



**HALTON HILLS HYDRO – RP-2004-0203\EB-2005-0374
CONSERVATION AND DEMAND ANNUAL REPORT
2005**

March 30, 2006



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1. Introduction

1.1. 2005 Objectives

Halton Hills Hydro (HHH) submitted their Demand Side Management Program on December 7, 2004. The overall goal is to reduce consumption by 5% or 23,371 MWH. With the majority of the customer base being residential historically, HHH expects a significant impact to their utility as new commercial/industrial properties move into Halton Hills. HHH developed a multi-pronged plan for C&DM that expected energy savings from residential, commercial, industrial and from HHH's system operations. In addition, education was given a priority in HHH's C&DM plan in order to encourage and foster a conservation culture among customers. The learning around the cost effectiveness of various energy conservation and demand management initiatives will assist HHH in achieving their goal of a 5% reduction in energy usage.

1.2. Discount Rate

The discount rate used in all the Net Present Value (NPV) calculations used in the TRC analysis is 8.57% which is equal to 50% of the rate of return and 50% of the debt rate. This level of discount rate ensures that there will be no change to the 50:50 ratio of debt to equity required of HHH.



2. Evaluation of the C&DM Plan

C&DM Program Evaluation

HHH's C&DM Plan was evaluated by following the OEB Total Resource Cost (TRC) Guide of October 14, 2005. A TRC analysis was done at each sub-program level. The sub-programs were then rolled up to the program level where program level costs were incorporated into the program level TRC analysis. Similarly, the programs were rolled up to generate the entire portfolio level and a portfolio level TRC was performed.

2.1. 2005 TRC Results at the Portfolio Level

In 2005, the TRC analysis at the Portfolio level is shown in Table 1 on the following page. This analysis covered the three C&DM programs that were active in 2005 - Customer Education, Commercial Industrial Energy Audits, and Water Heater Load Control. A summary of the C&DM Budget and Expenditures for the programs that were active in 2005 are shown in Table 2.



Table 1: 2005 TRC Analysis

	Portfolio	Program					
	Total	Customer Education	Commercial Industrial Energy Audits	Water Heater Load Control	System Loss Reductions	Smart Metering	Co-Generation
<i>Net TRC value (\$):</i>	\$114,846	\$48,255	\$54,557	\$12,034	\$0	\$0	\$0
<i>Benefit to cost ratio:</i>	1.45	3.37	1.31	1.21	0.00	0.00	0.00
<i>Number of participants or units delivered:</i>	20,681	20,438	168	75	0	0	0
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	7,938,344	1,555,319	5,708,025	675,000	0	0	0
<i>Total in year kWh saved (kWh):</i>	511,035	140,904	313,881	56,250	0	0	0
<i>Total peak demand saved (kW):</i>	106	9	35	62	0	0	0
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.1093%	0.0301%	0.0672%	0.0120%	0.0000%	0.0000%	0.0000%
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.1085%	0.0092%	0.0357%	0.0637%	0.0000%	0.0000%	0.0000%
<i>Gross in year C&DM expenditures (\$):</i>	\$145,782	\$35,186	\$54,277	\$56,319	\$0	\$0	\$0
<i>Expenditures per kWh saved (\$/kWh)*:</i>	\$0.0184	\$0.0226	\$0.0095	\$0.0834	\$0.0000	\$0.0000	\$0.0000
<i>Expenditures per kW saved (\$/kW)**:</i>	\$1,369	\$3,901	\$1,551	\$901	\$0	\$0	\$0
<i>Utility discount rate (%):</i>	8.57%						
<i>TRC Benefit</i>	\$368,222	\$68,647	\$231,222	\$68,353	\$0	\$0	\$0
<i>TRC Cost</i>	\$253,377	\$20,392	\$176,666	\$56,319	\$0	\$0	\$0

2.2. HHH Budget and Costs

In 2005, the actual expenditures compared to budget for the three active programs have been shown in Table 2 on the following page. The actual expenditures reported in Table 1 above are higher than the 4th quarter report by \$6,456 due to the inclusion of costs that were not billed in 2005, but belong to the Customer Conservation Education program for 2005 under the ENERconnect coupon sub-program.



Table 2: C&DM Budget and Expenditures - 2005 Active Programs

	Budget Amount	Q4 2005 Expenditures Reported to OEB
Water Heater Load Control	\$80,000	\$56,319
C/I Energy Audits	\$90,000	\$54,277
Customer Education	\$20,000	\$28,730
TOTAL	\$190,000	\$139,326

As mentioned in section 1.3 of this report, three programs had C&DM budgets, but no capital or operating expenditures during 2005. These programs are summarized in Table 3 below. HHH expects to initiate these programs during 2006.

Table 3: C&DM Budgeted Programs with No Expenditures in 2005

	Budget Amount	Q4 2005 Expenditures Reported to OEB
Load Shifting	\$200,000	\$0
Smart Metering	\$50,000	\$0
System Loss Reduction	\$275,000	\$0
TOTAL	\$525,000	\$0



3. Discussions of Programs

An overview of HHH's 2005 C&DM programs has been provided below along with the C&DM Budget expenditures and TRC Results at the Program level. An overview, a description of the actions taken, and a discussion of the applicable Sub-Program TRC results have been provided for each of the sub-programs

3.1. Customer Conservation Education

Overview

The Customer Conservation Education program has the primary role of encouraging a conservation culture in HHH's customer base. Both sub-programs accomplished this goal, but the ENERconnect coupon program also delivered an energy savings, therefore a TRC was completed (by SeeLine Group Inc.) for this sub-program.

C&DM Budget Expenditures

The Customer Conservation Education program has a C&DM budget of \$20,000 for the three-year period 2005 to 2007. In order to generate the initial momentum and awareness required to achieve the overall goal of reducing consumption by 5%, HHH spent \$35,186 in the first year. As mentioned in section 2.2, \$6,456 was not reported in the 4th quarter under the Customer Conservation Education expenditures of \$28,730. Due to the insufficiency of this program budget, HHH has requested increased funding for this program in their 2006 rate application. During 2006 and 2007, HHH intends to focus the remaining budget amounts on repeating the ENERconnect Coupon Customer Conservation Education sub-program as it was very effective in achieving the goals of this program. The Customer Account On-line Access sub-program of the Customer Conservation Education program was a one time investment and does not require further funding for 2006 and 2007.

TRC Results

The Program Level TRC for the Customer Conservation Education program includes the ENERconnect Coupon sub-program as well as the program level costs totalling \$8,359. The Customer Conservation Education program shows a Net TRC Value of \$48,255 and a Benefit to Cost Ratio of 3.37. The expenditures per kWh saved, including the expenditures for the ENERconnect Coupon sub-program, the Customer Account On-line Access sub-program and the program level expenditures, totalled \$0.023. Considering the Customer Account On-line Access sub-program did not result in direct energy savings, the Customer Conservation Education program was very



successful both in terms of the increased participation and awareness by customers and in terms of the low cost of the kWh saved through this program.

3.1.1. ENERconnect Coupon Program

Overview

ENERconnect negotiated a coupon program for member LDCs that provided discounts on energy efficient merchandise at Canadian Tire stores. The program was administered by Energyshop and the TRC analysis was completed by SeeLine Group Inc. A total of 32 LDCs participated in this program including HHH.

Additional Purchases of CFLs and SLEDs

The following information on Free Drivership was provided by Energyshop/SeeLine Group Inc.

There is considerable evidence that the purchase of CFLs and SLEDs caused by the program was considerably higher than coupons redeemed. This is often referred to as Free Drivership and is the philosophical opposite of Free Ridership. C&DM results are discounted by 10% for Free Riders; customers who had planned to buy the product making the discount coupon unnecessary. Free Drivership accounts for customers the program influenced to purchase a product, and in fact bought more products than coupons redeemed, or purchased without a coupon.

This effect is seen in the 2005 Lighten Your Electricity Bill program, but has not been quantified. The OEB has not yet ruled on the acceptability of Free Drivership, and as such this was not included in our calculated savings numbers. However, it is important to recognize Free Drivership as a valid indicator of C&DM program success in the development of the conservation culture in Ontario.

Program coupons redeemed at Canadian Tire stores:

CFLs	51,875
SLEDs	51,605

Canadian Tire Year over Year Sales Increase – Oct 1 to Dec 31 – 2005 versus 2004:

CFLs	125,820
SLEDs	248,898



Post program market research results. Average number of packages purchased when using a coupon:

CFLs	4.1 packages
SLEDs	3.4 packages

These averages are supported by a review of a sample of sales receipts submitted by Canadian Tire stores when redeeming coupons.

The result of the above shows the impact of this program in addition to the coupons redeemed.

Description of Actions Taken

The coupon package offering discounts on CFLs, LED Christmas Lights, Programmable Thermostats, Light and Appliance Timers, and Ceiling Fans was sent to all HHH customers with their monthly bill. In terms of success factors, the final results exceeded expectations resulting in even more energy efficient technology being put into place by customers.

TRC Results

The following summary is based on the TRC analysis of HHH's results as prepared by SeeLine Group Inc. and included as Appendix C. The total TRC Net Benefit for all the products purchased using the HHH supplied coupons was \$56,614 for a TRC Benefit to Cost Ratio of 5.70. The total kWh saved over the life cycle is 1,555,319 and expenditures per kWh saved were \$0.006. The total expenditures for this program are different from the Q4 C&DM report of expenditures submitted to the OEB. The expenditures used for calculating total expenditures included incentive costs of \$4,968 as well as increased utility costs related to the management the sub-program of \$1,488. These two adjustments result in a total increase of expenditures of \$6,456 as compared to the Q4 C&DM expenditures reported to the OEB.

3.1.2. Customer Account On-line Access

Overview

Under this sub-program, HHH provided each customer, upon request, with access to their consumption and billing information. Residential and small commercial customers were provided on-line access to three years history of consumption and billing data as well as graphing capabilities. Large commercial and HHH's industrial customers were provided with eMeterData.com through a partnership with ENERconnect. These larger customers gained on-line access to their consumption and billing history as well as



industry information such as current market and price data from the Independent Electricity System Operator, a quarterly newsletter, and electricity news through the internet. With on-line capability, customers have more tools to use when managing their energy consumption. HHH paid for 50% of the cost of this system and charged 50% to the C&DM budget through this sub-program. The rationale was that at least half of the benefit of the Customer Account On-line Access was conservation and demand management related since the increased awareness and understanding of how a customer's consumption compares to past or average consumption levels contributes to the goal of fostering a conservation culture in Ontario.

Description of Actions Taken

In addition to providing customers with confidential access to only their own account information, HHH advertised this new capability to its residential and small commercial customers through the bill message centre and an advertisement provided in Appendix D. A template of the letter sent to large commercial and all industrial customers has been provided in Appendix E.

TRC Results

There was no TRC completed for this sub-program since there were no measurable benefits. However, the total C&DM expenditures of \$17,983 were included in the Customer Conservation Education program level TRC analysis.

3.2. Commercial Industrial Energy Audits

The Commercial Industrial Energy Audits program includes sub-programs relevant to Commercial and Industrial customers as well as all energy audit sub-programs. The two sub-programs identified and undertaken during 2005 were the Halton Residential Energy Efficiency Project and Mold-Masters SportsPlex sub-programs.

Overall, the Commercial Industrial Energy Audits program performed well in 2005 based on the TRC analysis. The Net TRC Value was \$54,557 with a Benefit to Cost Ratio of 1.31 and expenditures per kWh saved of \$0.010.

3.2.1. Halton Residential Energy Efficiency Project (HREEP)

Overview

HHH partnered with Elora Environmental to provide an incentive to customers to have their home assessed for energy savings opportunities through an energy audit. The energy audit recommendations were followed up and additional measurements were taken to determine the effectiveness of any actions taken by the homeowner. In cases



where measurements were not possible (e.g. lighting and appliances), the national standards provided by EnerGuide for Homes were used as the default.

Description of Actions Taken

HHH provided an incentive of \$25 toward the cost of an energy audit to the first 200 customers. In addition, HHH advertised this opportunity to their customer base and a sample of the advertisement has been attached as Appendix F.

TRC Results

For the purposes of the TRC analysis, it was assumed that the energy savings all resulted from building envelope improvements. The 237 customers who completed energy audits in 2005 were reduced by 70 to reflect the free rider rate for this sub-program. The number of free riders was assumed to equal the 70 customers that completed energy audits in the year before this sub-program was implemented. The remaining 167 customer who completed energy audits were considered participants with a free rider rate of 0%. The average kWh savings per customer was 1,124.7 based on the partial year results determined through a follow up visit after the energy audit to determine the actual energy savings.

The average grant received after completing the energy audit was \$123 and, based on the results from other Ontario jurisdictions, it was assumed that the grant funds received represented 20% of the total cost of the energy improvements undertaken by participants.

The results of the TRC analysis for the HREEP sub-program show a net TRC benefit of \$5,948 and a Benefit to Cost ratio of \$1.05. The total kWh saved over the 25 year life cycle is 4,282,025 and expenditures per kWh saved were \$0.002.

3.2.2. Mold-Masters SportsPlex

Overview

HHH provided financial support to the Town of Halton Hills for the installation of a Demand Side Reduction Equipment at the Mold-Masters SportsPlex, Georgetown. The purpose of the financial support from Halton Hills Hydro is to use the installation as a pilot Demand Side Reduction initiative. Halton Hills Hydro will monitor and verify the resulting hydro consumption levels at the Mold-Masters SportsPlex. The amount of electricity used will be compared against pre-installation use to determine the actual amount saved.



Description of Actions Taken

The Demand Side Reduction Equipment was installed in the last quarter of 2005. The total cost spent was \$46,777.

TRC Results

The TRC benefit is \$95,386, the net TRC is \$48,609 and the Benefit to Cost Ratio is 2.04. The total kWh saved over the 10 year life cycle is 1,426,000 and the expenditure per kWh saved is \$0.03.

3.3. Water Heater Load Control

Overview

The HHH Water Heater Load Control (WHLC) program is implemented on new water heaters as well as replacement water heaters. The percentage of replacement installations is assumed to be 88% while the remaining 12% are new water heater installations. These are the actual replacement and new water heater installation rates for the combined period of 2004 and 2005. HHH has assumed an increase in efficiency on the replacement water heaters of 15% due to the decline in efficiency of water heaters as they age. A 10% Free Ridership rate is assumed in the energy saving calculation but a 0% Free Ridership rate is used for the Avoided Capacity Costs for Demand Response.

The 2005, 2006 and Entire Program TRC analyses used a Discount Rate of 8.57%. This actual 2005 value was used as a proxy for the entire implementation period of 2005 to 2011 in order to be consistent over the lifetime of the program.

Description of Actions Taken

In the 2005 TRC, there were 75 water heaters under the WHLC program. There were three TRC analyses completed for the WHLC program – 2005, 2006 and the entire projected program period (2005-2011).

2005 TRC Results

The load shifting savings and the Avoided Capacity Costs for Demand Response result in a Net Present Value for the Program of \$12,034 or a net benefit of \$160 per water heater control unit. The demand response benefit is \$703 per water heater control and the energy saving is \$208 after the deduction of the 10% Free Ridership. The cost is \$751 per unit. Based on this finding, HHH plans to continue with the WHLC program until the targeted 2,200 water heaters are under the load control program.



Overall, the 2005 Water Heater Load Control program performed well in 2005 based on the TRC analysis. The Net TRC Value was 12,034 with a Benefit to Cost Ratio of 1.21 and expenditures per kW reduced were \$901.

3.4. HHH C&DM Programs not Initiated in 2005

Having begun only last year, the C&DM initiative in Ontario is a learning process for electric local distribution companies (LDCs). As each program is researched or implemented, a better understanding of specific customer groups is attained. In response to this increased knowledge, HHH's program descriptions and plans submitted to the Ontario Energy Board (OEB) on December 7, 2004 have been evolving over the past year. Some changes have been made to HHH's programs in order to accommodate the information gleaned from working with customers and from reviewing the results of programs that have been implemented.

For example, the Customer Conservation Education program has expanded to include additional opportunities such as the ENERconnect Coupon sub-program and the Commercial/Industrial Energy Audits program has changed its focus slightly. This program, now referred to as Commercial Industrial Energy Audits, not only captures Commercial and Industrial Energy Audits, but now also captures other sub-programs initiated with commercial or industrial clients as well as residential energy audits.

In addition, the Co-generation program has been re-focused based on feedback suggesting that the expected opportunities either were not going to materialize or would not meet the timelines of the C&DM plan. Therefore, HHH investigated other energy savings concepts and is developing a load shifting program using innovative technology. The Co-generation program is now called the Load Shifting program and it will undertake to assess the feasibility of this innovative load shifting technology. Although commercial sensitivity precludes a full description of this technology at this time, HHH intends to provide complete details of this feasibility study in the 2006 C&DM Report.



4. Lessons Learned

4.1. Customer Conservation Education

Overall, the Customer Conservation Education was quite successful in 2005. Given the requirement to increase awareness and participation in energy saving technology and behaviour in order to achieve HHH's goal of reducing consumption by 5%, it is a necessary program to continue in 2006 and beyond.

The concept of partnering with others and offering incentives to customers can be quite beneficial as demonstrated by the ENERconnect Coupon sub-program. Not only was the Benefit to Cost Ratio quite strong at 5.70, but the expenditures per kWh saved were quite low at \$0.006. The ability to spread fixed costs over a large group of LDCs greatly increased the TRC results. HHH intends to offer a similar sub-program again in 2006 based on these excellent results.

The Customer Account On-line Access sub-program was effective in that it reached every customer and provided an incremental energy savings tool to each customer with relatively low expenditures. This sub-program represents a one-time cost, but other educational sub-programs will be considered in future.

4.2. Commercial Industrial Energy Audits

The Commercial Industrial Energy Audits program consisted of the HREEP and the Mold-Masters SportsPlex sub-programs in 2005.

The HREEP sub-program had the lowest level of Expenditure per kWh saved at only \$0.002 due to the fact that the majority of expenditure was made by the participant and not HHH. While the TRC captures the costs of both the participant and HHH, it was still positive at a Benefit to Cost Ratio of 1.05. Again, the concept of partnering with others, in this case Elora Environmental, and offering incentives was a successful strategy not only in terms of the TRC analysis results, but also in terms of increased participation. HHH's customers had an increase in year over year participation in energy audits of 70% resulting in incremental annual energy savings of 171,281 kWh. The HREEP sub-program is another that HHH intends to continue in 2006.

The Mold-Masters SportsPlex Demand Side Management System was started in the last quarter of 2005. The program is still at the early stages and requires continuous monitoring and measurement to track savings and cost.



4.3. Water Heater Load Control

The Water Heater Load Control Program was started in 2005 and 75 units out of a total target of 2200 have been installed. The program is still at the early stages and requires continuous monitoring and measurement to track savings and cost.



5. Conclusion

5.1. Customer Conservation Education

The Customer Conservation Education program performed well in 2005. HHH has requested additional C&DM funding to continue the successful ENERconnect Coupon sub-program in 2006 and 2007. The Customer Account On-line Access sub-program has now been completed and no additional C&DM funds are required.

5.2. Commercial Industrial Energy Audits

HHH has requested additional funds for the Commercial Industrial Energy Audits program for 2006 and 2007 and plans to continue to offer the HREEP sub-program during this period. The Mold-Masters SportsPlex sub-program has now been completed and will not require additional C&DM funds during 2006 and 2007.

5.3. Water Heater Load Control

The Water Heater Load Control program is planned to continue for a number of years (out to 2011) and incremental C&DM funding has been requested to allow HHH to continue this program at a rate of 30 installations per month.

5.4. HHH C&DM Programs not Initiated in 2005

As discussed in section 3 above, HHH has programs that are expected to begin during 2006 that are not addressed in this 2005 report. HHH will address these programs in the 2006 Conservation and Demand Annual Report.



6. Appendices

6.1. Appendix A : 2005 Halton Hills Hydro – Evaluation of the CDM Plan

	Portfolio	Aggregated Totals		
	Total	Residential	GS < 50 W	GS > 50 W
<i>Net TRC value (\$):</i>	\$114,846	\$66,237	\$48,609	\$0
<i>Benefit to cost ratio:</i>	1.45	1.32	2.04	0.00
<i>Number of participants or units delivered:</i>	20,681	20,680	1	0
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	7,938,344	6,512,344	1,426,000	0
<i>Total in year kWh saved (kWh):</i>	511,035	368,435	142,600	0
<i>Total peak demand saved (kW):</i>	106	71	35	0
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.1093%	0.0788%	0.0305%	0.0000%
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.1085%	0.0729%	0.0357%	0.0000%
<i>Gross in year C&DM expenditures (\$):</i>	\$145,782	\$99,005	\$46,777	\$0
<i>Expenditures per kWh saved (\$/kWh)*:</i>	\$0.0184	\$0.0152	\$0.0328	\$0.0000
<i>Expenditures per kW saved (\$/kW)**:</i>	\$1,369	\$1,385	\$1,336	\$0
<i>Utility discount rate (%):</i>	8.57%			
<i>TRC Benefit</i>	\$368,222	\$272,836	\$95,386	\$0
<i>TRC Cost</i>	\$253,377	\$206,600	\$46,777	\$0



6.2. Appendix B: Discussion of the Sub-programs

6.2.1. Customer Conservation Education Sub-programs

6.2.1.1. ENERconnect Coupon Program (2 pages)

A. **Name of the Program:** Customer Conservation Education - ENERConnect Coupon

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

ENERConnect offered a coupon program to LDCs that provided coupons for energy efficient merchandise at Canadian Tire stores. The program was administered by Energysnap and the TRC analysis was completed by SeeLine Group Inc. A total of 32 LDCs participated in this program including HHH. The coupon package offered discounts on CFLs, LED Christmas Lights, Programmable Thermostats, Light and Appliance Timers, and Ceiling Fans. In terms of success factors, the final results exceeded expectations significantly resulting in more energy efficient technology being put into place by customers. The following summary is based on the TRC analysis prepared by SeeLine Group Inc. which has been included in the HHH Annual CDM Report as an Appendix.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	See attached TRC Analysis		
Efficient technology:	See attached TRC Analysis		
Number of participants or units delivered:	See attached TRC Analysis		
Measure life (years):	See attached TRC Analysis		

B. **TRC Results:**

TRC Benefits (\$):		\$68,647.00
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 3,876.00
	Participant Costs	\$ 8,157.00
	Total TRC costs:	\$ 12,033.00
Net TRC (in year CDN \$):		\$ 56,614.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 5.70

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	lifecycle	in year
Energy saved (kWh):	1,555,319	140,904
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):	



Appendix B: ENERconnect Coupon Program page 2

Power Factor Correction Programs:

Amount of KVar installed (KVar):

Distribution system power factor at beginning of year (%):

Distribution system power factor at end of year (%):

Line Loss Reduction Programs:

Peak load savings (kW):

lifecycle in year

Energy savings (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*:

<i>Utility direct costs (\$):</i>	<i>Incremental capital:</i>	<input type="text"/>
	<i>Incremental O&M:</i>	\$ 3,876.00
	<i>Incentive:</i>	\$ 4,968.00
	<i>Total:</i>	\$ 8,844.00
<i>Utility indirect costs (\$):</i>	<i>Incremental capital:</i>	<input type="text"/>
	<i>Incremental O&M:</i>	<input type="text"/>
	<i>Total:</i>	\$ -
<i>Participant costs (\$):</i>	<i>Incremental equipment:</i>	\$ 8,157.00
	<i>Incremental O&M:</i>	<input type="text"/>
	<i>Total:</i>	\$ 8,157.00

E. Comments:

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



6.2.1.2. Customer Account On-line Access (2 pages)

A. **Name of the Program:** Customer Conservation Education - Customer Account On-line Access

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

HHH provided each customer with access to their consumption and billing information. Residential and small commercial customers were provided on-line access to three years history of consumption and billing data and graphing capabilities. Large commercial and HHH's industrial customers were provided with eMeterData.com through a partnership with ENERConnect. These larger customers gained on-line access to their consumption and billing history as well as industry information such as current market and price data from the Independent Electricity System Operator and electricity news through the internet. With on-line capability, customers have more tools to use when managing their energy consumption. HHH paid for 50% of the cost of this system and charged 50% to the C&DM budget through this sub-program. The rationale was that at least half of the benefit of the Customer Account On-line Access was conservation and demand management related since the increased awareness and understanding of how a customer's consumption compares to past or average consumption levels contributes to the goal of fostering a conservation culture in Ontario.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:	19,000		
Measure life (years):			

B. **TRC Results:**

TRC Benefits (\$):

TRC Costs (\$):

Utility program cost (less incentives):	
Participant Costs	
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:

Demand savings (kW):	Summer	
	Winter	
	<i>lifecycle</i>	<i>in year</i>
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):	



Appendix B: Customer Account On-line Access page 2

Power Factor Correction Programs:

Amount of KVar installed (KVar):

Distribution system power factor at beginning of year (%):

Distribution system power factor at end of year (%):

Line Loss Reduction Programs:

Peak load savings (kW):

	<i>lifecycle</i>	<i>in year</i>
Energy savings (kWh):	<input type="text"/>	<input type="text"/>

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 (\$):	<i>Incremental capital:</i>	<input type="text"/>
	<i>Incremental O&M:</i>	\$ <input type="text" value="17,983.00"/>
	<i>Incentive:</i>	<input type="text"/>
	<i>Total:</i>	\$ <input type="text" value="17,983.00"/>
Utility indirect costs (\$):	<i>Incremental capital:</i>	<input type="text"/>
	<i>Incremental O&M:</i>	<input type="text"/>
	<i>Total:</i>	\$ <input type="text" value="-"/>
Participant costs (\$):	<i>Incremental equipment:</i>	\$ <input type="text" value="-"/>
	<i>Incremental O&M:</i>	<input type="text"/>
	<i>Total:</i>	\$ <input type="text" value="-"/>

E. Comments:

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



6.2.2. Commercial Industrial Energy Audits Sub-Programs

6.2.2.1. Halton Residential Energy Efficiency Project (HREEP) (2 pages)

A. **Name of the Program:** Commercial Industrial Energy Audits - Halton Residential Energy Efficiency Program (HREEP)

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

HHH partnered with Elora Environmental to provide an incentive to customers to have their home assessed for energy savings opportunities through an energy audit. The energy audit recommendations were followed up and additional measurements were taken to determine the effectiveness of any actions taken by the homeowner. In cases where measurements were not possible (e.g. lighting and appliances), the national standards provided by EnerGuide for Homes were used as the default. HHH provided an incentive of \$25 toward the cost of an energy audit to the first 200 customers.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:	167		
Measure life (years):	25		

B. **TRC Results:**

TRC Benefits (\$):		\$135,836.13
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 2,500.00
	Participant Costs	\$ 127,388.59
	Total TRC costs:	\$ 129,888.59
Net TRC (in year CDN \$):		\$ 5,947.54
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 1.05

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):	4,282,025	171,281
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):	



Appendix B: HREEP page 2

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy savings (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:	\$ 2,500.00
	Incentive:	\$ 5,000.00
	Total:	\$ 7,500.00
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	
	Total:	\$ -
Participant costs (\$):	Incremental equipment:	\$ 127,388.59
	Incremental O&M:	
	Total:	\$ 127,388.59

E. Comments:

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



6.2.2.2. Mold-Masters SportsPlex (2 pages)

A. **Name of the Program:** Commercial Industrial Energy Audits - Mold-Masters SportsPlex

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

HHH provided financial support to the Town of Halton Hills for the installation of a Demand Side Reduction Equipment at the Mold-Masters SportsPlex, Georgetown. The purpose of the financial support from Halton Hills Hydro is to use the installation as a pilot Demand Side Reduction initiative. Halton Hills Hydro will monitor and verify the resulting hydro consumption levels at the Mold-Masters SportsPlex. The amount of electricity used will be compared against pre-installation use to determine the actual amount saved.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:	1		
Measure life (years):	10		

B. **TRC Results:**

TRC Benefits (\$):		\$95,386.00
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 46,777.00
	Participant Costs	
	Total TRC costs:	\$ 46,777.00
Net TRC (in year CDN \$):		\$ 48,609.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 2.04

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
Energy saved (kWh):	lifecycle	in year
	1,426,000	142,600
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):	



Appendix B: Mold-Masters SportsPlex page 2

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):		
	<i>lifecycle</i>	<i>in year</i>
Energy savings (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:	\$	46,777.00
	Incremental O&M:		
	Incentive:		
	Total:	\$	46,777.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:	\$	-
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:	\$	-

E. Comments:

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



6.2.3. Water Heater Load Control Program (2 pages)

A. **Name of the Program:** Water Heater Load Control

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

The HHH Water Heater Load Control (WHLC) program is implemented on new water heaters as well as replacement water heaters. The primary objective of this installation is for demand reduction. The percentage of replacement installations is assumed to be 88% while the remaining 12% are new water heater installations. These are the actual replacement and new water heater installation rates for the combined period of 2004 and 2005. As a secondary objective, the newly installed water heater will also save energy due to higher efficiency. It has been assumed that an increase in efficiency on the replacement water heaters of 15% due to the decline in efficiency of water heaters as they age. A 10% Free Ridership rate is assumed in the energy saving calculation but a 0% Free Ridership rate is used for the Avoided Capacity Costs for Demand Response.

Measure(s):

	Measure 1 (if applicable)	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered:	75		
Measure life (years):	12		

B. **TRC Results:**

TRC Benefits (\$):		\$68,353.00
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 56,319.00
	Participant Costs	
	Total TRC costs:	\$ 56,319.00
Net TRC (in year CDN \$):		\$ 12,034.00
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 1.21

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
Energy saved (kWh):	lifecycle	675,000
	in year	56,250
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):	0.833
Peak hours dispatched in year (hours):	



Appendix B: Water Heater Load Control page 2

Power Factor Correction Programs:

Amount of KVar installed (KVar):

Distribution system power factor at beginning of year (%):

Distribution system power factor at end of year (%):

Line Loss Reduction Programs:

Peak load savings (kW):

	<i>lifecycle</i>	<i>in year</i>
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Energy savings (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 (\$):	<i>Incremental capital:</i> <i>Incremental O&M:</i> <i>Incentive:</i> <i>Total:</i>	<table style="width: 100%;"> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> </table>	\$	<input type="text"/>	\$	<input type="text"/>	\$	<input type="text"/>	\$	<input type="text"/>
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Utility indirect costs (\$):	<i>Incremental capital:</i> <i>Incremental O&M:</i> <i>Total:</i>	<table style="width: 100%;"> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> </table>	\$	<input type="text"/>	\$	<input type="text"/>	\$	<input type="text"/>		
\$	<input type="text"/>									
\$	<input type="text"/>									
\$	<input type="text"/>									
Participant costs (\$):	<i>Incremental equipment:</i> <i>Incremental O&M:</i> <i>Total:</i>	<table style="width: 100%;"> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> <tr><td style="text-align: right;">\$</td><td style="text-align: right;"><input type="text"/></td></tr> </table>	\$	<input type="text"/>	\$	<input type="text"/>	\$	<input type="text"/>		
\$	<input type="text"/>									
\$	<input type="text"/>									
\$	<input type="text"/>									

E. Comments:

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



6.3. Appendix C: SeeLine Group Inc. Report

Please see the attached report.



6.4. Appendix D: Customer Account On-line Access Advertisement for Residential and Small Commercial Customers

Access your hydro account anytime

An exciting new service for residential and small commercial customers of Halton Hills Hydro.



- Review your billing history
- Easy on-line registration
- 24 hour convenience
- Sign up today



In conjunction with Halton Hills Hydro's Conservation and Demand Management program.

For easy to follow instructions on our website:

- 1) Just log on at www.haltonhillshydro.com
- 2) Select 'View Your Account Info Online'.
- 3) Select 'Create PIN' with your account number found on your last statement.

You can reach us at:
43 Alice Street
Acton, ON L7J 2A9
Ph: 519-853-3701
Fax: 519-853-2621
inquiries@haltonhillshydro.com



6.5. Appendix E: Customer Account On-line Access Letter to Large Commercial and all Industrial Customers



January 27th, 2005

Halton Hills Hydro Inc. is pleased to offer an exciting new service to you, our important commercial/industrial customers!

eMeterData.com was designed to provide you, as a retail energy user, with up-to-date meter readings to track your consumption. There is easy access to Hourly Ontario Energy Pricing data that can be combined with your usage to provide your actual cost of power.

Meter data is available 24/7 on a secure e-commerce website with special features such as access to up-to-date electricity news from the CP News wire and from us, your local distribution company. We also provide a live feed of current market data from the Independent Electricity System Operator to get up-to-date pricing and market consumption.

With the current government focus on conservation and demand side management, we believe this web tool provides the information you need to assist you with tracking consumption and monitoring conservation programs.

Following is the information you need to access your private login area of the site:

Address: www.haltonhillshydro.com
Username:
Password:

Please let me know if you have any questions.

Sincerely,

Arthur A. Seidmore, CMA
Chief Financial Officer





6.9 Appendix F: HREEP Advertisement

Grant money for homeowners!

Halton Hills Hydro
will contribute
\$25⁰⁰
toward the cost of your
EnerGuide for Houses[†]
assessment



-  **Reduce your Energy Costs**
-  **Improve your Home Comfort**
-  **Qualify for a Federal Grant**
Grants ranging from \$116 to \$3,348 are based on the difference between the initial EnerGuide for Houses™ rating and the final rating after the free follow-up evaluation.

Initial evaluations by your local Certified Energy Advisors take approximately 3 hours
The reduced cost of an evaluation for Halton Hills Hydro customers is
now \$175 less the \$25 hydro contribution = \$150* + GST
on houses up to 3000 square feet

**Call Halton Residential Energy Efficiency Project
(905) 873-2761 or Toll Free at 1-866-501-1112**

[†] EnerGuide for Houses is an official trademark of Natural Resources Canada. Used with permission. Ecto/Ma 05

*prior subject to change