CANADIAN NIAGARA POWER INC.

A FORTIS ONTARIO Company

2005 OEB Annual
Conservation and Demand Management Report
for
Canadian Niagara Power Inc.
Port Colborne

RP-2004-0203/EB-2004-0523

Introduction

Canadian Niagara Power Inc. – Port Colborne distributes electricity to approximately 9,400 customers in Port Colborne.

The desire to promote a sustainable conservation culture with customers facilitated CNPI's participation in a regional approach to program development to derive economies of scales and to also create consistent regional information to the customers across 11 LDC's, known as NEPPA (Niagara Erie Public Power Alliance).

The NEPPA group has long be known in the Industry as a leader in facilitating regional understanding of regulatory changes, public safety messaging, co-ordination of training and now conservation and demand management.

The Conservation and Demand Management (CDM) plan was prepared as a NEPPA initiative. Together the NEPPA group represented 525,000 customers and a total of $5.5 million dollars of CDM funding. CNPI Port Colborne's portion of this funding is $159,214. The primary goal is to leverage common solutions and deliverables to maximize results when ever feasible.

During 2005, the primary concentration was to plan and create a foundation. High on the list was securing a customer communication branding to begin changing and building awareness for the long term. In 2006, customers will enjoy further localized programming as well as support for programming designed and delivered by the OPA.

This report covers the period from January 1, 2005 to December 31, 2005.

Evaluation of the C&DM Programs

The following table shows the approved plan expenditures by project as well as actual expenditures to December 31, 2005.

Project	Target User	Shared Initiative with NEPPA	Approved Expenditures	Actual Expenditure to Dec. 31, 2005
Co-branded Mass Market Program	Residential & Small Commercial (<50kW)	January 2005 to September30, 2007	$ 32,500	$9,302
Energy Audits Programs	Residential & Small Commercial (< 50 KW)	January 2005 to September30, 2007	$ 14,214	Not Started
Social Housing Programs	Residential - Non-Profit & Social Housing	January 2005 to September30, 2007	$ 7,500	Not Started
Smart Metering/Interval Metering Programs	Large User, Industrial/General Service & Institution Facilities	January 2005 to September30, 2007	$ 42,500	$16,340
Energy Audits/Feasibility Audits	Large User, Industrial/General Service & Institution Facilities	January 2005 to September30, 2007	$10,000	Not Started
Distribution Loss Reduction	LDC programs aimed to benefit all Customer Classes	January 2005 to September30, 2007	$ 50,000	$16,000
Distributed Generation	All Customer Classes	January 2005 to September30, 2007	$ 2,500	Not Started
Total			$159,214.00	$41,642.00

Discussion of Programs

Below is a brief summary of CNPI Port Colborne C&DM initiatives completed and/or started in 2005.

Co-branded Mass Market Program

In partnership with the NEPPA group, CNPI developed a diversified customer education package referred to as the media kit. The media kit is built around Conserver Joe and his family. The development of the kit was designed around the concept of a family approach. Each family member brings their own special touch to encouraging and sharing conservation.

By changing consumers habits to sustain ongoing support and belief in conservation would take the resources of the working folks, as well as the push and enthusiasm of our youth. The media kit was developed with the knowledge that the product could be further expanded including; for example, interactive youth website, school educational programs, updates on new technology and specific programming messaging.

To assist in local use of the Conserver Family, Product Use guidelines have been developed to keep our Conserver Family used in a consistent manner.

Conserver Joe and his family will be making appearances in various media as follows.

Conservation Handbook – advises residential customers how to seasonally tune up their home to optimize energy use.

Newsletter – a tabloid designed to share the success stories across LDC's utilizing the Conserver Joe.

Bill Inserts – Initially 10 bill inserts have been developed each sharing a single conservation message. All four family members share tips on saving energy.

Website – www.conserverjoe.com – the website was developed to create a consistent message and branding. All NEPPA participants are able to use the website links.

Print Ads – a selection of print ads have been developed for easy and quick circulation.

In conjunction with other NEPPA members and LDC's across the province, CNPI Port Colborne supported and promoted the use of cold water to wash clothes in partnership with Proctor and Gamble. Last minute program preparation did not provide to specific LDC identification for processing purposes.

Energy Audit Programs - Residential

The intent of this project is to incent home energy audits in the residential market through a cooperative arrangement with recognized service providers in the field of home energy efficiency. This program has not yet begun.

Social Housing Programs

The intent of this program is to seek a relationship with a local social housing management organization to allow direct delivery of conservation and demand management initiatives. In late 2005, CNPI Port Colborne met with the operators of a local low income housing complex. A plan was developed to encourage management to procure energy efficient appliances for those units requiring replacement. CNPI will contribute monies to compensate for the cost differential plus a moderate incentive to encourage the use of energy efficient appliances. In addition, CNPI Port Colborne will work directly with operating staff to identify opportunities to replace existing incandescent lighting with more energy efficient compact florescent lighting and to replace existing thermostats with efficient programmable models.

Unfortunately, timing did not allow any deliverables in 2005; the project is expected to be fully functioning in 2006.

Smart Metering/Interval Metering Programs

The intent of this project is to deliver interval metering to customers below the existing demand threshold. CNPI Port Colborne will extent its existing free web based meter data access program to these customers. In 2005, CNPI invested $16,340 install interval metering for General Service greater than 50 kW class customers in Port Colborne.

At present, CNPI Port Colborne is not aware of a quantifiable metric to relate interval metering to conservation and demand management. However, past experience has indicated that when customers become aware of the relationship between electrical demands and consumption and their operational costs more attention is given to the information available to the customer from interval metering.

Energy Audits/Feasibility Audits – General Service

The intent of this project is to incent energy audits in the general service market through a cooperative arrangement with recognized service providers in the field of commercial energy efficiency. This program has not yet begun.

Distribution Loss Reduction

The intent of this program is to reduce electrical losses in the distribution system. A reduction in distribution losses will benefit all customers and its effects are enduring. Canadian Niagara Power Inc. Port Colborne identified certain contained projects where there was an opportunity to convert the system voltage from 4.16 kV to 27.6 kV. The project completed in 2005 was a conversion of a section of Fraser Street from 4.16 kV to 27.6 kV. Prior to this project, the sixteen customers on Fraser Street were fed from Port Colborne TS at 27.6 kV which was stepped down to 4.16 kV; the customers are now supplied directly from the 27.6 kV system with the overall circuit distance reduced from

1435 meters to 826 meters. The project cost $16,000 and yielded 2,011 kWh annually in loss reductions.

Distributed Generation

The intent of this program is to bring together customers interested in distributed generation technologies with proponents of the industry. CNPI Port Colborne will plan and sponsor an event to facilitate the knowledge transfer.

Training

CNPI Port Colborne embarked on very limited training. Training efforts related to an understanding the application of the Total Resource Cost (TRC) calculations. Training included attendance at a generic seminar with Seeline and the purchase of a TRC Calculator tool from Enerspectrum.

Administration

General administrative costs to cover our cost to participate in the Ontario Caucus Webinars, meeting expenses and media costs for CDM plan notification. Administrative funds are not directly attributed to any one program, but rather a general expense to cover our cost to participate.

Lessons Learned

CNPI Port Colborne has a limited C&DM budget, $159,214, which has been allocated to all customer classes in proportion to class revenue. This limited budget has meant that CNPI Port Colborne has to be both creative and prudent in its choices to deliver C&DM programs to the customers in Port Colborne. An example of this arose in the NEPPA initiative to participate in the coupon program; CNPI Port Colborne felt that the administrative costs were unmanageable given the customer base and budget available. Participation would have over extended the funds available and therefore CNPI has to look for a more direct approach to extend initiatives to its customers.

Likewise, CNPI Port Colborne undertook a small scale voltage conversion program to reduce losses in the distribution system. From the TRC results, despite the energy savings identified, it is obvious that the cost to benefit ratio associated with very small scale projects will not produce the desired result from a TRC perspective. CNPI Port Colborne will have to re-evaluate its distribution loss reduction program.

Conclusion

CNPI Port Colborne is moving ahead with its Conservation and Demand Management Program in a manner that will deliver the most benefit for customers given the limited funds available from third tranche funding. CNPI Port Colborne will continue to endeavour to extend programs directly to customers to avoid costly third party administration costs.

CNPI Port Colborne would support a more centralized approach to delivering mass market programs. CNPI Port Colborne believes there are efficiencies available from the province delivering a consistent and equal offering of programs as well as overall reduced administration costs.

Appendix A
Evaluation of the CDM Plan

Appendix A - Evaluation of the CDM Plan

CNPI Port Colborne	Programming is Quantitative Results						Programming with Qualitative Results				
	Total	Residential	< 50 GS	>50 GS	Other	Total Non TRC PROGRAMS	Other	Other	Other	Other	Other 4
Net TRC value ($):	*-$13,902*	-$13,902									
Benefit to cost ratio:	*$0.13*	$0.13									
Number of participants or units delivered:	*16*	16									
Total KWh to be saved over the lifecycle of the plan (kWh):	*50275*	50275									
Total in year kWh saved (kWh):	*2,011.00*	2,011.00									
Total peak demand saved (kW):	*23.00*	23.00									
Total kWh saved as a percentage of total kWh delivered (%):	*23.00*	0.0011%									
Peak kW saved as a percentage of LDC peak kW load (%):	*0.00*	0.0564%									
Gross in year C&DM expenditures ($):	*$16,000.00*	$16,000.00									
Expenditures per KWh saved ($/kWh):*	*$0.3182*	$0.3182									
*Expenditures per KW saved ($/kW)**:*	*$696*	$696									

Utility discount rate (%):	7.09

Canadian Niagara Power Inc. Port Colborne	
2005 Annual Energy Consumption	189633718 kWh
2005 Annual Peak Demand	40,792 kW

*Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
**Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.

Appendix B
Discussion of the Program

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:**

Distribution Loss Reduction

Description of the program (including intent, design, delivery, partnerships and evaluation):
Include as much detail about the program.

Sixteen customers on Fraser Street in Port Colborne were transferred from the 4.16 kV distribution system to the 27.6 kV distribution system. The project also reduced to overall circuit length from the customers to the station by 609 meters. The project costs were $16,000 in 2005.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)	Measure4 (if applicable)
Base case technology:	Lower voltage distribution			
Efficient technology:	Higher voltage distribution			
Number of participants or units delivered:	1			
Measure life (years):	25			

B. **TRC Results:**

	$	*2,098.41*
TRC Costs ($):		
Utility program cost (less incentives):	*$*	*16,000.00*
Participant cost:		
Total TRC costs:	$	16,000.00
Net TRC (in year CDN $):	-$	13,901.59
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	0.13

C. **Results:** (one or more category may apply)

Conservation Programs:

Demand savings (kW):	*Summer*		55
	Winter		23
		lifecycle	*in year*
Energy saved (kWh):		50275	2,011.00
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

Controlled load (kW)	
Energy shifted On-peak to Mid-peak (kWh):	
Energy shifted On-peak to Off-peak (kWh):	
Energy shifted Mid-peak to Off-peak (kWh):	

Demand Response Programs:

Dispatchable load (kW):	
Peak hours dispatched in year (hours):	

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at begining of year (%):	
Distribution system power factor at end of year (%):	

Line Loss Reduction Programs:

Peak load savings (kW):		11
	lifecycle	*in year*
Energy savngs (kWh):	50,275	2011

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):	
Energy generated (kWh):	
Peak energy generated (kWh):	
Fuel type:	

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 16,000.00
	Incremental O&M:	
	Incentive:	
	Total:	$ 16,000.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

It appears from the results that small scale voltage conversion will reduce the losses and thus the kWh but does not produce a positive TRC.

*Please refer to the TRC Guide for the treatment of equipment cost in the TRC Test.