections' 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.

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



## **Plan Budget and Assumptions**

Veridian's third MARR installment is approximately \$3.5 million, exclusive of any payments 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.

Veridian's Conservation and Demand Management Plan is therefore based on investing approximately \$3.5 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. Veridian will continue to assess and update its plan as new opportunities are presented. If necessary, Veridian will re-allocate funds between programs to respond to customer demand levels. However, Veridian will make best efforts to achieve the target levels of capital and operating expenditures by year.



## 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 Veridian'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.



## 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 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, commercial and industrial

###### Benefits

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

###### Budget

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$87	\$123	\$140	\$350
Capital Expenditures	\$0	\$0	\$0	\$0
Totals	\$87	\$123	\$140	\$350



## ***SMART Meter Pilot***

### 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 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 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.

### Budget

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$28	\$32	\$32	\$92
Capital Expenditures	\$217	\$0	\$0	\$217
Totals	\$245	\$32	\$32	\$309



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

### ***SMART Meter 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

#### 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

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$91	\$149	\$135	\$375
Capital Expenditures	\$128	\$349	\$349	\$826
Totals	\$219	\$498	\$484	\$1201





## **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, selected and implemented 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.

#### 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.

#### Budget

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$20	\$30	\$30	\$80
Capital Expenditures	\$320	\$700	\$200	\$1220
Totals	\$340	\$730	\$230	\$1300



## ***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 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.

#### Budget

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$24	\$24	\$24	\$72
Capital Expenditures	\$56	\$56	\$56	\$168
Totals	\$80	\$80	\$80	\$240



## ***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 may be 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

<u>\$k</u>	<u>2004/05</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$10	\$5	\$5	\$20
Capital Expenditures	\$40	\$20	\$20	\$80
Totals	\$50	\$25	\$25	\$100



## Conclusion

Veridian 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 Veridian's implementation of CDM programs.

Veridian looks forward to the Board's approval of this plan and the implementation of these initiatives. Veridian requests that in the Board's Decision granting approval of Veridian's CDM plan, the Board confirm that the approved plan will discharge Veridian's obligation to invest an amount equivalent to its 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

		Annual Budget (\$ '000)			Total Budget (\$ '000)
		2004-05	2006	2007	
<b>CONSERVATION AND DEMAND MANAGEMENT</b>					
Residential and Small Commercial (< 50 kW)					
- Co-branded Mass Market Program	OPEX	87	123	140	350
	CAPEX	0	0	0	0
- Smart Meter Pilot	OPEX	28	32	32	92
	CAPEX	217	0	0	217
Commercial, Industrial & Institutional Market (> 50 kW)					
- Smart Meter Program	OPEX	91	149	135	375
	CAPEX	128	349	349	826
Sub-Total, Conservation & Demand Management:		551	653	656	1860
<b>DISTRIBUTION LOSS REDUCTION</b>					
- Distribution Loss Reduction	OPEX	20	30	30	80
	CAPEX	320	700	200	1220
Sub-Total, Distribution Loss Reduction:		340	730	230	1300
<b>DISTRIBUTED ENERGY</b>					
- Load Displacement	OPEX	24	24	24	72
	CAPEX	56	56	56	168
-Standby Generators	OPEX	10	5	5	20
	CAPEX	40	20	20	80
Sub-Total, Distributed Energy:		130	105	105	340
<b>Total Budget, All Programs</b>		<b>1021</b>	<b>1488</b>	<b>991</b>	<b>3500</b>