PETERBOROUGH DISTRIBUTION INC.
1867 Ashburnham Drive, PO Box 4125, Station Main
Peterborough ON K9J 6Z5

EB-2004-0500

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Ontario Energy Board
PO Box 2319, 26th Floor
2300 Yonge Street
Toronto, Ontario
M4P 1E4

0500

RP-2004-0203/EB-2004-0409 Peterborough Distribution Inc., and 0410 Lakefield Distribution Inc., and 0411 Asphodel Norwood Distribution Inc.

The Board has an application to amalgamate the three LDC's listed above, to become effective January 1, 2005. This is an application for a final Board order to approve the Conservation and Demand Management Plan for the amalgamated LDC which will maintain the name of Peterborough Distribution Inc.

This application is based on the assumption that $1,286,809 will be available from the third portion of the MARR.

Proposed Programs

Installation of Thermal Storage Electric Heaters

In co-operation with the local social housing authority, the LDC will provide financial, technical and administrative assistance to convert approximately 600 electrically heated units from baseboard electric heating to electric thermal storage heating. This is expected to transfer approximately three kilowatts of electrical demand from peak to off peak per unit converted. The total peak demand reduction will be approximately 1,800 kilowatts. Assuming time of use rates will be available, the conversion will reduce the electric bill of the social housing authority or customer. The amount cannot be determined until the OEB release the pricing plan. Assuming that carbon fuel, coal, is burnt in peaking generating stations, there will be a reduction in green house gas production. Assuming a shift of 12,000 kwh per year per unit converted, there will be a reduction of approximately 4,000 kg of green house gasses per unit converted.

This initiative will apply only to residential social housing.

Assuming adequate funding will be available, the schedule will be the conversion of 100 units each year from 2005 to 2007.
The cost to convert will be approximately $233,667 per year for each of the three years.

Total budget $ $701,000.

Radio Signals to Control Appliances and Shift Usage to Off Peak Periods

The LDC will develop a radio signal system that may be used by customers to control appliances and shift discretionary use of electricity to off peak times. The signal will be offered at no cost. The customer will have the option of purchasing or renting a control unit for placement in their house. The signal(s) provided by the LDC will accommodate the automatic disabling of appliances connected to the in-home controller and the enabling of the appliance at a time which is off peak. For illustrative purposes, suppose time of use rates, yet to be developed, provide for a lower cost after 11.00 pm Monday through Friday and on weekends, the signal will be sent to each controller which will have the appliance disabled until some time after 11.00 pm. Appliances such as electric water heaters, dishwashers, cloths washers, electric dryers could have their electricity consumption shifted to off peak times. As the controllers and the radio signals may be digitally encoded, different control times could be offered for varying customer preferences. The controller would have a manual over ride button to permit the customer to use the appliance during some urgent situation.

This initiative would apply to all customers.

It is estimated that a shift of approximately one kilowatt per customer, from peak times to off peak times, will occur. The basic control infrastructure, once established, would not be expensive to maintain, and the radio signal would be provided free of charge to all customers for the foreseeable future. Assuming time of use rates will be available, the conversion will reduce the electric bill of the customers. The amount cannot be determined until the OEB release the pricing plan. Assuming that carbon fuel, coal, is burnt in peaking generating stations, there will be a reduction in green house gas production. The expected number of customers taking advantage of this service will be 1,500 per year for each of the three years 2005 to 2007. The expected total load shifted from peak to off peak will be 4,500 kilowatts.

Total budget $ 260,000.

Infra-Red Camera to Detect Heat Loss in Buildings and to Detect Line Losses

The LDC will purchase an infra-red camera. In co-operation with Peterborough Green Up, a survey of buildings will be performed at the customer's request. Green Up will conduct its survey with the intent of reducing consumption of electricity and other environmental considerations. The LDC will provide, during the heating season, the use of the infra-red camera to detect where heat loss from the building is greatest. During the air conditioning season the camera will be used to detect where heat gain into the building is greatest. The building owner would be provided with information about the "leaky" parts of the building which could be improved to reduce heat transfer. The camera will also be used to scan the electric distribution lines within the LDC to detect places where conductors and transformers are abnormally hot. This would be an indication of overloaded conditions or poor electrical connections, which create increased losses in the electric distribution system.

This service would be available to all electricity customers. It is anticipated that 500 surveys will be performed each year, for a number of years. The expected potential reduction in demand and energy per survey is estimated to be 100 watts and 1,000 kwh per year. Savings during the period 2005 to 2007 would be a reduction in electrical demand of 150 kw and a reduction of 1,500,000 kilowatt hours.

It is estimated that losses in the electric distribution system can be reduced by 100 kw of demand and an annual savings of 876,000 kwh. As losses are reflected in the distribution rates, all customers would benefit from this program.

Total budget $95,000.

Energy Star Appliance Promotion

Peterborough Distribution Inc. has approval for an Energy Star appliance promotion for the period up to December 31, 2004. The program provides for a $50 incentive for each Energy Star rated appliance purchased by customers that have needed to replace appliance as a result of the July 15, 2004 flood in Peterborough. Expenditures of $25,000 have been approved. This program will continue, with the exception that there will not be a requirement for the incentive to apply to flood damaged appliances. To date, the existing program is close to being on target for the numbers participating. This program will be available for the years 2005 to 2007 with the number of participants expected to be 1,000.

The promotion will be available to all LDC customers

The expected savings will be 200 kwh per year for each participant. Over the years 2005 to 2007, an expected saving of 300,000 kwh will occur. A demand reduction of 150 kw will occur.

Total budget $ 75,000. ($25,000 previously approved and an additional $50,000 of new promotions)

Appliance Load Monitors

The LDC will purchase a number of load monitors, which indicate to the customer the size of the electric load and how much energy it is consuming. The monitors will be loaned to customers who will use them to learn how much energy is being used by various appliances and devices within their home or business. After a reasonable period of time the monitors will be returned to the LDC and be available for other customers to use. This program will be focused on customer education, and is expected to provide customers with information with which they can make an informed decision regarding conservation and load shifting. The program will be available to all customers.

Expected participation is 1,000 customers per year with a reduced consumption of 400 kwh per year. The expected reduction in electricity consumption over the years 2005 to 2007 is 1,200,000 kwh.

Total budget $ 15,000.

Public Education Programs

At present, the LDC provides a safety program to all of the schools within its service territory. This program will be augmented to provide electricity conservation along with the safety messages. The LDC will participate in trade shows, home shows and other venues, and will provide information through the various media, regarding conservation and demand management information. This will be available to all customers. For the years 2005 to 2007, the expected reduction in electricity consumption is 105,000,000 kwh.

Total budget is $90,809.

Development of EnerGuide for Small Business

Provide funding to assist Peterborough Green-Up develop, test and provide a pilot demonstration for EnerGuide for Small Business. Peterborough Green-Up has provided a similar service with major funding from NRCan, (Federal Government Agency), for residential applications. The LDC will provide funding and some in-kind contributions. A description of the program is attached.

Total budget is $50,000.

Total Conservation and Demand Management Plan budget is $1,286,809.

Yours very truly,

Robert G. Lake P.Eng.
President
Telephone (705) 748-9301 ext 1280
e-mail rlake@puc.org

Sustainable Peterborough

EnerGuide for Small Business: Development, Testing and Demonstration Pilot Program

Executive Summary

The project proposed herein is *EnerGuide for Small Business* (EGSB). The outlined program is designed as a pilot project to determine the needs and application of an energy evaluation program for small businesses within Peterborough. The results of the project will provide the framework for the application of a national EnerGuide for Small Business program.

The work as conceived will be performed/procured by Peterborough Green-Up (PGU), a not-for-profit community organization, under the Sustainable Peterborough program. PGU is the delivery agent for Natural Resources Canada's EnerGuide for Houses program in Peterborough and area.

Improving the energy efficiency of buildings has been proven to offer attractive returns on investment, as well as infrastructure renewal, better living and working conditions, and environmental benefits. The challenge of achieving and sustaining energy efficiency in buildings involves many factors. Audits, design, financing, installation, training, and monitoring are interrelated and essential elements of success. Many building owners lack either the knowledge or resources to undertake comprehensive energy efficiency improvements to their properties. Federal energy efficiency programs are available for large commercial buildings and for homeowners. There is no comprehensive offering for smaller commercial buildings currently available.

The project has been designed for application in three phases. During phase one, "Development", workshops will provide information and community feedback on the concept of EnerGuide for small businesses. Focus groups will be identified to determine the market for such a program. Phase two, "Demonstration", will involve the training of assessors and marketing of the project, as well as facilitation through the installation process. Phase three, "Evaluation", provides for the evaluation, documentation, and reporting of the results to allow for replication in other communities.

Project Description

The project will broaden and integrate established energy efficiency initiatives to provide a comprehensive service to small building owners. Integral features of the pilot are:

- Establish focus groups to explore energy efficiency service options;
- Provide small business owners with the knowledge of their relative energy performance in order to precipitate action on energy efficiency;

- Develop a small commercial building rating system which supports the EnerGuide brand – based on the current EGH system;
- Determine and validate the necessary services required by small businesses in order to undertake energy efficiency improvements;
- Monitor and evaluate the results of improvements;
- Allow utility companies to show energy efficiency leadership by enhancing and targeting their DSM programs to the small business sector;
- Provide contractors and retailers with energy performance knowledge to market energy efficiency products and services to this sector;
- Develop an online information system that is readily accessible, secure, scalable and able to interconnect with utility databases;
- Understand technical, political, privacy and economic issues involved with utility and customer data;
- Learn what to apply to the development of extensive energy efficiency programs for small businesses incorporating local utility companies.

Locally, approximately 794 small buildings that could be impacted by this initiative with non-residential buildings representing utility consumption of close to 500,000,000 kWh, and more than 150,000,000 m3 of natural gas consumption annually.

Ultimately, all building owners in Peterborough will benefit by the services available through this program. Initially, 25 small businesses will be part of the pilot, which is intended to define, develop and demonstrate an integrated energy service for these markets.

The outcomes from this pilot will be readily transferable to other communities. Peterborough's existing capabilities in the building trades, and track record as a leader in energy and environmental initiatives will be utilized, and will be further enhanced by this groundbreaking work. The work will be undertaken over a two-year period.

The uncertainty of energy prices continues to be a serious financial threat to the on-going success of smaller building operators. Capital dollars are limited, day-to-day operations take priority, and adapting organizations for the future takes a lower priority. The building services and trades have been slow to adopt energy efficiency as a core opportunity, which leads to foregone opportunity, and resources wasted.

The energy services industry is well established across Canada, and many public- and private sector owners of large facilities have used their services over the past twenty years to undertake successful projects. This opportunity currently does not exist for smaller building owners, and the frustration with inefficient buildings and rising energy costs continues.

The EnerGuide for Small Business program will address specific local building owners concerns about the future impacts of energy costs on their bottom line, and will provide positive and lasting ways to deal with the challenge.

Small and medium-sized enterprises continue to be a major engine of growth, and a vital part of our provincial economy. Demand-side energy management projects underway in Ontario are aimed at encouraging energy consumers to monitor and conserve energy thereby reducing energy costs and greenhouse gas emissions.

Project Administration

For the *EnerGuide for Small Business* project, the staff of PGU will provide all of the required coordination and administration.

Peterborough Green-Up will provide a major portion of the technical resources through the *Energuide for Houses* audit team, and project coordination through the "Sustainable Peterborough" program. They will also provide final and interim reporting of project results.

Peterborough Green-Up boasts an exemplary record for developing projects that produce significant and verifiable results. Thousands of residents have participated in programs that cover energy efficiency; air quality education (climate change and transportation); water quality and conservation; waste management; greenspace enhancement; and environmental education.

Oversight for the program will come via the Board, and Executive of Peterborough Green-up, and by way of the Steering Committee for the Sustainable Peterborough program. Regular reporting on project progress and financial status will be provided by the Manager, Sustainable Peterborough program, to the Steering Committee, and to the Manager, Peterborough Green-Up. Other partners as required will be similarly engaged.

Project Partners

Partner	Description of Role
Sustainable Peterborough	To provide coordination and administration of the project through the program manager.
Office of Energy Efficiency (NRCan)	To provide funding and technical assistance for the project.
Ontario Ministry of Energy	To provide funding and technical assistance for the project.
Peterborough Utilities Services	To provide funding and technical support for the project as part of their demand-side management program. To provide the electrical equipment and appliance monitoring part of the project in kind.
City of Peterborough	To provide essential statistical information regarding the target group for the project.
Peterborough Green-Up	Proponent, project manager and energy auditors.
Peterborough	Liaison and promotion with small business building owners and

Downtown Business Improvement Area	service contractors
Peterborough Chamber of Commerce	Liaison and promotion with small business building owners and service contractors

Financial Contributions

Partner	Cash contribution	In-kind contribution	Total
Office of Energy Efficiency	$176,000		$176,000
MOE	$25,000		$25,000
Peterborough Utility Service	$50,000	$15,000	$65,000
City of Peterborough		$18,000	$18,000

In total, the Energy Services for Small Businesses program will positively affect the marketplace and the participants in a number of ways. It specifically targets small businesses, which already experience close margins, and helps them get the energy efficient measures they need to reduce their utilities bills, which gives them more financial flexibility. The improvements also often increase the value of their properties. The program stimulates and enriches the local Peterborough contracting businesses, as well as retailers. Contracting businesses become experts in implementing energy efficiency measures, while earning greater revenues. Retailers that cater to home improvements and supplying contractors learn more about energy efficiency and get more business. The City of Peterborough benefits from a stimulated economy and a higher quality, healthier building stock, as well as an increased profile as a sustainable community.

The results of the project will be comprehensively monitored. Tracking and reporting on the success of the project will be measured by levels of participation, energy efficiency measures and investment levels proposed and adopted, energy and cost savings achieved, and employment created. The monitoring and evaluation of the project is an essential part of expansion to the rest of Peterborough, and replication in other communities.

Work Timeline

The program is to take place over the better part of two years, with a planned starting date of November 2004. A framework for the EnerGuide for Small Business pilot project is presented in Figure 1.

Phase One – Development (6 months)

The Development phase will commence with a series of workshops targeting different small business sectors within the community. These workshops will provide a forum for

general education and sharing information related to energy efficiency. Workshop participants will be identified through the partnership with the Peterborough DBIA and Chamber of Commerce. These events will be administered as education and information sharing forums to increase awareness of energy efficiency measures, opportunities, benefits, and affect on businesses bottom-line. The workshop will address business as well as community benefits, and opportunities for cost savings and competitive advantages within the marketplace

From the workshops a series of focus groups will be identified to determine the optimum service offering of audits, facilitation, coordination, financing and evaluation, as well as an understanding of the level of market acceptance for the program. The results of the focus groups will shape the development of the EGSB energy efficiency measures, the implementation methods, the means of financing and incentives available to the owners, and the audit and evaluation processes. At this time, utility data from the participating buildings will be collected and contractors and retailers will be recruited.

The main components of this phase are as follows:

1.0 **Service development**: developing the technical measures, audits, and processes to be used in the program;
2.0 **Market acceptance**: establishing focus groups to determine demographic layout, as well as level of market understanding and acceptance; and
3.0 **Documentation**: creating the documentation necessary for the demonstration phase of the project.

By the end of this phase, the following deliverables will have been completed:
- guides outlining EnerGuide for Small Businesses measures and implementation
- documented audit and evaluation processes
- financing methods and possible incentives for participants
- collected utility data for all participants
- established partnerships with retailers and contractors

Phase Two – Demonstration (9 months)

The second phase of the program focuses on implementation and will include training, database development, initial and final audits of the buildings, installations, and support for customers, retailers and contractors. Audits for 20 small businesses will be conducted.

The main components of this phase are as follows:

4.0 **Marketing and training**: developing and delivering the training of auditors and customer service representatives, developing the database that will hold utility data and building information, and marketing of the project.

5.0 **Audits, support and installation**: conducting the initial and final energy audits; evaluations, ratings and recommendations provided to participants; project management and facilitation to ensure installation is completed.

Completion of this phase of the project will result in trained auditors and customer service representatives who can effectively sell and conduct audits to participants, along with an effective marketing campaign to ensure community awareness. A database for utility and building information will provide meaningful reports to show progress to participants and other stakeholders. Initial audits will be conducted to provide an assessment of what energy efficient measures need to be installed, and every effort will be made to facilitate the installation of required measures. A final audit will ensure energy savings were achieved and evaluate the effectiveness of the program. This process will be similar to the EnerGuide for Houses program whereby the initial audit results and final audit results are compared to demonstrate improved energy efficiency relative to the implemented retrofits.

Phase Three - Evaluation, Documentation and Report (9 months).

The final phase of the program consists of the evaluation of the program, documentation of the results and a report summarizing the findings and how they and the program can be replicated in other communities.

Management and Administrative Capacity

Founded in 1991, Peterborough Green-Up (PGU) is a not-for-profit, community-based environmental organization that provides services, tools and education to assist Greater Peterborough Area residents in the engagement and maintenance of sustainable lifestyle activities.

With an excellent community reputation for being knowledgeable, professional and accessible, Peterborough Green-Up maintains an exemplary record for developing high quality programs that produce significant results.

The two key staff responsible for the *EnerGuide for Small Business* project are Gerri-Lynn Parsons, Manager of Energy Efficiency Services and Susan McGregor-Hunter, Executive Director of Peterborough Green Up.

Financial Summary

A. Total Funding Requested from NRCan: $176,000
B. Total Funding Requested from MOE: $25,000
C. Total Funding/Contributions from other sources: $83,000
D. Total Value of Project (A+B+C=D): $ 284,000

Budget

a. Sources of Funds

Lead Organization/Partners	Cash	In-kind	Total Contributions
Office of Energy Efficiency	$176,000		$176,000
MOE	$25,000		$25,000
Total lead & partners	**$201,000**		**$201,000**
Other sources, excluding Ontario Government			
Peterborough Utility Service	$50,000	$15,000	$65,000
City of Peterborough		$18,000	$18,000
Total other sources	**$50,000**	**$33,000**	**$83,000**
Total Sources	**$251,000**	**$33,000**	**$284,000**

b) Uses of Funds

Phase/Objective	Eligible Cash	In-kind	Total Expenditures
Phase One – Development	$36,000	$18,000	$54,000
Phase Two - Demonstration	$106,000	$15,000	$121,000
Phase Three – Evaluation, Documentation and Report	$109,000		$109,000
Total uses	**$251,000**	**$33,000**	**$284,000**

Figure 1: Framework for EnerGuide for Small Business