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November 29, 2004

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ONTARIO ENERGY BOARD

Mr. John Zych, Board Secretary  
Ontario Energy Board  
2300 Yonge Street, 26<sup>th</sup> Floor  
Toronto, Ontario  
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Dear Mr. Zych: *70 30/11*

**RE: Conservation & Demand Management Plan – File No.: RP-2004-0203**  
**Applicant – Erie Thames Power Corporation**

Pursuant to the filing requirements outlined in Procedural Order No. RP-2004-0203, please find attached Erie Thames Power Corporations' Conservation and Demand Management Plan (C&DM).

For the information of the Board, Erie Thames worked collaboratively and dialogued with a number of other utilities during the preparation of this Plan. The utilities that participated in this group includes Bluewater Power Distribution Corporation, Chapleau Public Utilities Corporation, Essex Power Corporation, Festival Hydro Inc., Lakefront Utilities Inc., Northern Ontario Wires Inc., PUC Distribution Inc. (Sault Ste. Marie), St. Thomas Energy Inc., West Coast Huron Energy Inc. (Goderich) and West Perth Power Inc.

At the outset, our collective goal was to identify C&DM activities of common interest and to explore the potential to work together during the implementation of each utility's Plan over the next three years. Ultimately, our hope is to develop and implement a shared program management framework that will proactively contribute to the creation of a new "conservation culture" within the communities we serve in the most efficient and productive manner.

Should you have any questions or require clarification on any item contained in our Plan, please do not hesitate to give me a call at (519) 485-1820.

Yours truly,

Jeff Pettit  
President  
Erie Thames Power

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# **ERIE THAMES POWER**

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## **Conservation and Demand Management Plan**

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

**November 15, 2004**

## TABLE OF CONTENTS

<b>Introduction .....</b>	<b>3</b>
<b>Plan Budget and Assumptions.....</b>	<b>4</b>
<b>Objectives.....</b>	<b>5</b>
<b>Strategy .....</b>	<b>5</b>
<b>Programs .....</b>	<b>6</b>
<b>Conservation and Demand Management (CDM) .....</b>	<b>6</b>
<b>Residential and Small Commercial (&lt; 50 KW).....</b>	<b>6</b>
<b>Co-branded Mass Market Program.....</b>	<b>6</b>
<b>“Electric Avenue” - A Community Pilot .....</b>	<b>7</b>
<b>Social Housing Program.....</b>	<b>8</b>
<b>Commercial, Industrial and Institutional (&gt; 50 KW) .....</b>	<b>9</b>
<b>SMART Meter Program .....</b>	<b>9</b>
<b>LED Retrofits for Traffic Lights .....</b>	<b>10</b>
<b>Street Light Replacements .....</b>	<b>11</b>
<b>Leveraging Energy Conservation and/or Load Management Programs .....</b>	<b>12</b>
<b>Distribution Loss Reduction .....</b>	<b>13</b>
<b>Distribution Loss Reduction .....</b>	<b>13</b>
<b>Overall Program Support .....</b>	<b>14</b>
<b>Conclusion.....</b>	<b>15</b>
<b>Contact Information .....</b>	<b>15</b>

## **Introduction**

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

Erie Thames Power'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.

Erie Thames Power 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).

## **Plan Budget and Assumptions**

Erie Thames Power's third MARR installment is approximately \$ 266,000, 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.

Erie Thames Power's Conservation and Demand Management Plan is therefore based on investing approximately \$ 266,000 in a combination of capital and operating expenses during the period from January 1, 2005 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. Erie Thames Power will continue to assess and update its plan as new opportunities are presented. If necessary, Erie Thames Power will re-allocate funds between programs to respond to customer demand levels. However, Erie Thames Power 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 Erie Thames Power'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 other regional LDCs, this program will become synonymous with specific initiatives such as Compact Fluorescent Lighting (CFL) change out programs, LED Christmas Lights, Energy Star, 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, home energy profiling, conservation monitoring and measurement, an energy expert will provide for and allow all customers to who chose to conserve, 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	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$10	\$10	\$5	\$25
Capital Expenditures	\$35	\$0	\$0	\$35
Totals	\$45	\$10	\$5	\$60



### **“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. This initiative will be coupled with our online services so customers can see the potential of energy efficiency initiatives.

#### 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	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$2	\$2	\$1	\$5
Capital Expenditures	\$0	\$10	\$0	\$10
Totals	\$2	\$12	\$1	<u>\$15</u>





## **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 Erie Thames Power Licensed area.

### Benefits

Synergy will be created through the combined initiatives of the various agencies.

### Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$5	\$0	\$0	\$5
Capital Expenditures	\$0	\$0	\$0	\$0
Totals	\$5	\$0	\$0	<u>\$5</u>

## **Commercial, Industrial and Institutional (> 50 KW)**

### **SMART Meter Program**

#### Description

Erie Thames Power 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 of shift energy use.

#### Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$10	\$1	\$1	\$12
Capital Expenditures	\$25	\$0	\$0	\$25
Totals	\$35	\$1	\$1	<u>\$37</u>

**LED Retrofits for Traffic Lights**Description

This initiative involves replacing traffic signals at intersections to light-emitting diode (LED) technology, which is now fairly common in many U.S. municipalities.

Target users

Municipalities

Benefits

This program results in significant energy savings since the LED technology uses approximately 80% less electricity. Other benefits include reduced maintenance (LED's last longer) and offer improved visibility.

Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$0	\$0	\$0	\$0
Capital Expenditures	\$5	\$5	\$5	\$15
Totals	\$5	\$5	\$5	<u>\$15</u>

## **Street Light Replacements**

### Description

This initiative involves replacing old street lights with high efficiency units.

### Target users

Municipalities

### Benefits

This program results in significant energy savings since the newer street light technology uses approximately 20% less electricity. Other benefits include reduced maintenance as the high pressure sodium's are rated for twice the life of mercury vapor bulbs.

### Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$1	\$1	\$1	\$3
Capital Expenditures	\$9	\$18	\$9	\$36
Totals	\$10	\$19	\$10	<u>\$39</u>

**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 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.

Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$0	\$10	\$0	\$10
Capital Expenditures	\$0	\$0	\$0	\$0
Totals	\$0	\$10	\$0	<u>\$10</u>

## **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. The 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.

**Voltage Conversion**– Voltage upgrades can save up to 90% of the losses associated with a feeder as higher voltages and lower current results in lower losses. This study will ascertain the locations and value of voltage conversions. This program could also involve changing out all the meters on a particular feeder to SMART Meters so that the exact losses can be determined.

**Power System Optimization Study** – This program is an engineering study 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.

**Line Loss Reductions** – Replacement of conductor such as #6 AWG copper with #2 AWG aluminum will reduce line losses. An evaluation of where such opportunities may exist may be undertaken. The results and available funding will determine which projects proceed.

**Transformer and Other Losses** – Using infrared scans of transformers this program will help to identify additional electricity losses including overloaded equipment. “Hot” transformers will be investigated further to determine operational improvement opportunities.

#### Target users

The result of this program will positively impact all of Erie Thames Power’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.

Reductions in these costs will therefore benefit all customers.

#### Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$10	\$5	\$0	\$15
Capital Expenditures	\$0	\$0	\$45	\$45
Totals	\$10	\$5	\$45	\$60

## **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 newsletter, 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

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

### Budget

\$K	<u>2004/2005</u>	<u>2006</u>	<u>2007</u>	<u>Totals</u>
Operating Expense	\$10	\$10	\$5	\$25
Capital Expenditures	\$0	\$0	\$0	\$0
Totals	\$10	\$10	\$5	<u>\$25</u>

## **Conclusion**

Erie Thames Power 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 Erie Thames Power's implementation of CDM programs.

Erie Thames Power looks forward to the Board's approval of this plan and the implementation of these initiatives. Erie Thames Power requests that in the Board's Decision granting approval of Erie Thames Power CDM Plan, the board confirm that the approved plan will discharge Erie Thames Power'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**

The following spreadsheet provides an overall summary of funding and timelines for the suite of Erie Thames Power's Conservation and Demand Management Programs.



## Program Budget and Timeline Summary

		Annual Budget (\$ '000)			Total Budget
		2004-05	2006	2007	(\$ '000)
<b>CONSERVATION AND DEMAND MANAGEMENT</b>					
<b>Residential and Small Commercial (&lt;50 KW)</b>	OPEX	17	12	6	35
	CAPEX	35	10	0	45
<b>Commercial, Industrial and Institutional (&lt;50 KW)</b>					
	OPEX	11	12	2	25
	CAPEX	39	23	14	76
<b>Sub-Total, Conservation and Demand Management</b>		102	57	22	181
<b>DISTRIBUTION LOSS REDUCTION</b>					
	OPEX	10	5	0	15
	CAPEX	0	0	45	45
<b>Sub-Total, Distribution Loss Reduction</b>		10	5	45	60
<b>OVERALL PROGRAM SUPPORT</b>					
	OPEX	10	10	5	25
	CAPEX	0	0	0	0
<b>Sub-Total, Overall Program Support</b>		10	10	5	25
<b>Total Budget, All Programs</b>		122	72	72	266