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December 15, 2004

Mr. John Zych, Board Secretary
Ontario Energy Board
2300 Yonge Street, 26th Floor
Toronto, Ontario
M4P 1E4

20/12
Dear Mr. Zych:

RE: Conservation & Demand Management Plan – File No.: RP-2004-0203
Applicant – PUC Distribution Inc. (Sault Ste. Marie)

Pursuant to the filing requirements outlined in Procedural Order No. RP-2004-0203, please find attached PUC Distribution Inc.'s Conservation and Demand Management Plan (C&DM). Five copies and an electronic copy of the Plan are provided. The plan is submitted for approval as a final order by the Board.

For the information of the Board, PUC Distribution Inc. worked collaboratively with a number of other utilities during the preparation of this Plan. The utilities that participated in this group include Bluewater Power Distribution Corporation, Erie Thames Power, Essex Power Corporation, Festival Hydro Inc., Lakefront Utilities Inc., Northern Ontario Wires Inc, 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 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 (705) 759-6543.

Yours truly,

PUC Distribution Inc.

A handwritten signature in dark ink, appearing to read "A. Frederick", is written over the name of the sender.

Allan Frederick,
Vice President, Customer Services & Business Development



CONSERVATION AND DEMAND MANAGEMENT PLAN & ACTIVITIES

2004 to 2007

December 15, 2004

Prepared By:

Allan Frederick, Vice President
Customer Services & Business Development

PUC Distribution Inc.
765 Queen Street East, P.O. Box 9000
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Introduction:

In a letter dated May 31, 2004 to electricity distributors, the Minister of Energy identified some of the activities that might be included in a distributor's Conservation and Demand Management Plan (C&DM), 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 July 16, 2004 the Ontario Energy Board released a document entitled "Preliminary Guidelines for Electricity Distributor Conservation and Demand Management Activities". On August 30, 2004 the OEB released an Information Bulletin offering additional clarity to the expectations of distributors and encouraging distributors to apply for deferral accounts to begin planning and executing Conservation and Demand Management projects.

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.

PUC Distribution Inc.'s Conservation and Demand Management Plan has been developed within the context of the Minister of Energy's May 31, 2004 letter and the subsequent procedural order issued by the Board.

PUC Distribution Inc. has informally consulted with a number of other distributors to exchange ideas and assess the potential for joint ventures. Collectively, we decided that each distributor will submit a separate action plan to the OEB, but some LDCs will work co-operatively to execute common programs that will benefit from the synergies obtained through informal and formal alliances.

This document is intended to be PUC Distribution Inc.'s application for final approval of our Conservation and Demand Management Plan for the next three years.

Summary

PUC Distribution Inc. plans to invest in programs that will reduce the system demand and conserve energy. These investments will take place over the next three years, and will target all customer classes. The total budget for the three years presently reflects the third installment of PUC Distribution Inc.'s Market Adjustment Revenue Requirement (MARR) of \$900,000. However, PUC Distribution Inc. will monitor each program and some may be scaled back to ensure the spending does not exceed the allowed amount.

The table below summarizes the expenditures by year. Each program is explained in greater detail in subsequent sections of this document.

Program/Activity	2005	2006	2007	Total
1. Utility Asset Conservation Program	\$100,000	\$100,000	\$100,000	\$300,000
2. Customer Conservation Program	\$115,000	\$125,000	\$125,000	\$365,000
3. Education & Information	\$ 35,000	\$ 55,000	\$ 55,000	\$145,000
4. Partnerships Program	\$ 15,000	\$ 10,000	\$ 10,000	\$ 35,000
5. Planning & Coordination	\$ 35,000	\$ 10,000	\$ 10,000	\$ 55,000
Total Program Budget	\$300,000	\$300,000	\$300,000	\$900,000

The first three (3) programs will promote demand reduction and energy conservation, with results that are quantifiable. The Energy Awareness Program for Residential Customers and the Energy Seminars for General Service Customers will provide educational opportunities for all customers, but the results are more difficult to predict and monitor. However, each of these programs will have follow-up to determine their effectiveness.

Plan Budget and Assumptions:

PUC Distribution Inc.'s third MARR installment is approximately \$900,000 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.

PUC Distribution Inc.'s Conservation and Demand Management Plan is therefore based on investing approximately \$900,000 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. PUC Distribution Inc. will continue to assess and update its plan as new opportunities are presented. If necessary, PUC Distribution Inc. will re-allocate funds between programs to respond to customer demand levels. However, PUC Distribution Inc. will make best efforts to achieve the target levels of capital and operating expenditures by year.

Provincial 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.

Corporate 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 PUC Distribution Inc. 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.

Overview of Programs:

1. Utility Asset Conservation Program

(a) Description of Program:

The Utility Asset Conservation Program is a broad network based initiative to drive greater efficiencies within the distribution grid. The program will identify and implement opportunities for system enhancements. Engineering analysis and feasibility studies will be conducted in order that projects can be prioritized and selected based on the most attractive investment to results ratio.

- Voltage conversion will be given a high priority and a portion of the low voltage network will be converted over the next three years. Voltage upgrades can save up to 90% of the losses associated with a feeder as higher voltages and lower current results in lower losses. The project will also result in higher reliability for customers previously connected to lower voltage circuits.

Other items that will also be assessed include:

- 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 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 will 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.

(b) Target Users:

The result of this program will positively impact all PUC Distribution Inc. customers.

(c) Benefits:

Reduced electricity distribution system delivery losses will reduce system demand, relieve network capacity to accommodate growth, increase distribution system reliability and reduce the requirement for new delivery and generating capacity in the province. All customers will benefit from the initiatives in the Utility Asset Conservation Program.

Capital Expenditure

\$300,000

	2005	2006	2007	Total
Asset Conservation Program	\$100,000	\$100,000	\$100,000	\$300,000

2. Customer Conservation Program

(a) Description of Program:

This program is intended to provide demand side management and demand response programs for residential and small commercial customers. It includes pilot projects that are designed to assess the benefits of a specific DSM measure before a significant investment is made to introduce the measure on a large scale. Specific programs directed at low income and senior residential customers will also be initiated.

Two pilot projects have been identified for 2005. One involves the assessment of heat storage units for electrically heated residences and small commercial facilities. The other pilot project will assess the benefits of using broadband over powerline technology to collect and provide market prices and consumption information for customers and the integration of smart meters with the network, and allow for remote management of electrical appliances and equipment to reduce or shift electrical demand.

Programs that will be evaluated and implemented if found to be beneficial include:

- Energy audits, with no charge for low income, social assisted and fixed income customers who meet qualification requirements. A fee at cost will apply to other customers. Products and services as compact fluorescent lights, timers for block heaters, and weather stripping for electrically heated homes with acceptable energy savings pay back periods will be identified. Applicable government funding initiatives will be taken into consideration.
- Initiatives will be developed for multi-unit bulk-metered services to identify load usage by circuit and provide the ability to reduce or shift load.
- Load shedding of domestic hot water tanks during peak electrical demand periods.

(b) Target users:

Residential and small commercial customers with priority given to electric heat, low income and senior customers.

(c) Benefits:

Demand and energy reductions.

Capital Expenditure	\$300,000
Operating Expenditure	\$ 65,000

	2005	2006	2007	Total
Customer Conservation Program	\$115,000	\$125,000	\$125,000	\$365,000

3. Education and Information:

(a) Description of Program:

Programs will be developed that focus on community and specific customer information to foster an energy conservation culture. Programs and initiatives would include the following:

- The ability for customers to access their usage information by consumption and cost on an up to date basis as smart meters are implemented. This will require changes to customer information systems and hardware to allow access to information at a host site or the customer site.
- Tools will be developed such as energy calculators, energy profiling, timely customer communication based on established consumption or cost parameters and conservation tips.
- Energy conservation forums will be presented for specific customer categories.
- School programs will be implemented building on our successful "Caution and Chance" safety program.

(b) Target users:

Residential, small commercial customers, large users, and primary and secondary students.

(c) Benefits:

Demand and energy reductions through an immediate awareness of energy consumption and cost as well as longer term benefits through a change in culture and knowledge.

Capital Expenditure	\$ 75,000
Operating Expenditure	\$ 70,000

	2005	2006	2007	Total
Community Education	\$ 5,000	\$ 5,000	\$25,000	\$ 35,000
Customer Education	\$30,000	\$50,000	\$30,000	\$110,000

4. Partnership Programs:

(a) Description of Program:

Alliances will be formed with other organizations delivering or promoting energy efficient services and products. This will allow leveraging energy conservation resources for program delivery. Partnership opportunities will be developed with organizations as:

- Other local distribution companies for development of energy tools, common marketing and communication initiatives and information.
- Government and non profit sectors for funding, research, and delivery or promoting of their specific programs.
- Suppliers of DSM products and services to take advantage of joint marketing programs.

Operating Expenditure

\$35,000

	2005	2006	2007	Total
Partnerships Program	\$15,000	\$10,000	\$10,000	\$35,000

5. Planning and Coordination:

(a) Description of Program:

Monitoring and evaluation of the conservation and DSM plan are necessary to ensure that the programs proceed according to plan, that standard evaluation mechanisms are in place and that the plan is refined or modified as required to meet stated objectives.

Coordination is required amongst distribution companies that file jointly and shares resources as well as with partnerships that are developed.

Tracking and reporting of the various programs will be required to support prudence review of expenditures by the Ontario Energy Board.

Program research will be conducted to prioritize energy conservation programs, program benefit measurement, benchmarks and return, and the documentation of the findings. Research opportunities in the short term will focus on technologies in the areas of broadband over powerline, load control devices, reducing distribution system losses, and energy conservation tools.

Operating Expenditure

\$55,000

	2005	2006	2007	Total
Planning & Coordination	\$35,000	\$10,000	\$10,000	\$55,000

Conclusions:

PUC Distribution Inc. 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 PUC Distribution Inc.'s implementation of C&DM programs.

PUC Distribution Inc. looks forward to the Board's approval of this plan and the implementation of these initiatives.

Contact Information:

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