

Erie Thames Powerlines

Conservation and Demand Annual Report

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www.eriethamespower.com

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INTRODUCTION

From the outset, Erie Thames Powerlines (Erie Thames) Conservation and Demand Management (CDM) strategy has been to educate, encourage, equip and empower customers through various CDM initiatives. Erie Thames is "Your Home Town Utility" to approximately 14,000 customers, in 11 communities, across 7 municipalities. Programs were delivered in multiple communities as to engage as many customers as possible. Local partners from community groups to suppliers were engaged to ensure that Erie Thames continued to deliver the home town utility service that has delivered and is expected.

Educate

Customers need to be informed and educated on conservation and demand management. Therefore it all starts with breaking down the information barriers by providing customers with the information they need. The communication needs to be consistent with conservation messages coming from the government, the Ontario Power Authority, other Local Distribution Companies (LDC's), etc. First and foremost, the information needs to be useful to the customers; second, the conservation initiatives need to be easily implemented at low or no cost to the customer; and third, the initiatives it must deliver realizable results. In addition, this education process provides customers with necessary information to make educated decisions with respect to buying new light bulbs, appliances, equipment etc. or implementing new processes and procedures.

Encourage

Education alone is not enough to create a conservation culture as customers need more than a brochure, they need something real that they can install and see makes a difference. Giveaways, exchanges and incentives are all mechanisms to encourage customers to evaluate an energy efficient technology and/or process with the underlying objective that customers use the technology/implement the process; observe the results first hand; and then adopt the technology and/or the process and install additional technologies or further implement the process.

Equip

Education and encouragement still do not provide the complete package required for a successful conservation and demand management program. Customers need tools that communicate and illustrate energy consumption and cost information to provide them with the knowledge of what they use and how much this energy costs. The next step is to illustrate the relationship between consumption and cost, thereby providing the customer with an easily

comprehensible link between. This is crucial especially to the small users as they generally do not understand what a kilowatt hour represents, but certainly understand what a dollar spent represents. The tools then allow customers with the means to easily and effectively measure changes to their life styles and/or implement energy efficient appliances and equipment.

Empower

Through ***Education, Encouragement*** and ***Equipment***, Erie Thames is ***Empowering*** customers with the information, the incentives and the tools to make educated decisions, purchases and evaluate their effectiveness. This empowerment will in turn drive the conservation culture movement.

CDM programs delivered to date focus on educating, encouraging and equipping customers, thereby empowering them. Examples of programs include a Conservation Awareness Advertising Campaign that ran in 4 local news papers which educated and informed residential, small commercial and industrial customers; an LED Christmas Light Exchange which encouraged residential customers to evaluate the new technology; and LED Traffic Light Retrofit Incentive Program which encouraged, through incentives, municipal customers to evaluate the technology and retrofit additional intersections given favorable results. Additional programs that will further educate, encourage and most of all equip customers with the necessary tools to measure the results of actions taken are slated for calendar year 2006.

EVALUATION OF CDM PLAN

The following programs were initiated in 2005:

- LED Christmas Light Exchange (Complete)
- Conservation Awareness Advertising Campaign (Complete)
- LED Traffic Light Retrofit Incentive Program (3 Conversions Complete, Additional Conversions In Progress)
- Large User Energy Avoidance Audit (In Progress)
- CDM Website (In Progress)
- Commercial and Industrial Smart Meter Pilot (In Progress)

Several programs continue to be active while others are still in progress thereby making full evaluation of these programs incomplete at this juncture. Please refer to Appendix A for the complete evaluation of Erie Thames CDM plan as outlined in the in the Guidelines for Annual Reporting of CDM Initiatives.

Overall, given the results of the initiatives completed to date, Erie Thames has reduced annual consumption by 80,140 kWh's at cost of \$0.64 per kWh. Unfortunately, given the initiatives were all based on lighting, which accounts for a small percentage of the overall demand, the demand reduction achieved is relatively small. But as noted in numerous government conservation awareness information sources, every little bit makes a difference and therefore should not be overlooked. As programs in progress complete and new programs delivered, continued savings are anticipated.

DISCUSSION OF PROGRAMS

The following programs were initiated in 2005:

- LED Christmas Light Exchange (Complete)
- Conservation Awareness Advertising Campaign (Complete)
- LED Traffic Light Retrofit Incentive Program (3 Conversions Complete, Additional Conversions In Progress)
- Large User Energy Avoidance Audit (In Progress)
- CDM Website (In Progress)
- Commercial and Industrial Smart Meter Pilot (In Progress)

As noted some programs were initiated and completed while others were initiated and are still in progress. All programs initiated in 2005 will be discussed in this section. Please refer to Appendix B for the Discussion of Programs as outlined in the in the Guidelines for Annual Reporting of CDM Initiatives.

Conservation Tips Advertising Campaign

The first part of Erie Thames CDM strategy is to educate the customer with consistent information. Erie Thames researched the messages being delivered by other LDC's and various government agencies and compiled a list of conservation tips.

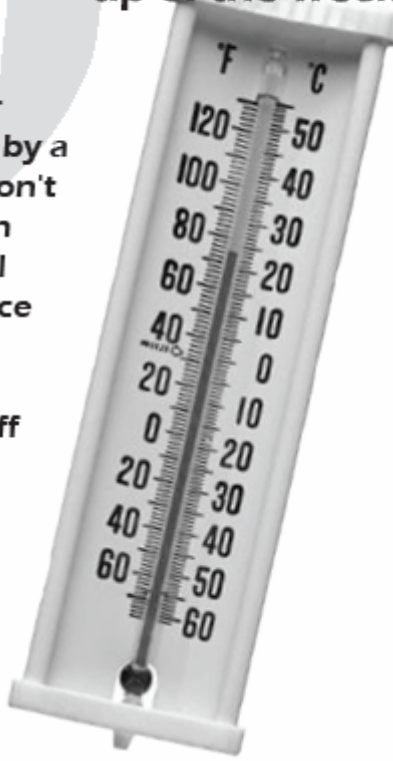
The Conservation Tips Advertising Campaign initiative successfully educated residential, small commercial and industrial customers. The program consisted of a series of 13 different conservation tip advertisements run weekly in four local newspapers; Norwich Gazette, Tavistock Gazette, Ingersoll Times, and Aylmer Express. The objective of the program was to promote easy to implement, low cost or no cost initiatives that deliver quantitative results to the customer and Erie Thames. The advertisements were designed in such a manner that they could easily be cut from the paper and posted on a fridge or notice board for the entire family or a team of employees to view, learn from and implement. An example of a conservation tip advertisement is illustrated in exhibit 1.

Exhibit 1

Erie Thames'
CONSERVATION
tip of the week

Raise air conditioner temperature setting by a few degrees - you won't notice a difference in comfort, but you will notice a big difference on energy bills.

Remember to turn off your air conditioner while you are away



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For a complete listing of the conservation tip messages and the corresponding week the tip was run, please refer to table 1.

Although metrics to measure the effectiveness of the advertising campaign are extremely difficult to define and even more difficult to quantify, the program was an essential component of the conservation plan, as without proper education and information customers do not have the necessary coaching to make informed decisions and effectively evaluate conservation technologies.

Table 1 – Conservation Tip Advertisements

Week	Conservation Tip
June 20 – 24	Studies show that clothes rinsed in cold water come out just as clean as those rinsed in warm, so go cold! You'll save money on your water-heating bill.
June 27 – July 1	Energy is wasted in an ordinary light bulb, which converts only about 2% of the electrical energy into light. The other 98% is wasted as heat. Turn off all unnecessary lights in your home.
July 4 – July 8	Raise air conditioner temperature settings by a few degrees – you won't notice a difference in comfort, but you'll notice a big difference on energy bills. Remember to turn off your air conditioner when you're away.
July 11 – July 15	Be Energy efficient when it comes to drying your clothes – avoid overloading, and remember that drying one full load takes less energy than drying two small loads. Even better, if you have one, put your clothes out on the line.
July 18 – July 22	When using the stove, be sure to put lids on pots in order to keep the heat in the pot, which enables you to use lower heat settings!
July 25 – July 29	Did You Know? One kilowatt hour is the amount of electricity required to keep a 100-watt bulb lit for ten hours. The average Ontario house-hold uses about 1,000 kilowatt hours of electricity per month.
Aug 1 – Aug 5	Put your home entertainment systems on a power bar and turn off the bar when you are not using them. (Components without clocks and timers, of course.). Unplug infrequently used TVs, as many continue to draw power even when turned off.
Aug 8 – Aug 12	Before leaving for the holidays remember to unplug all electrical equipment, televisions, DVD players, VCR's etc; turn off the air conditioning; to put your lights on a timer.
Aug 15 – Aug 19	Some people rinse their dishes in the sink before putting them in the dishwasher. Don't bother! You'll save more water – and energy – by scraping all excess food off plates and cutlery. Your dishwasher will do the rest.
Aug 22 – Aug 26	If you have a freezer or second refrigerator that is nearly empty, turn it off. Use second appliances only when necessary, or have them removed. In fact, an old refrigerator could cost \$125.00 or more a year to operate. The temperature of your freezer should be at -18°C.
Aug 29 – Sept 2	Transportation is a big energy user. Before hopping in a car, consider walking or cycling. Walking is good for your health, uses no fuel, and produces no emissions.
Sept 5 – Sept 9	After a bath or doing dishes, let the hot water sit for a while to heat the room.
Sept 12 – Sept 16	Use an electric kettle, which uses half the energy required to heat water on a stove.

LED Christmas Light Exchange

The LED Christmas Light Exchange program is one of several programs Erie Thames deployed to encourage customers to implement energy efficient technologies. The initiative consisted of exchanging 500 strings of LED Christmas lights in three communities; the Town of Ingersoll, the Town of Aylmer and the Village of Port Stanley.

Erie Thames partnered with each community to ensure the program was not only supported by the community but delivered during existing local community events as to ensure maximum exposure and customer participation. In addition, Erie Thames approached the local Home Hardware store for the purchase of the LED Christmas Lights, who generously supplied the lights at a discounted rate. In return, Erie Thames ensured that participants were made aware of where the lights were purchased and where they could purchase additional sets.

A detailed summary of the three LED Christmas Light Exchanges please refer to table 2.

Table 2 – LED Christmas Light Exchange Event Summary	
Event	Details
Ingersoll Lighting of the Lights	<ul style="list-style-type: none"> • Set up a branded tent decorated with LED Christmas lights • Handed out free freshly popped pop corn, warm apple cider, conservation tips book marks and glow bracelets • Exchanged one set of LED Christmas lights for an old set of either mini incandescent lights or 5-watt C7 lights (preferred) • Each set of lights was clearly labeled with a conservation sticker
Aylmer Lighting of the Lights	<ul style="list-style-type: none"> • Set up a branded tent decorated with LED Christmas lights • Handed out free freshly popped pop corn, warm apple cider, conservation tips book marks and glow bracelets • Exchanged one set of LED Christmas lights for an old set of either mini incandescent lights or 5-watt C7 lights (preferred) • Each set of lights was clearly labeled with a conservation sticker
Port Stanley Christmas Parade	<ul style="list-style-type: none"> • Decorated multiple utility branded vehicles with LED Christmas lights • Exchanged one set of LED Christmas lights for an old set of either mini incandescent lights or 5-watt C7 lights (preferred) right from the back of the vehicles during the parade • Each set of lights was clearly labeled with a conservation sticker

The support from the community and the feedback from the customers that participated in the events was extremely positive and invaluable and proved the initiative to be a success regardless of the outcome of the Total Resource Cost test (TRC). The Net Present Value (NPV) of the TRC test equated to \$5,891.79 and a benefit to cost ratio of 2.62.

The energy savings achieved by exchanging and removing the 500 strings of old incandescent Christmas lights from operation results in an annual savings of 9,500 kWh's at a cost of \$0.58 per kWh. Over the lifecycle of the LED Christmas lights the program equates to a savings of 190,000 kWh's. As lighting does not account for substantial demand, the amount of peak demand reduced by the program is relatively low at 0.003 kW.

LED Traffic Light Retrofit Program (In Progress)

The LED Traffic Light Retrofit program is another program that has been developed to encourage customers, in this case municipalities, counties, etc. to move to energy efficient technologies. In order to promote the program, Erie Thames prepared two business cases, one based on the energy savings alone and the other based on the combined energy and maintenance savings. When calculated out, the payback periods are 6 years when energy savings is taken into account and 2.4 years when energy and maintenance savings are utilized. Given the favorable payback period for program and the average cost of the retrofits falling between \$3,000 and \$5,000, Erie Thames decided that a \$1,500 incentive for a full traffic light retrofit was an adequate incentive. In addition, the \$1,500 incentive would allow more retrofits when compared to funding the entire project cost. Erie Thames provided incentive for three LED Traffic Retrofits in 2005.

Upon completion of the first retrofit project and one month of data was available, the savings were obvious. Given the data to date, for one retrofitted intersection the average monthly consumption has decreased by 750 kWh's or 78% resulting in a savings of just under \$40 which equates to an annual savings of 9,000 kWh's and \$480. In total, the program has delivered an annual savings of 70,640 kWh's and will deliver an energy savings of 423,840 kWh's over the 6 year life span of the technology.

Given the payback period and immediate energy savings an additional ten traffic signal retrofits are planned over the next two years. In addition, the savings and payback has promoted one customer to solicit traffic light retrofit incentives from other LDC's in which they have intersections.

Large User Electrical Demand Avoidance Audit (In Progress)

The large user energy audit program was designed to assist Erie Thames largest consumer of electricity, Cami Automotive, in reducing consumption and demand. Given the success of Cami's current product line and the announcements that further products were slated for the facility, Cami was interest in the program but hesitant at the same time. Cami's caution was due to the fact that several audits had been performed in the past with little or nothing to show. In addition, the cost of electricity accounts for approximately 2% of the cost of goods sold and therefore a reduction in costs does not have as much an affect on the bottom line in comparison to a reduction in labour costs.

In an attempt to quell the hesitant mind-set of Cami and ensure that they were comfortable with the audit, the process and the final results, Erie Thames approached the situation from the outset with the intent of having Cami make a majority of the decisions from selecting the audit group to deciding the direction of the project.

Erie Thames presented Cami with several audit groups, all of which presented their skills, experience and areas that they felt Cami would benefit most from an audit. Cami selected the group of MVA Engineering Group and Hardie Industrial Services and the areas selected for evaluation included motors, fluid systems and compressed air. The audit group was also going to look into areas such as cogeneration, peak shaving utilizing a back up generator and lighting as well as process improvements in the HVAC, water management and air handling systems.

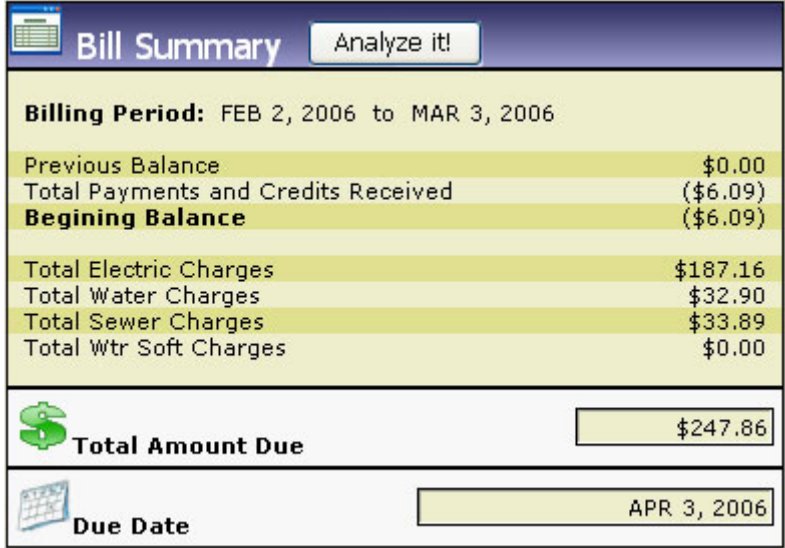
Due to the overwhelming success of Cami's current product and the addition of new products, internal resources have been unavailable, which has slowed progress somewhat. Full results from the audit and projects initiated as a result of the audit will be reported in subsequent CDM plan reviews.

CDM Website (In Progress)

Erie Thames, early in the CDM planning process, identified that customers need to quickly, easily and effectively view their energy data and evaluate energy conservation activities and technologies. The evaluation tool is the final piece in empowering customers to take charge of their energy consumption and costs.

The website development was initiated in 2005 with Erie Thames Customer Information systems (CIS) vendor, Harris Computer Systems. The website will be seamlessly incorporated into the current Erie Thames eCare (electronic customer web portal) site thereby providing data directly from the CIS system. Evaluation of the program will be based on hits to the web site and results of a user survey.

The website consists of various modules with a detailed description of the modules in table 3.

Table 3 – Website Module Description															
Module	Description														
Bill Summary	Provides a brief summary of a customers current bill														
 <p>The screenshot displays a 'Bill Summary' interface. At the top, it says 'Bill Summary' with an 'Analyze it!' button. The 'Billing Period' is 'FEB 2, 2006 to MAR 3, 2006'. Below this is a table of charges:</p> <table border="1"> <tr> <td>Previous Balance</td> <td>\$0.00</td> </tr> <tr> <td>Total Payments and Credits Received</td> <td>(\$6.09)</td> </tr> <tr> <td>Beginning Balance</td> <td>(\$6.09)</td> </tr> <tr> <td>Total Electric Charges</td> <td>\$187.16</td> </tr> <tr> <td>Total Water Charges</td> <td>\$32.90</td> </tr> <tr> <td>Total Sewer Charges</td> <td>\$33.89</td> </tr> <tr> <td>Total Wtr Soft Charges</td> <td>\$0.00</td> </tr> </table> <p>At the bottom, a green dollar sign icon is next to 'Total Amount Due' with a text box containing '\$247.86'. Below that, a calendar icon is next to 'Due Date' with a text box containing 'APR 3, 2006'.</p>		Previous Balance	\$0.00	Total Payments and Credits Received	(\$6.09)	Beginning Balance	(\$6.09)	Total Electric Charges	\$187.16	Total Water Charges	\$32.90	Total Sewer Charges	\$33.89	Total Wtr Soft Charges	\$0.00
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Total Sewer Charges	\$33.89														
Total Wtr Soft Charges	\$0.00														

Bill Analyzer

Provides a more detailed analysis of the current invoice as well as the ability to compare the current bill to a previous bill (up to three years of billing history held in system). Also adds degree days to the analyzer to illustrate the effects of temperature on heating and cooling costs.

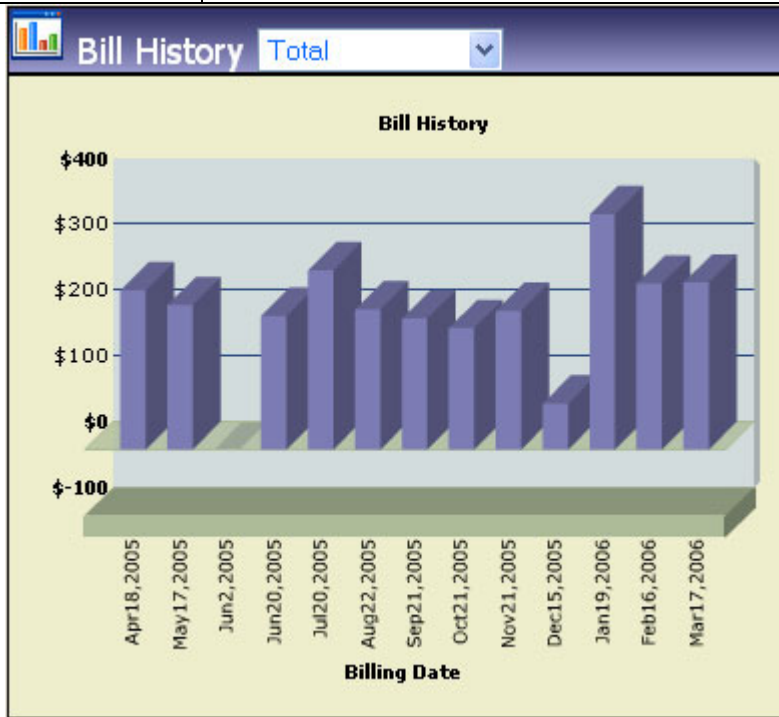
Compare to Bill : February 16, 2006

Description	Comparison	Current Bill	Variance	Comment
Bill Date	Feb 16, 2006	Mar 17, 2006		
Due Date	Mar 6, 2006	Apr 3, 2006		
Reading From	Jan 5, 2006	Feb 2, 2006		
Reading to	Feb 2, 2006	Mar 3, 2006		
No. of Days	28	29	1	More Days on Current Bill.
Heating Degree Days	486	607	121	More Heating Degree Days on Current Bill.
Cooling Degree Days	0	0	0	Same Cooling Degree Days on Current Bill

Current Bill:					Comparison Bill:				
YOUR ELECTRICITY CHARGES:					YOUR ELECTRICITY CHARGES:				
Electricity					Electricity				
Winter - Block 1	927	967.00	0.050000	48.35	Winter - Block 1	894	933.00	0.050000	46.65
Winter - Block 2	831	867.12	0.058000	50.30	Winter - Block 2	824	859.39	0.058000	49.85
Delivery				52.10	Delivery				51.15
Regulatory Charges				11.63	Regulatory Charges				11.36
Debt Retirement Charge				12.31	Debt Retirement Charge				12.03
Overdue Interest Charge				0.41	Overdue Interest Charge				2.87
YOUR WATER/SEWER CHARGES:					YOUR WATER/SEWER CHARGES:				
Water Charges				27.82	Water Charges				27.82
Sewer Charges				32.55	Sewer Charges				32.55
County Wastewater System Prog	1.25				County Wastewater System Prog	1.25			
County Upgrade Program				5.00	County Upgrade Program				5.00
GST# R863719498				12.23	GST# R863719498				11.97
Total Amount:				247.86	Total Amount:				443.91

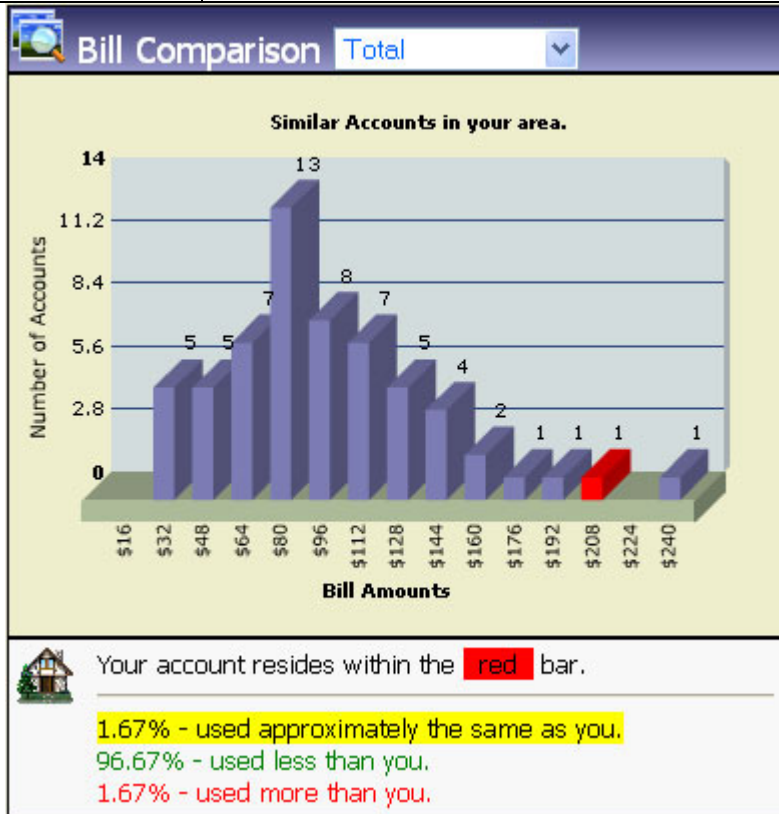
Bill History

Bar graph of energy costs or usage (user can toggle using a radial button) by month for the current and previous 12 months. Able to filter costs by utility such as water, sewer, electricity, etc.




Bill Comparison

The bar graph illustrates how a customer's usage compares to other customers like them. The graph can be configured to include all utility costs (electric, water and sewer) or just electric, or just water or just sewer. Valuable for customers benchmarking themselves against others.

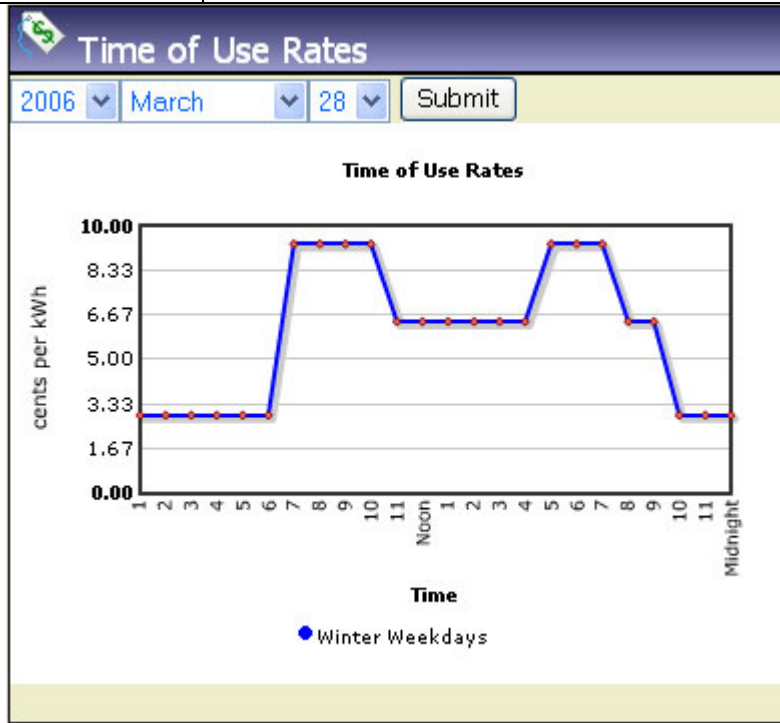


<p>How You Use Energy</p>	<p>Pie graph breakdown of energy costs based on heating/cooling, fridge/freezer, laundry, lighting, water heating. Customers can completely configure the system based on the equipment, appliances and processes they have in their residence or facility.</p>
<div style="border: 1px solid black; padding: 10px;"> <div style="background-color: #4a5568; color: white; padding: 5px; display: flex; align-items: center;"> How you Use Energy </div> <div style="padding: 10px;"> <p style="text-align: center; font-weight: bold; font-size: 0.9em;">How you use energy.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-left: 20px;"> <ul style="list-style-type: none"> Heating/Cooling Laundry Lighting Water Heating Other Fridge/Freezer </div> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; display: flex; align-items: flex-start;"> <div style="width: 20px; height: 20px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px; display: flex; align-items: center; justify-content: center;"> </div> <div> <p style="font-size: 0.8em;">This Breakdown is based on the appliance details that you have provided in your Energy Profile. To keep your profile up to date follow the link and update it.</p> <p style="font-weight: bold; color: #4a5568; font-size: 0.9em;">Your Home Energy Profile.</p> </div> </div> </div>	

<p>Ways to Save</p>	<p>Notice board that allows Erie Thames the opportunity to communicate a variety of messages to the customer such as conservation programs, initiatives, conservation tips, etc.</p>
<div style="border: 1px solid black; padding: 10px;"> <div style="background-color: #4a69bd; color: white; padding: 5px;"> Ways to save</div> <div style="background-color: #4a69bd; color: white; padding: 5px;">Heating & Cooling</div> <div style="background-color: #fff9c4; padding: 5px;"> <ul style="list-style-type: none"> Install a programmable thermostat with a built-in timer. You can set it to lower the heat by a few degrees at night and when you're away! </div> <div style="background-color: #ff9800; color: white; padding: 5px;">Lighting</div> <div style="background-color: #fff9c4; padding: 5px;"> <ul style="list-style-type: none"> Use compact fluorescent light bulbs. They cost more than regular light bulbs (starting at \$5), but can use 75% less electricity and last years longer. One compact fluorescent bulb can save you three times its cost in electricity. For outside lighting, install a motion sensor that turns the lights on automatically when somebody walks by, then turns the lights off automatically after 1 to 5 minutes. </div> <div style="background-color: #fff9c4; padding: 5px;"> <p>Click here for more tips...</p> </div> </div>	

Time of Use Rates

Graphically illustrates the hourly price of electricity in Ontario. Users can look at the price of electricity by hour from the current day all the way back to January 1, 2001. Provides customers with the true cost of electricity information.



Additional tools are being rolled out in 2006 that provide more detailed and specific information for commercial and industrial users such as demand profile, consumption profile, power factor, cost prediction, etc.

Smart Meter Pilot – Commercial and Industrial (In Progress)

With the legislation moving forward with respect to Smart Meters, Erie Thames initiated a Smart Meter commercial and industrial pilot. Several smart Meter technologies were investigated and in the end the SmartSynch cellular technology was selected for a pilot.

To date, site signal strength studies have been completed, sites have been selected based on geographical region, customer interest in the pilot and signal availability and strength and the meters have been ordered. The meters, a combination of Elster A3 's and Itron Sentinels are in high demand with deliver times of up to 16 weeks therefore putting the project in a holding pattern.

Erie Thames has partnered with the Utilismart Corporation who has purchased the requisite software to read the meters and present the corresponding data.

The evaluation of the SmartSynch program will be based on a variety of factors including but not limited to accuracy of meter reads, response time, system functionality, ease of use, installation and initialization, and overall functionality.

In addition, Erie Thames will be installing Smart Meters (interval meters) on all customer facilities that use more than 250,000 kWh's annually, are paying the spot market price and do not already have a Smart Meter installed. This program was deployed in late 2005/early 2006, with meters to be installed in late spring and summer. This program has been rolled out in conjunction with cost prediction and energy management web based tool that has been recently delivered to commercial and industrial customers.

LESSONS LEARNED

Erie Thames learned many lessons while investigating, delivering and comparing CDM initiatives including:

- Measuring Success
- Partnering
- Leveraging Existing Brands
- Analysing Programs
- Review Programs and Re-Evaluate the CDM Plan

Measuring Success

From our experiences, it is apparent that success can be measured quantitatively and qualitatively, and that determining whether a program is successful based solely on quantitative results eliminates mission critical marketing and communication programs which are essential to customer education and the development of the conservation culture. Successful programs are those that engage customers and create points of personal contact, educate customers, encourage customers, create buzz and deliver results.

Partnering

Initiatives have a far better chance of succeeding when they are coupled with existing events in a community, i.e. LED Christmas Light Exchange during the annual Lighting of the Christmas Lights festival. These not only promote great community relations but also increases the exposure, participation and buy in from customers.

Leveraging Existing Brands

Leveraging existing, well known and accepted brands greatly increase customer participation and buy in. Customers will be more apt to participate and implement technologies from names, companies, etc. that they are familiar with and trust. In addition, LDC's also receive the benefits of the marketing and branding efforts put forward by the brand/name owners themselves EnergyStar as well as other LDC's and government agencies.

Deliver Results

Successful programs are programs that deliver the results communicated during the education phase of a conservation program. If results do not materialize,

LDC's run the risk of negatively impacting the program and deterring customers from further implementing energy conservation technologies and measures.

Review Programs and Re-Evaluate the CDM Plan

Programs results need to be evaluated upon completion to:

- Quantify the results of the program to determine its measurable success
- Review the qualitative impact of the program
- Identify weaknesses and faults in the program and where improvements can be made to avoid these encountering them when delivering future programs.
- Identify the key success factors for the program and apply them to future programs.
- Develop follow communication to deliver the results of the programs to customers. If results are successful, they will reinforce the conservation message.

The CDM plan needs to be reviewed to ensure that it evolves as the market to ensure that the program is targeting initiatives that are significant and important to customers.

CONCLUSION

Erie Thames CDM plan has been approached with care and consideration given the dynamic market place, new legislation, emerging technologies and the impact on customers. Given these conditions the CDM plan is in a constant state of flux, evolving with the changing needs of the customer, the demands of the market and the results of internal and external CDM initiatives throughout the industry.

Erie Thames strategy of educating, encouraging, equipping and empowering customers was extremely successful in 2005, with the programs deployed covering the educating and encouraging components of the strategy. Programs with great success, such as the LED Traffic Light Retrofit Incentive program are still active and will continue to be offered. New programs will be deployed in 2006 and 2007 with programs to educate and encourage customers will continue to be initiated, as all components are necessary for a successful strategy.

A new program that has been recently delivered to commercial and industrial customers was a cost predictive model. The model uses day ahead pricing and actual customer historical data to predict the energy cost for the following day. The model was deployed during a recent conservation luncheon where it was well received. In addition to the cost prediction tool, customers were also given full access to a full suite of web based reporting tools that provide a variety of demand, consumption and cost information. The combination of the education, encouragement and equipment will continue to empower customers to become more conservation minded and energy aware.

Erie Thames looks forward to deploying new and successful CDM initiatives that will continue to **Educate, Encourage, Equip** and **Empower** customers to be energy managers and conservation ambassadors.

Appendix A - Evaluation of CDM Plan

Appendix A - Evaluation of the CDM Plan

	Total	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	Municipal	Other 2	Other 3	Other 4
<i>Net TRC value (\$):</i>	\$24,321	\$7,109						\$17,212			
<i>Benefit to cost ratio:</i>	6.72	3.94						2.78			
<i>Number of participants or units delivered:</i>	564	500						64			
<i>Total kWh to be saved over the lifecycle of the plan (kWh):</i>	169,780	28,500						141,280			
<i>Total in year kWh saved (kWh):</i>	80,140	9,500						70,640			
<i>Total peak demand saved (kW):</i>	0.043	0.003						0.040			
<i>Total kWh saved as a percentage of total kWh delivered (%):</i>	0.335%	0.008%						0.327%			
<i>Peak kW saved as a percentage of LDC peak kW load (%):</i>	0.0001%	0.0000%						0.0001%			
<i>Gross in year C&DM expenditures (\$):</i>	\$9,990	\$5,490						\$4,500			
<i>Expenditures per kWh saved (\$/kWh)*:</i>	0.64	0.58						0.06			
<i>Expenditures per kW saved (\$/kW)**:</i>	1,942,370	\$1,829,870						\$112,500			

<i>Utility discount rate (%):</i>	10
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*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 Programs

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** LED Traffic Light Retrofit Incentive Program (In Progress)

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

The intent of the program was to have municipalities, townships, etc. move towards using LED traffic and pedestrian signal lighting in place of the current, inefficient incandescent systems. The program was made available to all communities with traffic signals in Erie Thames Powerlines territory and was designed as an incentive program to stretch the allotted funds and reach as many customers as possible. With the approximate cost of an LED Traffic Light retrofit falling between \$3,000 and \$5,000 (depending on the number of signals) Erie Thames Powerlines (Erie Thames) incentive of \$1,500 per intersection provided enough incentive for the retrofits given the energy savings. To undertake the traffic and pedestrian signal retrofits Erie Thames partnered with Erie Thames Services, a utility service provider.

In 2005 Erie Thames provided an incentive for 3 LED Traffic Light Retrofits conversions that provided immediate and substantial energy savings. For example, one intersection that was fully converted has achieved an average energy decrease of 750 kWh per month resulting in an average monthly savings of \$39.22 which translates into annual savings of 9,000 kWh and \$470.64 and equates to a 6 year pay back period. In addition to the energy savings realized annual maintenance and re-lamping costs are significantly decreased given the extended life span of the LED systems. With the additional savings resulting from the decreased maintenance and re-lamping costs factored into the equation the pay back period on an LED Traffic Light Retrofit sits at a more than respectable level of 2.4 years.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	135 watt incandescent bulb	135 watt incandescent bulb	
Efficient technology:	10 watt LED Bulb	6 watt LED Bulb	
Number of participants or units delivered:	48	16	
Measure life (years):	10	10	

B. **TRC Results:**

TRC Benefits (\$):	\$	26,871.84
TRC Costs (\$):		
	Utility program cost (less incentives):	\$ 4,500.00
	Participant cost:	\$ 5,160.00
	Total TRC costs:	\$ 9,660.00
Net TRC (in year CDN \$):	\$	17,211.84
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	\$	2.78

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

Conservation Programs:

Demand savings (kW):	Summer	0
	Winter	0.04
	lifecycle	in year
Energy saved (kWh):	706,400	70,640
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):

lifecycle in year

Energy savngs (kWh):

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):

Energy generated (kWh):

Peak energy generated (kWh):

Fuel type:

Other Programs (specify):

Metric (specify):

D. **Program Costs*:**

Utility direct costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

Incentive:

\$ 4,500.00

Total:

\$ 4,500.00

Utility indirect costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

Total:

\$ -

Participant costs (\$):

Incremental equipment:

\$ 5,160.00

Incremental O&M:

\$ -

Total:

\$ 5,160.00

E. **Comments:**

This evaluation is based on three LED Traffic Light Retrofits that were completed in 2005. Additional LED Retrofits are planned for 2006 and 2007.

*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 Christmas Light Exchange Program (Complete)

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

The intent of the program was to encourage customers to replace their 5 Watt C7 Christmas lights with new energy efficient LED Christmas lights. To encourage the movement towards LED Christmas Lights, Erie Thames Powerlines (Erie Thames) delivered three separate Christmas light exchanges in three communities; the Town of Ingersoll, the Town of Aylmer and the Village of Port Stanley. For customers to receive a free string of LED Christmas lights they had to bring in an old string of Christmas lights.

Erie Thames partnered with each of the communities to ensure that the programs would gain maximum exposure and be delivered with existing events taking place in each of the communities. For example, the Town of Ingersoll holds an annual "Lighting of the Lights" event in the downtown core where they "Light" the towns Christmas light displays for the holiday season. Erie Thames set up a branded tent alongside the Gazebo where the main ceremonies were held, served free freshly popped pop corn and warm apple cider, handed out glow bracelets and holiday season energy conservation books marks to the children while performing the LED Christmas Light exchange.

Erie Thames approached the local Home Hardware store for the supply of the LED lights as to keep the program as local as possible and was generously given a price break on the lights. Erie Thames promoted the Home Hardware store as a local supplier of LED Christmas lights at all the events.

The program success was evaluated both quantitatively and qualitatively. The LED Christmas Light Exchange programs are quantitatively a success as they do achieve positive results from the individual and program level total resource cost tests. Qualitatively, the customer response, feedback and support from customers and the communities was extremely positive and the program certainly demonstrated that Erie Thames is "You Home Town Utility".

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	5 watt C-7 Christmas Lights		
Efficient technology:	LED Christmas Lights		
Number of participants or units delivered:	500		
Measure life (years):	20		

B. **TRC Results:**

TRC Benefits (\$):		\$	9,523.49
TRC Costs (\$):			
	Utility program cost (less incentives):	\$	3,631.70
	Participant cost:	\$	-
	Total TRC costs:	\$	3,631.70
Net TRC (in year CDN \$):		\$	5,891.79
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		\$	2.62

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

Conservation Programs:

Demand savings (kW):	Summer	0	
	Winter	0.003	
		<i>lifecycle</i>	<i>in year</i>
Energy saved (kWh):		190,000	9,500
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 savngs (kWh):		

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	
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D. **Program Costs*:**

Utility direct costs (\$):	<i>Incremental capital:</i>	\$	950.00
	<i>Incremental O&M:</i>	\$	-
	<i>Incentive:</i>	\$	-
	<i>Total:</i>	\$	950.00
Utility indirect costs (\$):	<i>Incremental capital:</i>	\$	-
	<i>Incremental O&M:</i>	\$	2,681.70
	<i>Total:</i>	\$	2,681.70
Participant costs (\$):	<i>Incremental equipment:</i>	\$	-
	<i>Incremental O&M:</i>	\$	-
	<i>Total:</i>	\$	-

E. **Comments:**

*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:** Larger User Energy Avoidance Audit (In Progress)

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

The intent of the program was to provide assistance to Cami Automotive Erie Thames Powerlines (Erie Thames) largest consumer accounts for 18% of annual consumption and 32% of total demand. Erie Thames earmarked \$15,000 for the project with the balance to be covered by Cami.

As many audits had been performed in the past at Cami resulting in unrealistic solutions and process improvements, therefore Erie Thames selecting audit groups based on their track records of delivering realistic projects with realizable savings. In addition Erie Thames put the decision of selecting an audit team in Cami's hands thereby empowering the customer to select the group they feel will deliver the best finished product.

The project team of MVA Engineering Group and Hardie Industrial Services was selected and Cami identified several areas that they see require attention and they have the ability to work with to reduce energy consumption. The areas include but are not limited to motors, fluid systems, cogeneration, compressed air and peak shaving. The audit group is evaluating processes, internal and external metering data, building layouts, etc. to identify some areas where efficiency can be gained or possible savings exist and focus efforts. The audit group will then tour the facility and identify what systems require further investigation and exploration. The final product will be a report that establishes what initiatives to undertake, the approximate cost for the initiative and the energy savings that will be gained should the initiative be implemented.

Initial investigations show that peak shaving or some form of an on demand generation do exist with the current back up generation system and if a proposed second back up generator were to be purchased further opportunities to save exist.

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

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

Conservation Programs:

Demand savings (kW):		Summer			
		Winter			
		lifecycle		in year	
Energy saved (kWh):					
Other resources saved :					
	Natural Gas (m3):				
	Other (specify):				

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

Amount of KVar installed (KVar):	
Distribution system power factor at 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 savngs (kWh):		

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	
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D. **Program Costs*:**

Utility direct costs (\$):	<i>Incremental capital:</i>	\$	-
	<i>Incremental O&M:</i>	\$	-
	<i>Incentive:</i>	\$	-
	<i>Total:</i>	\$	-
Utility indirect costs (\$):	<i>Incremental capital:</i>	\$	-
	<i>Incremental O&M:</i>	\$	-
	<i>Total:</i>	\$	-
	Participant costs (\$):	<i>Incremental equipment:</i>	\$
<i>Incremental O&M:</i>		\$	-
<i>Total:</i>		\$	-

E. **Comments:**

*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:** Conservation Advertising Campaign (Complete)

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

The intent of the Conservation Tips Local Advertising Campaign was to provide simple, easy to implement, effective conservation tips to as many customers as possible. The program was designed to run for 13 consecutive weeks, commencing the week of June 20th 2005 and running until the week of September 12th, 2005. The advertisements were run in four local news papers; the Aylmer Express, the Ingersoll Times, the Tavistock Gazette and the Norwich Gazette, with a combined circulation of 10,800.

Each weekly advertisement featured a different, inexpensive energy conservation tip that could easily implemented with little and often no cost to the customer. The advertisements were designed in such a manner that they could easily be cut from the paper and posted on a fridge or notice board for the entire family or a team of employees to view, learn from and implement.

A program of this nature is essential and instrumental in communicating the government's conservation message and creating a conservation culture. Unfortunately, these projects standalone are extremely difficult to evaluate as there is no easy way to measure how many customers actually implemented the weekly tips.

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

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

Conservation Programs:

Demand savings (kW):	Summer	0
	Winter	0.003
	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 savngs (kWh):		

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	
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D. **Program Costs*:**

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

E. **Comments:**

Determining a metric in which to measure the effectiveness of an advertising campaign is difficult and therefore a numerical evaluation of the program was not completed. This program will be added to all residential programs as part of indirect costs upon completion of all residential customer programs.

*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:** Commerical and industrial Smart Meter Pilot (In Progress)

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

The intent was to evaluate smart meter technology for commercial and industrial applications. Initially several smart metering technologies were researched and the SmartSynch wireless cellular system was selected for the pilot.

To date, site signal strength studies have been completed, sites have been selected based on geographical region, customer interest in the pilot and signal availability and strength and the meters have been ordered. The meters, a combination of Elster A3 's and Itron Sentinel meters are in high demand with deliver times of up to 16 weeks therefore putting the project in a holding pattern.

Erie Thames has partnered with the Utilismart Corporation who has purchased the requisite software to read the meters and present the corresponding data.

The evaluation of the program will be based on a variety of factors including but not limited to accuracy of meter reads, response time, system functionality, ease of use, installation and initialization, and overall functionality.

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

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	lifecycle	in year
Energy saved (kWh):		
Other resources saved :		
Natural Gas (m3):		
Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):

lifecycle

in year

Energy savngs (kWh):

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):

Energy generated (kWh):

Peak energy generated (kWh):

Fuel type:

Other Programs (specify):

Metric (specify):

D. **Program Costs*:**

Utility direct costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

Incentive:

\$ -

Total:

\$ -

Utility indirect costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

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.

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** CDM Website

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

The intent of the CDM website is to equip customers with the tools necessary to understand their consumption and the costs associated with their consumption and evaluate energy efficient technologies or programs implemented using the website tools. In addition, the website also acts as a communication channel to deliver conservation tips, upcoming programs and the results of completed programs. The website was initiated in the fourth quarter of 2005 and set to launch early in the second quarter 2006. Full evaluation of the website will be included in subsequent reports.

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

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

Conservation Programs:

Demand savings (kW):	Summer	
	Winter	
	lifecycle	in year
Energy saved (kWh):		
Other resources saved :		
Natural Gas (m3):		
Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):

lifecycle

in year

Energy savngs (kWh):

Distributed Generation and Load Displacement Programs:

Amount of DG installed (kW):

Energy generated (kWh):

Peak energy generated (kWh):

Fuel type:

Other Programs (specify):

Metric (specify):

D. **Program Costs*:**

Utility direct costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

Incentive:

\$ -

Total:

\$ -

Utility indirect costs (\$):

Incremental capital:

\$ -

Incremental O&M:

\$ -

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.