



EB-2005-0203

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Mr. John Zych
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Ontario Energy Board
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ONTARIO ENERGY BOARD
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Dear Mr. Zych:

*Re: Board File Number RP-2004-0203
Application by Guelph Hydro Electric Systems Inc. and
Wellington Electric Distribution Company
Conservation and Demand Management Plan*

We are very pleased to submit to you the Conservation and Demand Management Plan for Guelph Hydro Electric Systems Inc. (GHESI) and Wellington Electric Distribution Company (WEDCO). While GHESI and WEDCO are each independent Local Distribution Companies serving the communities of Guelph and Rockwood respectively, there will be synergies in combining the Conservation and Demand Management plan for these two affiliates which belong to the family of companies reporting to Guelph Hydro Inc. (GHI).

We look for the approval of the Board at your earliest convenience.

Yours sincerely,

GUELPH HYDRO ELECTRIC SYSTEMS &
WELLINGTON ELECTRIC DISTRIBUTION

J. A. MacKenzie, P.Eng.,
President & C.E.O.

EB-2005-0203

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cc: Directors
Vice-Presidents



GUELPH HYDRO ELECTRIC SYSTEMS INC.

&

WELLINGTON ELECTRIC DISTRIBUTION COMPANY

Conservation and Demand Management Plan

Ontario Energy Board File No. RP-2004-0203

January 13, 2005

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1.0 INTRODUCTION

This Conservation and Demand Management Plan (C&DM) has been developed for both Guelph Hydro Electric Systems Inc. (GHESI) and Wellington Electric Distribution Company (WEDCO). While both are independent Local Distribution Companies (LDC's), serving two distinct communities, Guelph and Rockwood respectively, there will be synergies in combining the C&DM plan for these two affiliates, which belong to a family of companies reporting to Guelph Hydro Inc. (GHI).

GHI's Vision is:

“Powering community well-being and environmental stewardship with energy and information solutions”,

and its Mission is:

“Through our family of companies, we strengthen the communities we serve by investing in energy and information solutions that bring value to our customers, our employees and our shareholders.”

The ultimate goal of Conservation and Demand Management is to create a “conservation culture” through sustained behavioural change in all Ontario electricity users. This clearly fits into our vision and mission, and GHESI and WEDCO welcome the opportunity to develop C&DM programs to support both its vision and mission, while also meeting the requirements of the Minister of Energy's May 31, 2004 letter and the procedural order issued by the Board. The programs from these two LDC's will be in addition to a recently created affiliate company, which will generate electricity, using methane gas from the City of Guelph's Eastview landfill site.

Clearly there is value in combining the C&DM Plans for these two affiliates, in this family of companies which share the same vision.

This application represents a joint submission by both GHESI and WEDCO.

2.0 BUDGET AND ASSUMPTIONS

Funding levels for the “third tranche” for GHESI equates to approximately \$1,156,560, and for WEDCO, approximately \$23,723. Both LDC’s plan to invest these amounts, as a minimum, in a combination of capital and operating expenses during the period January 1, 2004 to September 30, 2007. Budget allocated to non-LDC assets have been noted as operating expenses, not capital expenditures (e.g. LED traffic lights, etc.).

The implementation of this plan will require the use of some existing LDC employees, and these specific costs have been allocated to the individual program costs contained herein and are included in the annual budget figures provided.

Please note that the allocation of funds will vary by year, for various reasons. For example, some programs build on others, while others may depend on receiving further information (e.g. SMART meters) or conducting further research. Also, the allocation of existing resources will impact the breakdown by year.

This is a dynamic environment, and it is necessary to keep this plan flexible. The plan will be regularly reviewed and updated as new opportunities, information and innovative developments emerge. Funds may therefore need to be re-allocated between programs. To the extent possible, it is however, the intent to achieve or exceed the target levels of capital and operating expenditures by year.

3.0 PRINCIPLES

The following principles will help guide the selection, development and updating of programs for the C&DM Plan:

- The Plan should address all customer classes, as well as focus on low-income homeowners and low-income tenants who directly pay for their electricity.
- The Plan should have a mix of conservation assets and a mix of programs focusing on customers, staff and students.
- The Plan should invest in both research programs and programs with more predictable results.
- The Plan should partner where it makes sense with other organizations, and LDC’s.
- The Plan should look for synergies with other resources such as water, where it makes sense.
- The Plan should invest in pilot projects for demonstration purposes.
- The Plan should reward leadership in the area of C&DM.

4.0 CONSERVATION AND DEMAND MANAGEMENT (C&DM) PROGRAMS

4.1 Education and Promotion Programs – Customers, Staff and Students:

Description: The objective is to foster Ontario’s “conservation culture” in all customer classes. This will be achieved through common messaging in both LDC’s through for example:

- Billing stuffers and flyers.
- Discount and rebate coupon programs through local stores, etc.
- Media
- Seminars and workshops for various customer classes, in partnership, where possible with local groups such as Guelph Chamber of Commerce, Guelph Partners in Innovation, Community Energy Plan, etc.
- Further development of our website, which already allows customers to read and copy current and historical energy and water consumption, to provide access to more conservation related information and aids such as calculators on energy savings, etc.
- Partnerships with other organizations, where possible, to ensure consistent messaging.
- Using our existing School Safety Program to deliver a joint safety/conservation message.
- Training of LDC employees in Conservation and Demand Management so that they can be key ambassadors in the community, fostering the conservation message.
- Giveaways such as LED Xmas lights, timers, compact fluorescent lighting, etc.
- “Second” Fridge buy-backs.
- Exploring opportunities for rewarding leadership in C&DM such as providing recognition at the Annual Leadership Awards event in Guelph.
- Memberships and sponsorships in organizations specifically focused on energy efficiency, demand response and demand management to keep up-to-date and to continue to identify opportunities relating to C&DM.
- Exploring partnerships with the University of Guelph and City of Guelph relating to the development of public information systems, with easy access to all customers, to encourage comparisons with benchmarking information relating to water and energy usage.

Target Customers: Mass-marketing, including a special focus on residential, small commercial, small industrial, employees and students.

Benefits and Measures: This program is intended to increase awareness and shift customers to a conservation culture, which is anticipated to result in demand and energy reductions. Measures would include uptake of discount coupons, giveaways, fridge buy-backs, reports on the number of hits on our website, expanding our existing customer survey to include questions relating to shifts in behaviours, etc.

Budget- GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	70	50	30	150
Capital Expenditures	0	0	0	0
Totals	70	50	30	150

Budget – WEDCO:

\$K	2004/05	2006	2007	Totals
Operating Expense	2	2	1	5
Capital Expenditures	0	0	0	0
Totals	2	2	1	5

4.2 Low-Income Programs – Residential

Description: The objective is to provide special consideration for low-income homeowners and low-income tenants who directly pay for their electricity by focusing on their specific energy needs through audits, in partnership with existing local organizations who directly deal with low-income residents, and other organizations such as Natural Resources Canada.

Target Customers: Low-income residential customers, homeowners and tenants, who pay their electricity bills directly.

Benefits and Measures: This program is intended to increase awareness and shift low-income customers to a conservation culture, with significant demand and energy reductions. Measures would include the number of audits, lowered energy costs, improved building envelopes, and the uptake of basic energy saving measures such as motion sensors, programmable thermostats, electric water heater blankets and pipe wraps, compact florescent light bulbs, low flow shower heads, clothes line/pins, replacement of appliances, air-conditioners, etc. if owned by the tenant, etc.

Budget - GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	50	50	50	150
Capital Expenditures	0	0	0	0
Totals	50	50	50	150

Budget – WEDCO:

\$K	2004/05	2006	2007	Totals
Operating Expense	4	3	3	10
Capital Expenditures	0	0	0	0
Totals	4	3	3	10

4.3 City of Guelph and Guelph-Eramosa Township (Rockwood) Leadership Programs

Description: The objective of these programs is to showcase leadership in the area of C&DM via the City of Guelph and Guelph-Eramosa Township, while realizing reductions in demand and energy, for the benefit of the community. Examples of Programs being explored:

- Conversion of traffic lights to LED lighting to showcase the benefits of converting to LED lighting.
- Research and monitor developments in LED lighting for other applications such as streetlights and parking lot lighting.
- Research relating to the City of Guelph's Water Treatment Plant and energy production from biomass.
- Retrofitting a City Building as a pilot project to showcase the benefits of retrofitting.

Target Customers: Municipalities and indirectly all customers would benefit from these programs.

Benefits and Measures: This program is intended to increase awareness of the benefits of converting to energy efficient LED lighting, retrofitting and investing in research relating to energy and water. Benefits also include shifting customers to a conservation culture and demand and energy reductions. Measures would include numbers of lights converted, etc. and outcomes from research relating to the Water Treatment Plant.

Budget – GHESI:

SK	2004/05	2006	2007	Totals
Operating Expense	40	105	30	175
Capital Expenditures	0	0	0	0
Totals	40	105	30	175

Budget – WEDCO:

SK	2004/05	2006	2007	Totals
Operating Expense	1	0	1	2
Capital Expenditures	0	0	0	0
Totals	1	0	1	2

4.4 System Optimization and Distribution Loss Reduction Programs

Description: GHESI has already completed its voltage conversion resulting in lower losses. It will continue to look for opportunities to further reduce its distribution system losses, in for example, the following areas:

- **System Optimization** - Further investigate load shifting and system optimization within the grid to improve system efficiency. Investigate the replacement of inefficient conductors and evaluate where opportunities exist for upgrading.
- **Power Factor (PF) Correction** – Investigate adding capacitor banks to improve the PF on the distribution system to decrease line losses.

Target Customers: All customers will benefit from these programs.

Benefits and Measures: The benefits include direct benefits to consumers through reduced billing and the Ontario electricity system through reduced system losses and reduced requirements for new generation capacity.

Budget – GHESI

\$K	2004/05	2006	2007	Totals
Operating Expense	0	5	5	10
Capital Expenditures	0	45	45	90
Totals	0	50	50	100

Budget – WEDCO

\$K	2004/05	2006	2007	Totals
Operating Expense	0	4	4	8
Capital Expenditures	0	0	0	0
Totals	0	0	0	8

4.5 Power Factor (PF) Correction Programs

Description: The objective will be to identify opportunities to improve the power factor at various facilities, and correct the power factor by, for example, adding capacitors.

Target Customers: Industrial and Commercial customers that are demand billed.

Benefits and Measures: The benefits include direct benefits to consumers through reduced billing and the Ontario electricity system through reduced system losses, and reduced requirement for new generation capacity.

Budget - GHESI

\$K	2004/05	2006	2007	Totals
Operating Expense	0	25	25	50
Capital Expenditures	0	0	0	0
Totals	0	25	25	50

4.6 Metering Pilot Programs

Description: A pilot program will be implemented to assess metering, communications, settlement, load control and other technologies related to SMART meters. This initiative will commence upon the formal release of a formal definition of a SMART meter by the Board.

Target Customers: Residential and small commercial.

Benefits and Measures: This program will provide the LDC's with the experience and knowledge needed to support the Minister of Energy's commitment to the installation of 800,000 SMART meters across Ontario by 2007.

Budget – GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	0	15	10	25
Capital Expenditures	0	35	15	50
Totals	0	50	25	75

4.7 Load Control Programs

Description: Explore load control options to disable customer loads at the discretion of the LDC, during system peak periods or when required to relieve pressure on the system grid.

Target Customers: Various customer classes.

Benefits and Measures: The benefits include the ability to respond to external price signals, providing relief on the distribution system if required, and reducing the need to bring on large peaking generators.

Budget – GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	0	20	10	30
Capital Expenditures	0	80	40	120
Totals	0	100	50	150

4.8 Technology and Program Research and Demonstration Programs

Description: Evaluate technologies to be used as pilot projects in the design of the LDC's new building, for research, development and demonstration purposes. Monitor and track energy gains. For example, pursue:

- Vacuum tube solar collectors as a technology to supplement domestic hot water heating
- Geothermal heating for commercial building applications.
- Photovoltaic solar panel installations as a demonstration project for building applications.

Target Customers: LDC, and indirectly all customers would benefit from this research and development.

Benefits and Measures: This program is intended to increase awareness of the benefits of using alternative sources of energy for commercial applications. Benefits also include shifting customers to a conservation culture and demand and energy reductions. Measures would include actual energy gains, etc. and outcomes from research.

Budget – GHESI:

SK	2004/05	2006	2007	Totals
Operating Expense	15	0	0	15
Capital Expenditures	60	0	0	60
Totals	75	0	0	75

4.9 Energy SMART Technology and Local Builder Partnership Pilot Programs

Description: Explore the feasibility of pilot demonstrations or projects with local builders to showcase energy SMART technology in new residential development, while realizing reductions in demand and energy, for the benefit of the community. Examples include:

- Projects involving the use of instant hot water heaters instead of traditional electric or gas hot water heaters.
- Feasibility studies relating to using geothermal heat as a common resource in a residential development.

Target Customers: Residential customers.

Benefits and Measures: This program is intended to increase the awareness of investing in energy SMART technology, which is expected to be both more energy-efficient and more cost-effective in the long term. Benefits also include shifting customers to a conservation culture and demand and energy reductions. Measures would include outcomes from the research and studies, actual number of homes built with the SMART technology, etc.

Budget – GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	0	50	50	100
Capital Expenditures	0	0	0	0
Totals	0	50	50	100

4.10 Distributed Energy Programs

Description: This program will demonstrate the benefits of initiatives, which will displace load, and contribute to the development of sustainable energy networks within communities.

- 1) **Load Displacement:** This program will provide financial incentives to study project merits for initiatives such as:
 - Distributed generation behind the customer's meter using load displacement technology such as combined heat and power systems.
 - Development and implementation of technologies such as micro-turbines, wind, biomass fuels, solar, etc.
 - Small pilots or demonstration projects to promote alternative and renewable energy sources.
 - Exploring opportunities with local universities or colleges relating to alternative and renewable energy sources.
- 2) **Stand-by Generator:** This program will provide for an environmentally friendly generator at our new LDC location to reduce customer's and system peak demand.

Target Customers: Commercial, industrial, MUSH customers (Municipalities, Universities, Schools and Hospitals), and the LDC.

Benefits and Measures: Benefits include a shift in culture to cleaner and more sustainable sources of energy, as well as additional capacity within the grid, improved system reliability, reduction of system peak demand, etc. Measures will be based on the outcomes of the research for each project funded, etc.

Budget – GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	0	15	30	45
Capital Expenditures	0	85	0	85
Totals	0	100	30	130

4.11 Room Air Conditioner (AC) Switch and Save Programs – Residential

Description: The objective is to educate customers about energy consumption of window air conditioners, and the importance of timers and having the right size room air conditioner. Develop partnerships so that for example, customers could bring their old AC unit back during a designated period of time, and receive a discount on a new Energy-STAR Rated or otherwise qualified model air conditioner.

Target Customers: Residential

Benefits and Measures: The benefits are increased awareness of the energy consumption of air conditioners, the importance of using timers, and having the right size room air conditioner, as well as significant demand and energy reductions. Measures will include the number of customer enquiries and the uptake of coupons for a new AC.

Budget – GHESI:

\$K	2004/05	2006	2007	Totals
Operating Expense	10	0	0	10
Capital Expenditures	0	0	0	0
Totals	10	0	0	10

5.0 CONCLUSION

This joint plan developed for Guelph Hydro Electric Systems Inc. and Wellington Electric Distribution Company is intended to help the Province meet its energy conservation and demand management goals, while supporting the shared vision and mission of the Guelph Hydro family of companies.

We look forward to the Board's approval of this joint plan for both LDC's, and in the Board's Decision to grant approval of this joint plan, we request that the Board confirm that the approved plan will discharge both Guelph Hydro Electric Systems Inc.'s and Wellington Electric Distribution Company's obligations to invest an amount equivalent to their third tranche MARR, subject to *ex post* review of the Board only with respect to planned versus actual C&DM spending.

6.0 CONTACT INFORMATION

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7.0 PROGRAM BUDGET AND TIMELINE SUMMARY

The attached spreadsheet provides an overall summary of funding and timelines for all the programs for both LDC's.

Conservation & Demand Management

GHESI

Third trench

\$1,156,560

2004/2005

2006

2007

<u>Program</u>	<u>Capital</u>	<u>Operating</u>	<u>Total</u>	<u>Capital</u>	<u>Operating</u>	<u>Capital</u>	<u>Operating</u>
4.10 Education and Promotion		\$150	\$150		\$70		\$30
4.20 Low Income		\$150	\$150		\$50		\$50
4.30 City		\$100	\$100		\$30		\$30
- traffic lighting					\$40		\$30
- water treatment study		\$25	\$25		\$10		\$15
- building retrofit		\$50	\$50		\$0		\$0
4.40 System Optimization	\$90	\$10	\$100		\$0	\$45	\$5
4.50 Power Factor Correction	\$0	\$50	\$50		\$0		\$25
4.60 Metering Pilot	\$50	\$25	\$75		\$0		\$25
4.70 Load Control	\$120	\$30	\$150		\$0	\$35	\$15
4.80 Technology & Program Research	\$60	\$15	\$75		\$0	\$80	\$20
4.90 Energy SMART & Builder		\$100	\$100	\$60	\$15		\$0
4.10 Distributed Energy	\$85	\$45	\$130		\$0		\$50
4.11 Air Conditioned Replacement		\$10	\$10		\$0		\$30
Total	\$405	\$760	\$1,165	\$60	\$185	\$245	\$335
	percent	34.8%					
	percent	65.2%					

WEDCO

Third trench

\$23,723

<u>Program</u>	<u>Capital</u>	<u>Operating</u>	<u>Total</u>	<u>Capital</u>	<u>Operating</u>	<u>Capital</u>	<u>Operating</u>
4.10 Education and Promotion		\$5	\$5		\$2		\$1
4.20 Low Income		\$10	\$10		\$4		\$3
4.30 City		\$2	\$2		\$1		\$1
4.40 System Optimization		\$8	\$8		\$0		\$4
Total		\$25	\$25		\$7		\$9
	percent	0.0%					
	percent	100.0%					