2005 OEB Annual

Conservation and Demand Management Report

Submitted By:

Welland Hydro-Electric System Corp.

RP-2004-0203/EB-2004-0523

March 31, 2006

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2005 Annual Conservation and Demand Management Report
RP-2004-0203 / EB 2004-0523

On December 9, 2004 Niagara Erie Public Power Alliance (NEPPA)[1] members filed their plans to implement conservation and demand management programs. During plan preparations, concerted effort amongst the group to organize and share initiatives when ever possible to share costs and improve the overall consistency of programming.

Some key joint initiatives have included

1. Conserver Joe – Family Education Package
    a. Handbook
    b. Bill Inserts
    c. Newsletters
    d. Print Ads
    e. Website
2. RFP process to select qualified commercial/agricultural and industrial auditors
3. Participation is provincial coupon campaigns.
    a. Lighten Your Electricity Bill
    b. Cold Water Wash
4. Training and Development
5. LED Traffic Lights

How Did We Do?

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[1] NEPPA comprising Canadian Niagara Power Inc. Grimsby Power Inc., Haldimand County Hydro Inc. Niagara Falls Hydro Inc., Niagara On The Lake Hydro Inc., Norfolk Power Distribution Inc., Peninsula West Utilities, St. Catharines Hydro Utility Services Inc., and Welland Hydro-Electric System Corp., Brant County Power, Brantford Power.

Collectively our NEPPA members contributed to annual energy savings of **5,383,735.54** kWh and demand savings of **2292.73** kW [2].

Energy reductions occurred from a variety of programming both through joint initiatives and localized community programming.

Opportunities

As we develop a conservation culture in Ontario we must continue to balance the need for short-term results while fostering a long-term conservation attitude among the citizens and businesses in the province. The industry must continue to coordinate its efforts to ensure that program delivery is efficient and available to all customers. Our goal should be rapid program deployment and using the LDC's clear channel to market. Clarity regarding the roles of the LDC's, OPA, IESO, etc. would be beneficial in this regard.

Further, clarity on the topics of LDC cost recovery, lost revenues, and criteria for assessing prudence of CDM spending would also be helpful. This will lead to more aggressive applications for second generation funding. At all times, we must strive to minimize bureaucracy wherever possible. For example, the opportunity to determine and agree on effective conservation programs up front should minimize the measurement and verification efforts required to substantiate these same programs at their conclusion.

Our commitment remains firm of remaining an active participant and advocacy of developing and promoting a conservation culture in Ontario. Attached is a copy of Welland Hydro-Electric System Corp's specific results for 2005.

Regards,

NEPPA Member
Perry Orosz
Director of Customer Service
Welland Hydro-Electric System Corp.

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[2] Energy Saved does not include data from St. Catharine's Hydro as they submitted a joint data statement with the CLD group to share collective results. At time of this report we were still waiting for Penwest, Fortis and Brantford to report their Kwh & Kw numbers therefore the numbers shown are incomplete from a complete NEPPA Collective Reporting.

1.0 Introduction

Welland Hydro-Electric System Corp. distributes electricity to 22364 customers in the City of Welland. Our customer base is made up of a unique combination of residential, less than 50 kW General service customers, greater than 50 kW General Service customers and Large Use customers, over an urban area of 86 square kilometers.

Our desire to promote a sustainable conservation culture with our customers facilitated our participation in a regional approach to program development to derive economies of scales but 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.

Our Conservation and Demand Management (CDM) plan was prepared as a NEPPA initiative. Together we represented 525,000 customers and a total of $5.5 million dollars of CDM funding. Our primary goal is to leverage common solutions and deliverables to maximize results.

During 2005, our primary concentration was to plan and create our foundation. High on the list was securing a customer communication branding to begin changing and building awareness for the long term.

The Welland Hydro-Electric System Corp. participated in different educational programs such as the OUSM Smart Metering group that involves more than 40 utilities across Ontario, the multi media Conserver Joe Program that impacted all our residential and small commercial customers and the Large User Breakfast Seminars that provided energy Conservation strategies for our large commercial and large user customers. We also participated in the Lighten Your Electricity Coupon Campaign that produced a TRC value as per the attached OEB appendix A and B. Welland Hydro-Electric System Corp. also began their voltage conversion campaign in 2005, which will continue through 2006.

Our total CDM budget for third tranche spending is as follows.

Project	Target Customers	Shared Initiative with NEPPA	Approved Expenditures	Actual Expenditure to Dec. 31, 2005
Co-branded Mass Market Program	Residential and <50 kW customers	Development of Conserver Family & Lighten El. Bill	$55000.00	$27517.00
Energy Audit	Residential &GS	Under Review	$16.000	$0
Smart Metering Low Volume	Residential	NEPPA and OUSM	$15,000	$7180.56
Energy Audit/Breakfast seminars >50kW	>50kW	Under Review	$10000.00	$4522.00
Smart Metering >50kW	>50kW	Local to HCH	$56,000	$5568.00
Distribution Assets – Loss reduction	All	Local to HCH	$492106.00	$153919.33
LED Traffic lights	All	Local to HCH	$40,000.00	$0.00
Load Displacements			**$10000.00**	**$0.00**
Totals			$694106.00	$198,706.89

2.0 Evaluation of the CDM Plan

Appendix A has been completed as an Evaluation of the CDM Plan for the Welland Hydro-Electric System Corp and is attached. The only programs with TRC values are the Lighten Your Electricity Bill Coupon Campaign and the first portion of the Voltage Conversion program. These two programs make up the total column on appendix A. The other 4 programs were educational programs, with no TRC value. The OUSM Smart Meter residential program is an educational campaign to evaluate smart meter technology amongst 40 utilities. The Conserver Joe Multi-Media Kit was distributed too over 20000 residential and small commercial customers introducing the Conserver Joe family and website. The Large User Breakfast provided opportunities to meet and discuss energy conservation strategies for our large commercial and large use customers. The Interval Meters Program costs are for meters purchased in 2005, but were not installed until February of 2006.

3.0 Discussion of the Programs

Below is a brief summary of our specific CDM activities completed and/or started in 2005. Appendix B has been completed for each initiative listed below and is attached.

Completed Projects

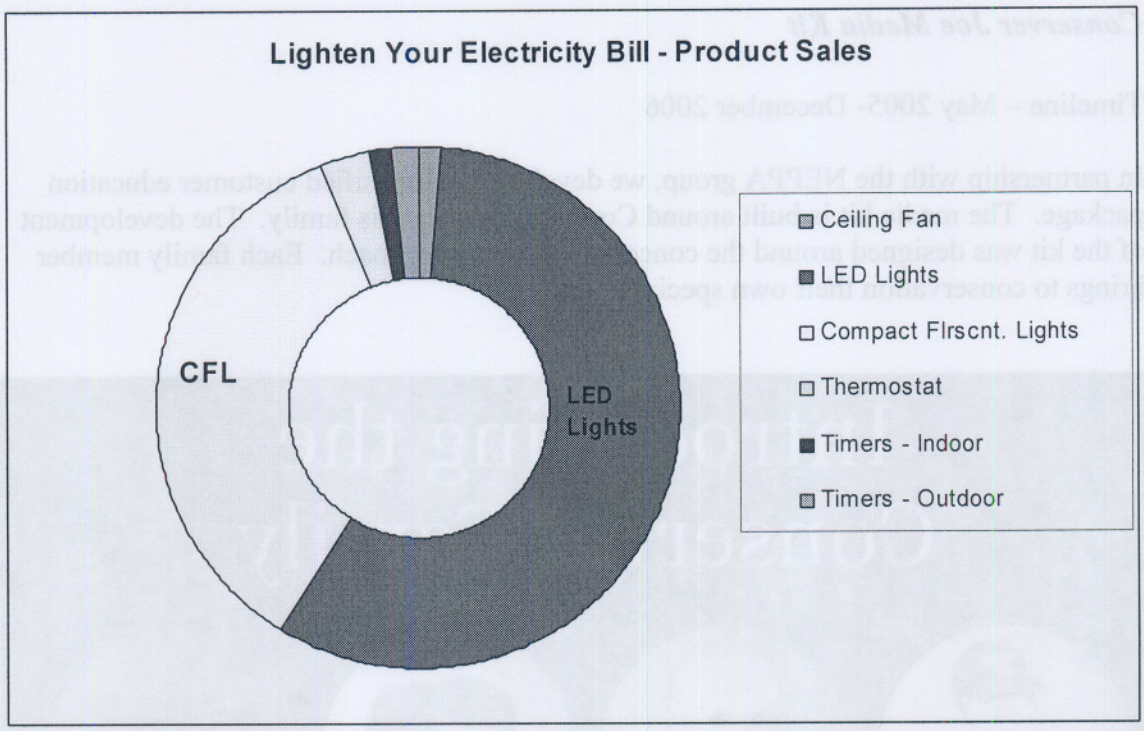
Lighten Your Electricity Bill

Timeline – October 31, to December 31, 2006

In conjunction with other NEPPA members and LDC across the province, we participated in a coupon campaign that offered customers discounted energy efficient products from October 1 to December 31, 2005 at Canadian Tire.

All our residential customers received coupon via a special unaddressed mailing. In total 19327 packages were mailed to both our metered residential customers and customer bulk metered. We had a successful response. Seven percent of our customers took advantage of the coupons, 1281 products purchased

The following chart depicts the product preferences of customers. Popular amongst the customers were LED Christmas Lights and Compact Fluorescents.



Ongoing Projects – Initiated in 2005

Voltage Conversion of Welland 4 kV to 27.6 kV

Timeline –January 2005 – September 2007

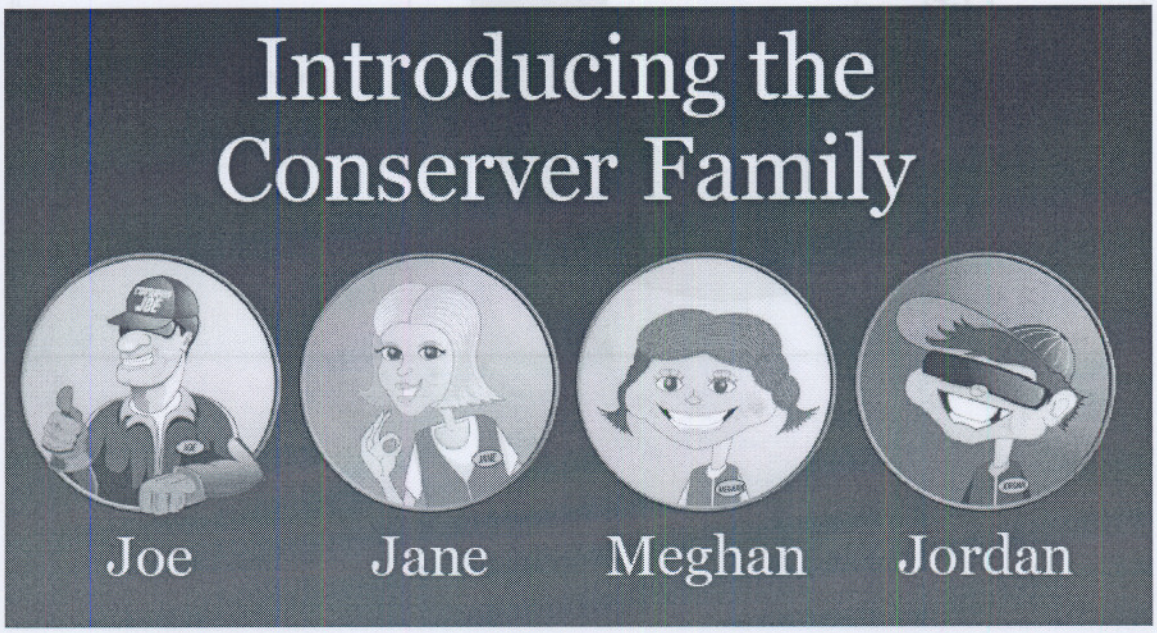
We are looking for opportunities to permanently improve our overall loss factor which will benefit all our customers. Welland Hydro-Electric System Corp. still has several areas that have not been converted to a more optimum voltage. In the City of Welland, opportunities exist to change sections from 4 kV to 27.6.

During our normal capital programs, we strive to select projects when possible that will improve our overall system. Although this project has shown a negative TRC, the actual life of the program will go well beyond the depreciation life of 25 years and reduce losses of the electrical system.

Conserver Joe Media Kit

Timeline – May 2005- December 2006

In partnership with the NEPPA group, we developed a diversified customer education package. 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 to conservation their own special touch.



We know that changing our consumer's 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. For example, interactive youth site, school educational program, updates on new technology and specific programming messaging.

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

Conserver Joe and his family will be making appearances in many media's.

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

Bill Inserts – Initially 10 bill inserts have been developed sharing single conservation messages. Each of the four family members shares a tip on saving energy.

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

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

Welland Hydro-Electric System Corp., in conjunction with NEPPA members, embarked on a mass mailing of the Conserver Handbook in a specially marked unaddressed envelope to all residential households in the City of Welland, including any bulk metered customers.

Large User and Commercial Customer Breakfast Seminars

Timeline – November 2005 – December 31, 2006

Welland Hydro invited all the greater than 50 kW customers and 3 Large Use customers to a breakfast seminar on November 16, 2005. We had two speakers provide our customers information regarding the State of the Electricity Market and methods to reduce energy consumption. Also we provided our customers the opportunity to view energy saving software to help customers manage their energy consumption. The feedback from the seminar was positive as customers have begun using the energy tracking software to manage energy consumption and make changes to their operations. We plan the next seminar on March 21, 2006 in conjunction with the City of Welland and Enbridge Gas.

Smart Metering – Low Volume Customers

Timeline – May 2005 – December 31, 2006

Welland Hydro-Electric System Corp. has elected not to directly facilitate a low volume smart metering pilot. However, we have embraced our responsibility to understand and participate in the development of the smart metering implementation. We hold an active role on the OUSM working group in all facets and contribute to a more localized working group with the 11 NEPPA members to explore regional solutions.

All funding attributed to Smart Metering for low volume customers is to support on evolvement on both these committees.

Smart Metering – Large Volume Customers

Timeline – September 2005 – December 31, 2006

In response to the smart meter initiative, all our large customers (>50Kw) who use greater than 200kW, will have an interval meter installed. In total 39 customers will/will be receiving an interval meter. Changes to our Conditions of Service will ensure that all new construction with loading greater than 200 kW will automatically be required to install an interval meter.

Other Energy Conservation Activities at Welland Hydro-Electric System Corp.

Welland Hydro has initiated an Energy Conservation DVD aimed at Grade 5 elementary students. We partnered with Niagara College in Welland on the DVD and are currently working on the second draft (which has been slowed by the college strike). The DVD is designed to accompany the Grade 5 Energy Conservation Curriculum, which two elementary schools have agreed to test upon completion. Welland Hydro is also active in other energy Conservation Groups in Welland such as the City of Welland Energy Conservation Committee and the Region of Niagara Water Festival. Overall, Welland hydro-Electric System Corp. is looking to work with NEPPA members in 2006, the OPA and other community partners to provide more CDM initiatives in 2006. We have been able to start our LED Traffic Light program early in 2006 and look forward to expanding the LDC System projects in 2006.

4.0 Lessons Learned

Creating a balance plan requires a concerted effort to include a mix of localized programming to engage a community commitment and global initiatives to connect Welland Hydro to broader goals and solutions.

Our plan was developed with the express desire to improve our overall customer base efficiency and target specific customer segments. Our limited budget of $694106.00 would require some creative approaches.

The improvement of our overall loss factor during the conversion of a section of 4 kV line in the City of Welland to 27.6 kV, benefits our entire customers base. Converting our thirty nine largest customers to interval meters will provide a very important component of initiating other demand response programs. Showing customers when they use the power with the relevant price signal creates the proper support for ongoing efforts on their part that could lead to onsite capital improvements to reduce their consumption and demand.

Our participation in the Lighten Your Electricity Bill campaign was a surprising success. During our initial budgeting process we expected to see customer participation in between a low of 3% and a high of 10%. We hit the 7% in sales and could have been higher with more local advertising.

Perhaps our most valued component of CDM efforts is our joint efforts with the NEPPA members. It is clear that a consistent message and branding, which spans a regional section of customers, and best meets the long term goals of a sustained conservation culture. In 2006 we are exploring the expansion of our working partners to include other working groups to create streamline messaging to customers, learn from each other and, whenever possible, co-ordinate programming to maximize customer results, share in costs and prevent confusion in the market.

Our greatest accomplishment has been finding ways to stretch our programs to address all our customers' needs. We have explored zero incremental cost initiatives to engage our community such as City Festivals, The Niagara Safety Village Visits, school visits and on site visits with our large customers.

In 2006 we will continue to strive towards continued customer education to continue to:
-build on our past efforts and support of specific customer projects in LED Traffic Lights

-work with elementary schools on Energy Conservation Poster Challenges,

-work with Niagara College to develop an Educational Energy Savings DVD,

-continue our voltage conversion efforts

- participate in municipal energy savings organizations such as the City of Welland Energy Conservation Committee.

5.0 Conclusion

In 2005, we embarked on key initiatives to introduce our customers to our collective goals to commit to changing our energy patterns and usages. Our overall conclusion is that our customers are ready and very willing to participate in using new products and their overall commodity differently. We were encouraged by the 7% participation in the Lighten Your Load Coupon Campaign, the positive feedback from the Energy Conservation Breakfast, and the successful response to the Conserver Joe booklets and website. We are looking forward in 2006 to our LED Traffic Light Conversion, more success with the voltage reduction program, and continuing with our smart meter initiatives, while educating our community about the importance of electricity conservation. Our overall conservation and demand program will continue on its current path as we explore and expand on our partnerships within our community and beyond, such as the Ontario Power Authority.

Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Smart M<50	Sm Met>50	Co-B Med Res	Breakfast-Lge Use
Net TRC value ($):	*$29,600*	$95,800					-$66,200	$0	$0	$0	$0
Benefit to cost ratio:	*$7*	$7					$1	$0	$0	$0	o
Number of participants or units delivered:	*$40,788*	$18,434					$22,354	40 utilities	$4	$20,554	$39
Total KWh to be saved over the lifecycle of the plan (kWh):	*$4,799,169*	$2,151,544					$2,647,625	$0	$0	$0	$0
Total in year kWh saved (kWh):	*$315,885*	$209,980					$105,905	$0	$0	$0	$0
Total peak demand saved (kW):	*$108*	$93					$15	$0	$0	$0	$0
Total kWh saved as a percentage of total kWh delivered (%):	*0.06%*	0.04%					0.02%	$0	$0	$0	$0
Peak kW saved as a percentage of LDC peak kW load (%):	*0.10%*	0.08%					0.01%	$0	$0	$0	$0
Gross in year C&DM expenditures ($):	*$167,783*	$13,863					$153,919	$7,182	$5,568	$13,549	$4,522
Expenditures per KWh saved ($/kWh):*	*$.53/kWh*	$.06/kWh					$1	na	na	na	na
*Expenditures per KW saved ($/kW)**:*	*1553.55*	$149					$10,261	na	na	na	na

Utility discount rate (%):	5.75		103642kw		520739785 kwh			Educ	Educ	Educ	Educ

*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

(complete this section for each program)

A. **Name of the Program:**

Voltage Conversion 4KV to 27.6KV

The Welland hydro voltage conversion program is designed to reduce losses on the Welland Hydro grid and therefore benefit all Welland Hydro's customers. The program was started in 2005 as we have several areas in the City of Welland that have not been converted from 4kV to 27.6kV. We strive to select areas within the city that will improve our overalll electrical distribution system. we have measured the life of the program as 25 years as the depreciated life of the assets, but the voltage conversion assets can have a life of 35 to 50 yeras, which enhances the voltage reduction program.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	4kV voltage		
Efficient technology:	27.6 kV voltage		
Number of participants or units delivered:	22354		
Measure life (years):	25		

B. **TRC Results:**

TRC Benefits ($):		$	*85,667.05*
TRC Costs ($):			
	Utility program cost (less incentives):	$	*151,867.05*
	Participant cost:	$	-
	Total TRC costs:	$	151,867.05
Net TRC (in year CDN $):		-$	66,200.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		$	0.56

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

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
	lifecycle	*in year*	
Energy saved (kWh):	#REF!	#REF!	
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):		15
	lifecycle	*in year*
Energy savngs (kWh):	2647625	105905

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 ($):	*Incremental capital:*	
	Incremental O&M:	
	Incentive:	
	Total:	
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 2,052.28
	Total:	$ 2,052.28
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. **Comments:**

Welland Hydro will continue voltage coversion program in 2006 and 2007 to the benefit of all our customers and improve the delivery of electricity. We have used the depreciation period of 25 years as the life of the program. The actual life of the assets could actualy last 35 to 50 years, which enhances the value of the program.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:**

Large User Audit-Commercial and Large User Breakfast Seminar

Welland Hydro sponsored a Energy Conservation breakfast in November 2005, in order to improve customer understanding of the electricity industry and to offer suggestions for conserving energy. All Commercial and Large User customers were invited. We had approximately 39 customers attend the seminar. At the seminar several industrial and large commercial customers attended. Welland Hydro provided speakers outlining methods to improve their energy consumption and understand the ever evolvong electricity market. As a result of the seminar customers have started to use energy tracking software to understand where and when they are using energy and how they can change their consumption.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Breakfast Seminar		
Efficient technology:			
Number of participants or units delivered:	39		
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	
Participant cost:	
Total TRC costs:	
Net TRC (in year CDN $):	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		
	Winter		
Energy saved (kWh):		#REF!	#REF!
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):		
	lifecycle	*in year*
Energy savngs (kWh):		

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 ($):	*Incremental capital:*	
	Incremental O&M:	
	Incentive:	
	Total:	
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 4,522.43
	Total:	$ 4,522.43
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. **Comments:**

We are scheduled to run more breakfast seminars in 2006. Feedback solicited from particpants was very favourable. Customers have reviewed Utilismart Energy Consumption software as a result of the seminar to improve their energy consumption and reduce costs.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:**

Co branding-Media Kit

Welland Hydro partnered with 11 NEPPA LDC's to design and develop a mass media kit to provide educational information to our customers. It was important for us to design a product to would not only re-introduce conservation to our customers but to build an ongoing brand that our customers will continue to recognize as time passes. Our product was designed to grow and develop. During design we focused on a family approach...a Conserver Family. Conserver Joe, Conserver Jane, Conserver Meghan and Conserver Jordan would share messages of how simple tasks could make incredible impact. We stongly believe that have our children help reinforce and teach us to save would make a significant difference. Our media kit comprised of conserver handbook, website, bill

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Media Kit		
Efficient technology:			
Number of participants or units delivered:	20554		
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):	
Participant cost:	
Total TRC costs:	
Net TRC (in year CDN $):	
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		
	Winter		
Energy saved (kWh):		#REF!	#REF!
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):		
	lifecycle	*in year*
Energy savngs (kWh):		

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 ($):	*Incremental capital:*	
	Incremental O&M:	
	Incentive:	
	Total:	
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 13,548.54
	Total:	$ 13,548.54
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. **Comments:**

The Conserver Joe Media Kit was an educational program.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:**

Smart Metering - > 50kW

Welland Hydro has committed to installing interval meters on all customers using more than 200kW by mid 2007. It is felt that these customers would benefit from interval usage information to shape and change their consumption and demand usage if a price signal could support improvements to their operations or changes to how or when they operate. We believe that over time and with added information regarding new technology, energy savings will be realized. We will be monitoring the customers as we work with them to educate them on usage patterns. In 2005 we purchsed 4 interval meters targeted for Niagara College, Region of Niagara Wastewater Treatment Plant, and the Water Treatment Plants. There is no data to evaluate as meters have not yet been installed.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Standard Commer. Meters		
Efficient technology:	Interval Meters		
Number of participants or units delivered:	4		
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):		
Participant cost:	$ -	
Total TRC costs:		
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	#DIV/0!	

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

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		
		lifecycle	*in year*
Energy saved (kWh):			
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):

	lifecycle	*in year*
Energy savngs (kWh):		

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:*	$ 3,516.00
	Incremental O&M:	
	Incentive:	
	Total:	$ 3,516.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 2,052.28
	Total:	$ 2,052.28
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. **Comments:**

No TRC value has been calculated. The meters were purchased in 2005 but not installed until early in 2006.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:**

Smart Metering - Low Volume Customers (residential and <50kW)

We are actively participating on working groups to ensure our ability to select and meet targeted timelines as set by the OEB and MOE. All costs incurred include are incremental costs to participate on committees, and our portion of consultant fees (OUSM). The intent of the program is evaluate different smart metering technology available to residential customers and present the results back to the province. There are more than 40 utilities participating in the OUSM group to design the program. OUSM results are expected throughout 2006. This is a smart meter education program.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Stock Meter		
Efficient technology:	Smart Metering - Low Volume		
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

TRC Benefits ($):

TRC Costs ($):

Utility program cost (less incentives):

Participant cost: $ -

Total TRC costs:

Net TRC (in year CDN $):

Benefit to Cost Ratio (TRC Benefits/TRC Costs): #DIV/0!

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

Conservation Programs:

		lifecycle	in year
Demand savings (kW):	*Summer*		
	Winter		
Energy saved (kWh):			
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):		
	lifecycle	*in year*
Energy savngs (kWh):		

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:*	$ -
	Incremental O&M:	
	Incentive:	
	Total:	$ -
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 7,180.56
	Total:	$ 7,180.56
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. **Comments:**

No TRC value has been calculated. We are participating on the OUSM Committees for Smart Metering, this is an educational program to help understand and develop the smart metering technology. This project is ongoing and not yet complete.

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Co-branding-Lighten Your Electricity Bill - Coupon Campaign

Description of the program (including intent, design, delivery, partnerships and evaluation):

Residential Coupon Campaign running from October 1st to December 31, 2005. Welland Hydro-Electric System Corp. partnered with Energyshop, Canadian Tire and 9 NEPPA members to deliver a residential program that offered energy efficient products at a discounted price. We joined 32 other utilities across the province to launch a provincial campaign. The project included discounts for the following products- ceiling fans, LED Christmas Lights, Compact Flourescent Lights and Outdoor Timers. Welland Hydro set a target of 3% of our customer base, but we were able to have 7% of our customers participate.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3	Measure 4 (if applicable)
Base case technology:	Incandescent 60 watt	Incandescent Xmas Lights	no timer	non-prog thermostats
Efficient technology:	CFL 15 watt	LED Lights	indoor & outdoor timer	Programmable Thermostats
Number of participants or units deliv	1418 (535 packages)	490	60	176
Measure life (years):	4	30	20	18

B. **TRC Results:**

TRC Benefits ($):	$	*114,758.01*
TRC Costs ($):		
Utility program cost (less incentives):	$	4,858.01
Participant cost:	$	14,100.00
Total TRC costs:	$	18,958.01
Net TRC (in year CDN $):	$	95,800.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	6.05

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

Conservation Programs:

Demand savings (kW):	*Summer*	12	
	Winter	81	
	lifecycle	*in year*	
Energy saved (kWh):	*2151544*	209980	
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):

	lifecycle	*in year*
Energy savngs (kWh):		

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:*		
	Incremental O&M:	$	4,858.01
	Incentive:	$	6,881.00
	Total:	$	11,739.01
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		2124.24
	Total:		2124.24
Participant costs ($):	*Incremental equipment:*		
	Incremental O&M:		
	Total:		

E. **Comments:**

LDC direct costs were determined based on the assumption that costs were shared as a percentage of overall sales.

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