



**ANNUAL REPORT OF  
CONSERVATION AND DEMAND MANAGEMENT  
INITIATIVES - 2005  
(EB-2002-0513)**

**December 31, 2005**

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March 30, 2006**

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APPENDIX A – EVALUATION OF THE CDM PROGRAM

APPENDIX B - DISCUSSION OF THE PROGRAM

- Load Control System
- Voltage Conversions
- Compact Flourescent Light Bulbs
- LED Seasonal Lights
- Residential Energy Awareness
- General Service Energy Awareness

# 1. Introduction

In 2005, Festival Hydro commenced delivery of a number of CDM programs to its customers focused on reducing system demand and conservation of electricity. These initiatives are taking place from 2005 to 2007, targeting all customer classes. The total budget for the three years is based on the third installment of Festival Hydro's Market Adjustment Revenue Requirement (MARR) of \$661,623.

Our original CDM plan submitted to the OEB on November 18, 2004 reported a total CDM budget amount of \$811,000. That budget has been revised proportionately, by category, to equal the third installment of the MARR at \$661,623.

The table below summarizes the various planned initiatives and the budgeted expenditures by year:

	2005	2006	2007	Total
1. Load Control System	\$141,544	\$109,317	\$119,109	\$369,970
	\$ 44,870	\$ 44,870	\$ 44,870	\$134,610
2. Voltage Conversions				
3. Compact Fluorescent Light Bulbs	\$ 17,947	\$ 17,947	\$ 17,946	\$ 53,840
4. LED Seasonal Lighting	\$ 13,462	\$ 13,462	\$ -	\$ 26,924
5. Energy Awareness (Residential)	\$ 15,090	\$ 6,120	\$ 6,120	\$ 27,330
6. Energy Seminars (General Service)	\$ 16,315	\$ 20,395	\$ 12,238	\$ 48,948
Total	\$249,228	\$212,111	\$200,283	\$661,623

The first four (4) programs promote demand reduction and energy conservation, with results that are relatively easy to calculate and monitor. The Energy Awareness Program for Residential Customers and the Energy Seminars for General Service Customers provide educational opportunities for all customers, but the results are difficult to predict and monitor.

Festival Hydro has informally consulted with most of the distributors in the area to exchange ideas and to determine if joint ventures are possible. We have worked with other LDCs, for example, on the load control system initiative with respect to implementation issues and future compensation issues.

For the residential focused initiatives, such as the C.F. light bulbs, LED seasonal lighting and the residential awareness, Festival Hydro has worked in conjunction with a number of local environmental committees such as the City of Stratford Energy & Environmental Committee, the St. Marys Green Committee, the local high school environmental group (CARE) and the Seaforth Business Improvement Committee to assist in delivering these programs. We find it is very effective to work with these "grass roots" agencies because of their great passion for the environment and conservation

and their commitment to seeing conservation become a reality. We also partnered with REEP, a local organization that delivers the Energuide for Houses Services (home audits) and partnered with the IESO, OPA and a local lighting specialist to deliver General Service conservation seminars.

Festival Hydro's initiatives have also received plenty of free publicity thanks to the local newspapers. Throughout the year there have been articles along with pictures in the local newspapers relating to

- Load control program,
- LED exchange program,
- Residential energy efficient audit program,
- "Back in Black" community event
- General Service customer seminars.

## **2. EVALUATION OF THE CDM PLAN**

Overall, as indicated on the attached Appendix A, Festival Hydro implemented a number of effective programs in 2005. All the initiatives undertaken had good participation rates and generated a positive return in terms of energy saved or load shifted. We would recommend all of these programs to fellow LDCs.

## **3. DISCUSSION OF THE PROGRAMS**

The attached Appendix B provides for each program details on the intent of the program, the design, delivery, partners we work with and the evaluation of its success. It also includes the resource costing which proves the effectiveness of the plans.

## **4. LESSONS LEARNED**

The most important lesson we learned was the importance of personal interaction with customers to get the conservation message across and to get people thinking about and acting on conservation. Our programs have been successful as a result of the interaction of Festival Hydro employees with our customers. We took part in events like the LED seasonal light exchange, C.F. light distribution, manning of conservation booths at home shows and other conservation events, and sponsoring of conservation

related seminars. These types of events allow Festival Hydro staff to talk to customers about conservation and to get the message out. Festival Hydro could have chosen the coupon route for both the C.F. light bulbs and LED seasonal lights but it wouldn't have been as effective in getting the message out there and encouraging people to react. Our recommendation to all LDCs is that the more they can get out and involved in the community to personally pass along the conservation message, the better the results will be for the whole province.

The following are other general observations made by Festival Hydro when evaluating the overall success of our plans:

- We found through our discussions with customers that many customers are very keen on finding ways to reduce their electrical use. They realize that not only does conservation save them money, but their individual efforts can collectively help make a difference on electricity demand province wide.
- Many customers look for conservation programs that have minimal impact on their life style. Programs like the water heater load control program are very successful for this reason.
- Customers look for low cost, simple solutions. Our programs of giving away free C.F. light bulbs and free LED seasonal lighting were very successful for that reason.
- Programs like the voltage conversions are very successful because not only does it reduce the loss of electricity but the consumer also benefits due to lower line losses on their bills.
- The seminars for general service customers are quite popular, with the lighting seminar generating the greatest results. There have been two major industrial customers located in Stratford who have undertaken lighting reviews and approximately seven have made follow up inquiries as a direct result of the seminar hosted by Festival Hydro.
- Taking part in public events, like the Home Shows and the Back in Black event provide tremendous exposure to the public.
- Partnering with "grass roots" environmental groups and committees is extremely valuable as these committees are committed to conservation and are eager to assist in delivery of our programs.
- Having a good working relationship with the local media is very important in terms of obtaining coverage of local conservation events.

In terms of the specific successes of Festival Hydro's programs, the following is a brief summary:

### **Load Control Program**

As noted above, this is very successful with the residential customers because it's a form of conservation that occurs without generally impacting anyone's lifestyle. In addition, customers receive a \$3.50 per month credit which is an enticement to participate. As noted in Appendix B, the program has delivered positive results in 2005. Festival Hydro's will continue with its plan to install more controllers in 2006 and 2007 because of the impact it can have when demand is high.

Festival Hydro's load control system has the capacity to control many water heaters in the future. This is a service which we could supply to other LDCs or local Hydro One customers if a proper funding formula was established.

### **Voltage Conversions**

This initiative has been a positive undertaking for Festival Hydro because it targets all customer classes, and is complimentary from an LDC perspective as it is accomplished in conjunction with the replacement of "end-of-life" infrastructure. We are accomplishing this reduction in system losses by converting 4kV distribution to higher voltages (in effect decreasing the amount of current needed to deliver the same amount of energy).

Perhaps our greatest success with this initiative is that we exceeded our estimated kW savings for 2005, with our actual kW savings through voltage conversion for 2005 being approximately 85 kW. The reduced losses will, through subsequent rate applications, reduce the amount charged on each customer's bill for system losses.

While this initiative does not have a high profile media/consumer profile it produces positive results. Festival Hydro will continue with this initiative throughout 2006 and 2007. We would highly recommend this to any LDC who still has a large amount of 4kV infrastructure.

### **Compact Fluorescent (C. F.) Light Bulbs**

During 2005, there were 3,504 C.F. light bulbs distributed through residential home delivery, home show distribution and distribution from other centers. The timing proved beneficial in view of the Ontario's power shortage during the hot weather. Follow up telephone surveys with those who received home delivery indicated that customers had in fact installed the free C.F. lights and a number had responded that they would start to replace more of their lights with C.F. light bulbs.

In 2006, being the OPA is introducing a residential program offering two free C.F. light bulbs per customer, Festival Hydro is planning to redirect part of the 2006 C.F. light bulb budget to Residential Energy Awareness towards an EnergyStar appliance rebate program. In 2007, we plan to return to the C.L. light bulb distribution as we do have funds for C.F. light bulbs in the 2007 budget. Given our success in 2005, we would recommend that other LDCs undertake a similar form of C.F. light bulb exchange or coupon redemption process.

### **LED Seasonal Lighting**

This program was highly successful with all available lights being distributed in a couple of hours. One strength to this program was that Festival Hydro required an exchange of an old incandescent set for the one LED seasonal lights. We knew through this process that the old inefficient lights would never be reused. It was also very popular because the lights were free.

According to Appendix B, a positive TRC is not projected. However, the model uses a 5 years as the measurement years when in fact many of our customers will probably be using these lights for the next 8 to 10 years.

All funding available for LED seasonal lights was spent in 2005 so there will be no repeats in 2006 or 2007. We would highly recommend other LDCs to take part in a similar exchange.

One of the extra benefits with organizing a light exchange was the opportunity to network with environmental groups and other committees in our community who are pro-active in helping to create a culture of conservation in Ontario.

### **Residential Energy Awareness**

Even though we cannot quantify the success of these programs, this is the starting point in terms of customer awareness and the beginning on the road to a conservation culture. As noted above, based on the interaction with customers while manning booths at Home shows and other conservation events, customers are keen on finding ways to conserve energy and to take care of the environment. In addition, we made available other tools such as the Kill a Watt usage meter and home audit work sheets for customers to get started on the road to conservation. We had various bill inserts including promotion of the "Switch to Cold Program". Another project was the Energuide for Houses partnered with REEP (Residential energy efficiently audit program) which saw 60 customers apply to take part in the program by the end of December 2005. Overall we feel our residential awareness activities were very

successful in delivering the conservation message to our customers and we will continue with similar efforts throughout 2006 and 2007.

As noted above, part of the 2006 C.F. light bulb budget is going to be redirected to Residential awareness program. Based on discussions with other LDCs, their EnergyStar rebate programs have been very successful, so we plan to introduce a similar program at Festival Hydro in 2006.

### **General Service Energy Awareness**

Three general service conservation seminars were held in 2005: a presentation by the IESO, a lighting retrofit seminar and a presentation from the OPA. All were well attended (115 attendees) with plenty of interaction between the speakers and our customers. For these seminars, Festival Hydro partnered with industry specialist, such as the IESO, the OPA and a local lighting specialist in order to provide expert information that general service customers require to make proper energy use decisions.

The most successful seminar in terms of translating to true results was the lighting seminar, which has resulted in two larger companies undertaking lighting retrofits and 7 companies with inquiries in to the specialist regarding retrofits. Due to its success, a second lighting seminar will be offered in 2006. Note that Festival Hydro also underwent a lighting retrofit in its service centre in 2005 prior to the seminar (note: none of Festival Hydro's retrofit costs were charged to the CDM budget).

In addition to the expert speakers, visits were made by Festival Hydro personnel to the Interval customers to encourage them to take part in a free service offered by Festival Hydro Inc. which provides web based access to their metering data. This allows these 82 larger customers to monitor their usage, costs consumptions, times of usage, peaks and much more information, at no charge to the customer.

In 2006 and 2007 we plan to continue with our seminar series. In the plans for 2006 is a seminar on variable speed motors and a Dept. of Natural Resources "Dollars to Sense" workshop. We will also be looking at programs for smaller general service customers to take part in. Overall, our general service seminars in 2005 were successful in terms of enhancing energy awareness. We would highly recommend this process as a means to communicate the conservation message to general service customers. Festival Hydro will continue on with this style of seminars in 2006 and 2007.



## 5. CONCLUSION

Section 3 (Discussion of the Programs) provides a fairly detailed summary of each of the CDM programs for 2005. Section 4 provides a detailed description of what we have learned, our plans to continue on with these successes in 2006 and 2007, and recommendations of programs for others to adopt. In conclusion, it is the opinion of Management at Festival Hydro that we have delivered a successful CDM program and will continue ahead with our plans for 2006 and 2007.

In closing, it is our belief that LDCs can effectively deliver conservation and demand side management programs. We have on-going contact with our customers and customers recognize us as being knowledgeable in electrical conservation. One observation in 2005 was the inconsistency of program offerings by the different LDCs. With greater involvement by the OPA and the EDA in 2006 and forward, coordination of programs amongst the LDCs will lead to greater consistency of programs with hopefully the added benefit of lower cost to each LDC.

# Appendix A - Evaluation of the CDM Plan

Festival Hydro Inc EB-2002-0513

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Other 1	Other 2	Other 3	Other 4
<i>Net TRC value (\$):</i>	\$2,870,028	\$2,268,583	-\$3,165				\$604,610				
<i>Benefit to cost ratio:</i>	28.91	15.75	0				13.15				
<i>Number of participants or units delivered:</i>	7196.00	7196	115 participants				4200 kW converted				
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	16667480.48	1674240	0				14993240				
<i>Total in year kWh saved (kWh):</i>	1152177.12	408015	0				744162				
<i>Total peak demand saved (kW):</i>	84.95	0.00	0				85				
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.18%	0.06%	0				0.11%				
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.09%	0.00%	0				0.09%				
<i>Gross in year C&amp;DM expenditures (\$):</i>	\$229,276	\$172,758	\$3,165				\$53,353				
<i>Expenditures per kWh saved (\$/kWh)*:</i>	\$0	\$0.4234	n/a				\$0.0717				
<i>Expenditures per kW saved (\$/kW)**:</i>	\$628	n/a	n/a				\$628				
<i>Utility discount rate (%):</i>	7.25										

\*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:** Water Heater Load Control Program

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

Intent - Through the use of the water heater load control system, Festival Hydro can assist in the reduction of peak demand by shifting the use of electricity from on-peak to off-peak periods. Design - Festival Hydro, previous to market opening, operated a load control system which controlled approx. 1,200 water heaters. This same system was reimplemented in mid 2005 along with hardware and software upgrades to meet future control capabilities. In addition, approx. 270 new installations occurred during the year. Delivery - At the commencement of the program, Festival Hydro contacted all the customers who had existing control devices on their water heaters to see if they wanted to continue to participate. Of the original 1,200 customers, only 18 customers requested they be removed. In order to attract more customers to the program, we did a separate flyer delivered to each home in our territory and we included a message on the monthly bills regarding the load control program. The enticement to join was the \$3.50 monthly credit being applied to the monthly bill. Festival Hydro also received good publicity through an article in the local newspaper

about the load control program, with many signing up as a result of seeing the article in the paper. Partnerships - Festival Hydro is working with a group of other LDCs on LCR implementation issues, particularly on the issue of future compensation (post 2007) for operating the program. Evaluation - This has been a very successful project to date. Customers take part in conservation with minimal impact on their lifestyle. It has successfully assisted in reducing the provincial peak particularly on day's of high usage.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	No control devices		
Efficient technology:	Water heater control devices		
Number of participants or units delivered:	1472		
Measure life (years):	12		

B. **TRC Results:**

TRC Benefits (\$):	\$ 2,324,964.00
TRC Costs (\$):	
Utility program cost (less incentives):	\$ 105,120.00
Participant cost:	
<b>Total TRC costs:</b>	<b>\$ 105,120.00</b>
<b>Net TRC (in year CDN \$):</b>	<b>\$ 2,219,844.00</b>
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	<b>\$ 22.12</b>

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)	4257
Energy shifted On-peak to Mid-peak (kWh):	377784
Energy shifted On-peak to Off-peak (kWh):	1008126
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 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):	
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**D. Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	\$ 98,897.00
	Incremental O&M:	\$ 1,647.00
	Incentive:	\$ 16,483.00
	Total:	\$ 117,027.00
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	
	Total:	
Participant costs (\$):	Incremental equipment:	
	Incremental O&M:	
	Total:	

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**E. Comments:**

The biggest concern with this initiative is funding this program when the CDM budget comes to an end in September 2007. There is currently no mechanism to fully recover the costs associated with installing and maintaining the equipment and to provide the financial incentive to the customers.

\*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:** Voltage Conversions

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

Intent - To reduce line losses in order to minimize the loss of electricity and conserve energy. Also, to reduce electrical costs for customers due to lower line losses. Design - Festival Hydro has been working aggressively over the past decade to reduce system losses by converting existing 4kV distribution to higher voltages. These conversions are taking place as the infrastructure reaches "end of life" status. A number of conversion projects have been planned for 2005 through to 2007. Delivery - Festival Hydro completes its own capital work, with an emphasis on converting 4 kV to higher voltages as infrastructure is replaced. Evaluation - Festival Hydro successfully completed all the 4 kV conversion work planned for 2005. The savings in system losses are calculated based on the amount of load converted to the higher voltage. Line losses are reduced by approx. 70% due to the conversions. The incremental costs (based on previous projects, estimated to be at 5% of the total project costs) are considered to be conservation assets. The remaining 95% of the costs is treated as normal infrastructure capital.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	distribution using 4 kV		
Efficient technology:	distribution using 27 kV		
Number of participants or units delivered:	4200 kW converted		
Measure life (years):	20		

B. **TRC Results:**

TRC Benefits (\$):	\$ 654,356.38
TRC Costs (\$):	
Utility program cost (less incentives):	\$ 49,746.39
Participant cost:	
Total TRC costs:	\$ 49,746.39
<b>Net TRC (in year CDN \$):</b>	<b>\$ 604,609.99</b>
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ 13.15

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):	

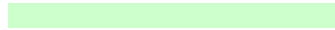
**Demand Response Programs:**

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

**Power Factor Correction Programs:**

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

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



**Line Loss Reduction Programs:**

Peak load savings (kW):		84.95
	<i>lifecycle</i>	<i>in year</i>
Energy savings (kWh):	14993240	744162

**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):	
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D. **Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	\$ 53,353.31
	Incremental O&M:	\$ -
	Incentive:	\$ -
	Total:	\$ 53,353.31
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	
	Total:	
Participant costs (\$):	Incremental equipment:	0
	Incremental O&M:	0
	Total:	

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E. **Comments:**

As a result of pre-2005 conversions, in the 2006 rate model Festival Hydro was able to apply for a reduction in its secondary line losses from 3.31% to 2.85%. With additional conversions, we should be able to achieve further reductions for our customers.

\*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:** Compact Fluorescent Light Bulbs

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

Intent - Encourage customers to replace incandescent bulbs with C.F.L. bulbs to promote energy conservation. Design - Festival Hydro purchased 4,000 light bulbs to distribute within its service territory. These quantities are sufficient to cover only approx 25% of our residential base, so it was decided to distribute approx 1,000 at the Stratford Home show, to deliver light bulbs to all customers in the towns of Brussels (579), Hensall (539) Zurich (445) and Dashwood (235), to distribute 800 in the town of St. Marys (approx 25% of customers) and 400 in Seaforth (approx. 25% of customers). Delivery - Within the City of Stratford, there were 798 light bulbs distributed on the weekend of the Home Show (in April 2005). A database was maintained to ensure only one bulb was given to each customer and to limit distribution of bulbs to only Festival Hydro customers. During the summer of 2005, a student was hired to deliver one light bulb per residential customer in the towns of Brussels, Dashwood, Hensall and Zurich. A total of 1,798 light bulbs were delivered. In the fall a booth was set up at St. Marys town hall and approx. 400 lights distributed to residential customers.

Partnerships - In St. Marys, the St. Marys Green Committee assisted with the distribution. The remainder were distributed by a summer student in the smaller towns and regular staff at the Stratford Home Show. Evaluation - A telephone survey conducted in late summer after completion of the program indicated that for the most part, customers had put the free light bulbs to use and many customers indicated they planned replace more on their own.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent light bulbs		
Efficient technology:	C.F. light bulb		
Number of participants or units delivered:	3504		
Measure life (years):	5		

B. **TRC Results:**

TRC Benefits (\$):		\$ 86,346.63
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 14,160.73
	Participant cost:	
	Total TRC costs:	\$ 14,160.73
<b>Net TRC (in year CDN \$):</b>		<b>\$ 72,185.90</b>
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$ 6.10

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

**Conservation Programs:**

Demand savings (kW):	Summer	
	Winter	
	lifecycle	in year
Energy saved (kWh):	1463340.48	365835.12
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 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):	
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D. **Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	1,799.00
	Incentive:	\$	13,389.00
	Total:	\$	15,188.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		

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E. **Comments:**

This was a popular program with real savings. We would highly recommend this program to any LDC.

\*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: LED Seasonal Light Exchange

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

Intent - To encourage customers to replace their conventional seasonal lights with LED seasonal lights in order to conserve energy.

Design - In the original plan, Festival Hydro had planned to give a \$5 coupon off per set of LED lights purchased at a local retailer in exchange for dropping off a set of conventional lights. Due to the administrative work associated with coupons, Festival decided instead to purchase the LED lights and to set up three distribution centres within our service territory. In addition, Festival had planned to spend one half of the LED budget in 2005 (\$13,462) and the other half in 2006 (\$13,462). We expected this would be a popular program, so we decided to spend the full budget in 2005 and purchased approx. 2,220 sets to distribute rather than distributing 1,100 in each year.

Delivery - One set of LED lights were given in exchange for one set of old conventional lights with a maximum of two per family. Festival Hydro set up three separate locations on three separate days located at our main office in Stratford, at the St. Marys Town Hall and at our service centre in Seaforth. Advertising was placed in the local newspapers and on the local radio station.

A computer program was designed so that when we gave the new lights in exchange for the old, we recorded who the customer was. This way we didn't have customers go through the line more than once or go to multiple locations. At all three locations the lights were gone in less than 2 hours. Partnerships - On the day of the distribution in Stratford, Festival Hydro had assistance from a local high school environmental (CARE) group and the City of Stratford Energy & Environment Committee. In St. Marys, the St. Marys Green Committee also helped with LED light distribution. Evaluation - The LED program was successful with all lights being distributed in less than a two hours. The TRC indicates a negative return, however the model uses a 5 year measurement life when in fact they will probably be in use for 8 to 10 years. Festival Hydro would recommend other LDCs undertake the same program.

Measures):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	set of conventional lights		
Efficient technology:	set of LED lights		
Number of participants or units delivered:	2220		
Measure life (years):	5		

B. TRC Results:

TRC Benefits (\$):	\$	11,042.87
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 24,870.00
	Participant cost:	\$ -
	Total TRC costs:	\$ 24,870.00
Net TRC (in year CDN \$):	-\$	13,827.13
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$	0.44

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	lifecycle	in year
Energy saved (kWh):	210900	42180
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 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):	
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**D. Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	49.00
	Incentive:	\$	26,624.00
	Total:	\$	26,673.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		

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**E. Comments:**

This was an extremely popular program. All lights were distributed in less than a few hours. By requiring customers to hand in the old conventional lights, Festival Hydro was able to ensure that the old lights were no longer in use. We would highly recommend this program to any LDC.

\*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:** Residential Energy Awareness

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

Intent - To make residential customers aware of the need to conserve electricity; to encourage residential customers to change their lifestyles to use less electricity; and to encourage replacement of existing products with more energy efficient products. Design - All programs were designed to promote awareness, primarily by interacting in person with our customers and through the distribution of free information and literature at events. Delivery: The following are the various initiatives undertaken under the residential awareness program: 1. Participated in the Stratford Home Show - this involved distributing approx. 800 free light bulbs, distributing conservation materials, flyers and free pencils with four conservation messages. It also included a light display of energy used by an incandescent vs. a C.F. light bulb, and a display of various styles of C.F. lights available. A free draw was also held for a basket of conservation goodies (shower head, weather-stripping, light bulb and other small items). It was an excellent opportunity to interact with customers regarding conservation. 2. Earth Day Symposium - Manned a booth with conservation material at the local earth day symposium. This allowed Festival Hydro to interact with customers and to network with other groups committed to conservation and the environment. 3. Back In Black - Festival Hydro manned a booth with conservation materials and flyers at the Back In Black community event held by the City of Stratford Energy & Environment Committee on Aug 15, 2005 (2 year anniversary of black out). During the hours of Back in Black, approx. 77,000 kWhs were saved, enough to power 50 homes for a month. 4. Kill -A-Watt meter - Festival Hydro purchased and made available to customers to use a Kill a Watt Meter to give customers a hands-on tool to measure usage by electric. Twenty-four customers (24) used it in 2005. 5. Energy Savings Package - For the towns of Dashwood, Brussels, Hensall and Zurich, Festival Hydro delivered one free C.F. light bulb in a package which contained a home audit worksheet, appliance energy usage chart and other conservation materials. 6. Bill inserts - Festival Hydro's bill inserts include a monthly conservation tip. We also participated in the "Switch to Cold" program through our billing process. 7. Local media promotion - Radio ads were ran to promote the LED light exchange and included conservation messages. 8. Festival Hydro partnered with REEP a local organization to deliver the Energuide for Houses Services in conjunction with the Office of Energy Efficiency. Festival offered a \$25 discount on the costs of the energy assessment, and \$200 to the first twenty electrical heat customers. To December 31, 2005, 60 customers had participated. Partnerships - Festival Hydro partnered with a number of conservation oriented groups such as the City of Stratford Energy and Environment committee, REEP, the high school CARE group, and the St. Marys Green Committee. Evaluations - It is difficult to quantify the actual kWh savings. Education is the first step in the conservation process. Customers have to first appreciate the need to conserve and then they will move forward. This was evident by the involvement in the REEP Home audit program as customers are starting to recognize the benefits of investing to save both money and electricity. Overall, we felt the various initiatives undertaken under Residential Energy Awareness were highly successful. We will plan similar involvements in 2006 and 2007.

**Measure(s):**

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

B. **TRC Results:**

TRC Benefits (\$):	
TRC Costs (\$):	
Utility program cost (less incentives):	\$ 9,620.00
Participant cost:	
<b>Total TRC costs:</b>	<b>\$ 9,620.00</b>
<b>Net TRC (in year CDN \$):</b>	<b>-\$ 9,620.00</b>
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$ -

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 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):	
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D. **Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	\$	-
	Incremental O&M:	\$	9,620.00
	Incentive:	\$	4,250.00
	Total:	\$	13,870.00
Utility indirect costs (\$):	Incremental capital:		
	Incremental O&M:		
	Total:		
Participant costs (\$):	Incremental equipment:		
	Incremental O&M:		
	Total:		

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E. **Comments:**

Awareness is the necessary first step on the road to conservation. We felt we were successful in getting that message out. Interaction with customers is key to the process.

\*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:** General Service Energy Awareness

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

Intent - To pursue programs to educate our general service customers on energy efficiency opportunities so they can make better decisions on their energy use and take steps to conserve. Design - Festival Hydro held three energy information breakfast seminars in 2005. The breakfast format allows an opportunity for customers to network and to share ideas previous to the presentation. The presentations are held to approximately one hour, including time for questions and answers at the end. The seminars are kept short (approx. 2 hrs) because if they were longer we would have a hard time attracting local business representatives. The seminars held in 2005 included: The IESO, a Rep. who spoke about the spot market in Ontario and conservation in general; The Ontario Power Authority, a Rep. who spoke about conservation for commercial and industrial operations; and a lighting specialist, who spoke about the savings that can result from lighting retrofits. Delivery - In advance of the seminars, Festival Hydro would fax or mail an invitation to the general service customers. Customers had to reply due to the costs of the breakfast involved. The presenters used power

point presentations, product displays and handouts as part of their presentations. At the end of each sessions, there was a question and answer period. Additional individual questions were answered by all presenters after the seminars were complete. In addition to the seminars, Festival Hydro has visited the large interval customers to promote the use of a web based product which shows the customer their metering data. It allows them to monitor their usage, costs, time of usage, peaks, create a draft monthly invoice and much more, all provided free of charge by Festival Hydro. Partnerships- As noted above, we are inviting energy efficiency specialist to speak who can provide the expert information required for these customers. In terms of the web based usage data provided to interval customers, that is all part of the package provided by our settlement supplier, Utilismart. Evaluation - The lighting seminar resulted in the greatest response, with two industrial customers already completing lighting retrofits, two are receiving estimates and another seven with inquiries. Note that Festival Hydro also did a lighting retrofit in its service center prior to the seminar. In 2006,

Festival Hydro plans to hold the lighting seminar once again, because many who were invited couldn't attend. The other two seminars (IESO and OPA) were very informative and provided good ground work for future general service initiatives.

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	3 seminars held		
Number of participants or units delivered:	115 participants		
Measure life (years):			

B. **TRC Results:**

TRC Benefits (\$):	
TRC Costs (\$):	
Utility program cost (less incentives):	\$ 3,165.00
Participant cost:	
<b>Total TRC costs:</b>	<b>\$ 3,165.00</b>
<b>Net TRC (in year CDN \$):</b>	<b>-\$ 3,165.00</b>
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	

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 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):	
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**D. Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	
	Incremental O&M:	\$ 3,165.00
	Incentive:	
	Total:	\$ 3,165.00
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	
	Total:	
Participant costs (\$):	Incremental equipment:	
	Incremental O&M:	
	Total:	

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**E. Comments:**

Overall, the general service seminars were successful in terms of delivering expert conservation advise to the general service customer.

\*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:**

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

**Measure(s):**

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Efficient technology:	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Number of participants or units delivered:	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Measure life (years):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

B. **TRC Results:**

TRC Benefits (\$):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
TRC Costs (\$):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Utility program cost (less incentives):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Participant cost:	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Total TRC costs:	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
<b>Net TRC (in year CDN \$):</b>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
<b>Benefit to Cost Ratio (TRC Benefits/TRC Costs):</b>	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

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

**Conservation Programs:**

Demand savings (kW):	Summer	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
	Winter	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
	lifecycle	in year
Energy saved (kWh):		<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Other resources saved :		<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Natural Gas (m3):		<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Other (specify):		<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

**Demand Management Programs:**

Controlled load (kW)	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Energy shifted On-peak to Mid-peak (kWh):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Energy shifted On-peak to Off-peak (kWh):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Energy shifted Mid-peak to Off-peak (kWh):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

**Demand Response Programs:**

Dispatchable load (kW):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Peak hours dispatched in year (hours):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

**Power Factor Correction Programs:**

Amount of KVar installed (KVar):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Distribution system power factor at beginning of year (%):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>
Distribution system power factor at end of year (%):	<span style="background-color: #e0ffe0; display: inline-block; width: 100%; height: 15px;"></span>

**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):	
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D. **Program Costs\*:**

Utility direct costs (\$):	Incremental capital:	
	Incremental O&M:	
	Incentive:	
	Total:	
Utility indirect costs (\$):	Incremental capital:	
	Incremental O&M:	
	Total:	
Participant costs (\$):	Incremental equipment:	
	Incremental O&M:	
	Total:	

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E. **Comments:**

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