KITCHENER-WILMOT HYDRO INC.
P.O. BOX 9010
301 VICTORIA STREET SOUTH
KITCHENER, ONTARIO
N2G 4L2

Ron W. Charie
PRESIDENT
TEL : (519) 745-4771
FAX: (519) 571-9338

March 29, 2007

BY COURIER

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 26th Floor
Toronto, ON M4P 1E4

Re: Kitchener-Wilmot Hydro Inc.
RP-2004-0203/EB-2005-0193
Conservation and Demand Management Annual Report

Dear Ms. Walli:

Enclosed please find three (3) hard copies of Kitchener-Wilmot Hydro Inc.'s 2006 Conservation and Demand Management Annual Report. As well, two (2) electronic copies (on CD) are also enclosed; one electronic copy is in PDF format which consists of the entire report, and the second electronic copy is in Excel format which consists of only Appendix A, B and C.

Should you require any further information or clarification, kindly contact either myself at (519) 745-4771, ext. 280, or our Vice-President Finance and C.F.O. at ext. 217.

Respectfully submitted,

Original signed by

R. Charie, B. Comm., C.G.A.
President & C.E.O.
cb

Encl.

2006
Conservation
and
Demand Management
Annual Report

March 28, 2007


KITCHENER WILMOT
HYDRO
INC.

Table of Contents

1. Introduction

Kitchener-Wilmot Hydro Inc. (Kitchener-Wilmot Hydro) is a local distribution company that is responsible for distributing electricity to more than 81,020 homes and businesses within the City of Kitchener and the Township of Wilmot.

On March 17, 2005, the Ontario Energy Board approved Kitchener-Wilmot Hydro's Conservation and Demand Management (CDM) plan with a budget amount of $2,350,000 (RP-2004-0203 / EB-2005-0193).

Subsequently, on March 21, 2005, the Ontario Energy Board issued Kitchener-Wilmot Hydro's rate order for the 2005 rate year (RP-2005-0013 / EB-2005-0042) granting the utility its final instalment of MARR of $2,340,264.

Kitchener-Wilmot Hydro's CDM program approved by the Ontario Energy Board is guided by the following key principles:

- The plan includes a mix of utility-side and customer-side programs. In addition, the programs are targeted at or benefit all customer rate classes.
- The plan addresses some or all of the other priorities identified by the Minister, such as addressing low income customers, promoting distributed or embedded generation, leveraging funding of other organization, and helping to meet the Minister's target of a 5% reduction in peak demand by 2007.
- The plan builds on existing programs and leverages funding, where possible.
- The plans allows for flexibility in expenditures to allow the LDC to avoid potential lost opportunities and to respond to changing circumstances.

Distributor CDM activities must address both the efficiency with which its customers use electricity as well as the efficiency of the distribution system itself. Consequently, Kitchener-Wilmot Hydro's CDM plan includes both utility-side programs and customer-side programs (capital and operating).

Each new program, whether capital or operating, is evaluated on its own merits to ensure it meets the Ontario Energy Board's TRC test requirements before implementation. We believe that a detailed analysis of each program must be undertaken in order to implement the programs that are sustainable and effective in achieving long-term energy savings.

2. Evaluation of the CDM Plan

Kitchener-Wilmot Hydro's CDM programs started and/or completed in 2006 show a positive TRC value, demonstrating that these programs are successful in achieving our electricity conservation goals by reducing both kWh and peak demand. The overall effectiveness of the sixteen programs undertaken to date has produced the following total returns (see Appendix A):

- Net TRC value: $4.7 million
- Annual energy savings: 4,981 mWh and 1,518 kW, which accounts for:
  - 0.26% of the total kWh delivered and,
  - 0.39% of Kitchener-Wilmot Hydro's peak demand in 2006
- Gross CDM expenditures: $1.2 million
- Expenditure per kWh saved: $0.26
- Expenditure per kW saved: $847.98

3. Discussion of Programs

The CDM programs that were started and/or completed in 2006 include the following sixteen programs (discussed in detail below):

A) CAPITAL PROGRAMS – UTILITY-SIDE INVESTMENTS

i. Capacitor Bank Program

As discussed in its 2005 Annual CDM report, a load flow analysis was performed on Kitchener-Wilmot Hydro's 13.8 kV distribution system (Phase I of the project) in 2005. A model was subsequently developed using software called Distribution Engineering Software Solution (DESS) to investigate the opportunities for system optimization and improved phase balancing. DESS helped the Utility identify the optimum location to install capacitor banks to extract these savings.

Capacitor banks are attached to the utility pole to improve the voltage power factor and reduce distribution system losses. Extensive analysis has shown that the annual savings generated will be 3.1 of this Utility's 2006 summer peak demand or 12.28 MVA.

Phase I Completion- City of Kitchener

As reported in its 2005 annual CDM report, 67 capacitor banks were to be installed within the City of Kitchener. Due to problems in two locations, only 65 capacitor banks were installed. These installations were completed in June 2006, prior to the 2006 summer peak period. With the installation of the 65 capacitor banks, distribution system losses are expected to be reduced by approximately $100,000 (1,715,400 kWh) per annum.

Phase II – Township of Wilmot

Installation of the capacitor banks for Phase II of the project will begin in the spring of 2007. A model of the 27.6 kV distribution system in the Township of Wilmot has been developed using DESS. This model has identified the best locations to install the capacitor banks in the Township rural areas for reduced distribution system losses. Twelve (12) capacitor banks are to be installed in the Township of Wilmot with an expected cost of $166,000.

Capacitor Bank Program Specifics

Specifics of Phase I of the program are as follows:

- Phase I equipment cost is $243,525 and direct program costs are $265,923 for a total Phase I program cost of $509,448

- The estimated energy savings are:
  - ✓ 1,715,400 kWh and,
  - ✓ 425 kW per year

- The net TRC value is approximately $1.2 million

- The benefit to cost ratio is 3.38

Kitchener-Wilmot Hydro invested $324,018 in Phase I of the program in 2006. As per the 2005 CDM report, the total dollar amount invested in this program as of December 31, 2005 was $185,430, for a total of $509,448 (less than the original budget).

ii. In-house Retrofit Program

Kitchener-Wilmot Hydro wants to ensure that its own facilities use energy efficiently, and serve as a model for what it hopes its customers will emulate. To this end, the following three (3) activities have been included in this Utility's 2006 CDM activities:

a. *LED Sign*

As part of the program in 2005 and to enhance customer education on energy conservation, an LED sign was installed above the main entrance to our office building in May of 2005. The sign flashes helpful energy saving tips to customers. It is estimated that approximately 37,236 customers passed through the front door to pay bills and another 6,750 new customers signed for new services 2006. In addition, the sign is visible to the street, allowing drive-by traffic an opportunity to read the messages. Overall exposure of these energy conservation messages is therefore quite high.

The LED sign continues to be part of Kitchener-Wilmot Hydro's CDM activities. The numerous messages flashed to customers in 2006 are attached as Attachment A. To see a list of the messages flashed to customers in 2005, see Kitchener-Wilmot Hydro's 2005 annual CDM report.

A TRC analysis for this project has not been calculated as the sign is for educational purposes only. Costs to December 2006 were $18,443.

b.

In-House Energy Efficiency Improvements

Kitchener-Wilmot Hydro has commenced activities aimed at internal energy efficiency improvements in 2006. These activities include:

- ✓ Completion of an energy audit to identify areas for improvement.
- ✓ Architectural, engineering, construction and management services to assess and implement the results of the energy audit.
- ✓ Replacement of all energy inefficient windows (135) with more cost effective energy saving windows.

Activities to be undertaken for this program in 2007 include:

- ✓ Replacement of the lighting system.
- ✓ Installation of gas-fired heaters in the garage area.

In-House Energy Efficiency Program Specifics

Specifics of the window program are as follows:

- ➢ Equipment cost is $41,725
- ➢ The estimated energy savings are:
  - ✓ 175,000 kWh per year
- ➢ The net TRC value is approximately $107,097
- ➢ The benefit to cost ratio is 3.57

Kitchener-Wilmot Hydro invested $115,216 in its in-house energy efficiency program in 2006.

c. Fuel Switching – Electricity to Gas

Kitchener-Wilmot Hydro also participated in the fuel switching program by changing the electric boiler system at its main office at 301 Victoria Street South in Kitchener to gas heated boilers.

Fuel Switching – Electricity to Gas Program Specifics

Specifics of the program are as follows:

- Equipment cost is $137,640
- The estimated energy savings are:
  - ✓ 500,000 kWh and,
  - ✓ 300 kW per year
- The net TRC value is approximately $438,116
- The benefit to cost ratio is 4.18

The total dollar amount spent on this project to the end of December 2006 is $137,640.

B) OPERATING AND MAINTENANCE PROGRAMS

i. LED Traffic Lights

Kitchener-Wilmot Hydro has agreed to assist the Regional Municipality of Waterloo in converting 172 intersections from incandescent to LED technology beginning in 2006. The following fourteen (14) conversions were fully completed by the end of the year:

- ✓ Dominion & Park
- ✓ Joseph & Water
- ✓ Duke & Victoria
- ✓ Victoria & Weber
- ✓ King & Ontario
- ✓ Natchez & Victoria
- ✓ Forwell & Victoria
- ✓ Fischer Hallman & New Dundee
- ✓ Homer Watson & Ottawa
- ✓ Homer Watson & Stirling
- ✓ Courtland & Hwy 7/8 Westbound Ramp
- ✓ (Courtland & Expressway)
- ✓ Fischer Hallman & Greenbrook / Hwy 7/8
- ✓ Bruce & Victoria
- ✓ Edna & Victoria

LED Traffic Light Program Specifics

Specifics of the program are as follows:

- Equipment cost is $619,200
- The estimated energy savings are:
  - ✓ 1,750,000 kWh per year
- The net TRC value is approximately $869,020
- The benefit to cost ratio is 2.4

Kitchener-Wilmot Hydro invested $14,000 for LED light installation at the first 14 intersections in 2006.

ii. Municipal Building Lighting Program

As discussed in the 2005 annual CDM report, the City of Kitchener has been actively improving the energy efficiency of municipal buildings over the last twenty years and the City allocates a budget each year for improvements. In keeping with this objective, in 2005, Kitchener-Wilmot Hydro provided funding to the City of Kitchener to upgrade the lighting systems at Kitchener Memorial Auditorium, City Hall and the City Hall parking garage. The following activities were performed:

Kitchener Memorial Auditorium

- Total funding $21,100
- Estimated energy savings are:
  - ✓ 87,079 kWh and,
  - ✓ 16.1 kW
- All fixtures identified as inefficient T12 fluorescent lights were retrofitted to newer, high efficient T8 technology.
- All existing incandescent fixtures were retrofitted to high efficiency compact fluorescent lighting.
- Retrofit "exit" signs to LED technology.
- All fixtures were cleaned for improved aesthetics and light output.

City Hall

- Total funding $10,664
- Estimated energy savings are:
  - ✓ 118,152 kWh and,
  - ✓ 14.1 kW
- All existing fixtures were upgraded to 150W high efficiency quartz lighting.

City Hall Parking Garage

- Total funding $21,084
- Estimated energy savings are:
  - ✓ 78,971 kWh and,
  - ✓ 9.02 kW
- All 150 watt quartz fixtures were replaced with 15 watt compact long-life fluorescent fixtures (a 90% reduction of total energy used).All fixtures were cleaned for improved aesthetics and light output.

Specifics of the total Municipal Building program are as follows:

- The total cost is $52,848
- The estimated energy saving is:
  - ✓ 284,202 kWh and,
  - ✓ 39.14 kW
- The net TRC value is $34,336
- The benefit to cost ratio is 2.30

This project was completed in 2005.

iii. Fuel Switching – Electricity to Gas

In 2006, Kitchener-Wilmot Hydro and the local gas company, Kitchener Utilities, partnered to promote energy conservation by offering financial assistance to eligible residential customers in a fuel switching program. The fuel switching program encourages consumers to convert from electricity to gas and consists of the following two conversion programs:

- ✓ Conversion from existing electric water heaters to natural gas water heaters
- ✓ Conversion of existing electric furnaces to natural gas furnaces.

During the period of February to April 2006, letters and pamphlets were delivered to eligible residential customers, detailing the program and offering the following rebates for water heaters and furnaces installed before May 31, 2007:

- ✓ $200 for switching to a natural gas water heater.
- ✓ $500 for switching to a natural gas furnace.

In 2006, the program has been well received and the results have been as follows:

- ✓ 183 residential customers have taken advantage of the water heater rebate totalling $36,600 with an annual energy saving of about $30 per customer.
- ✓ 16 eligible customers have taken advantage of the furnace rebate totalling $8,000 in rebates.

Fuel Switching – Electricity to Gas Program (Residential) Specifics

Specifics of the program are as follows:

- ➢ Equipment cost is $157,800 and direct program costs are $45,000 for a total program cost of $202,800
- ➢ The estimated energy savings are:
  - ✓ 943,960 kWh and,
  - ✓ 65.33 kW per year.
- ➢ The net TRC value is approximately $589,484
- ➢ The benefit to cost ratio is 3.91

The total dollar amount spent on this project to the end of December 2006 is $44,600.

iv. Fall Discount Coupon Program

In 2005, Kitchener-Wilmot Hydro Inc., in partnership with Enerconnect / Energy Shop issued 71,500 coupons to encourage customers to purchase energy saving products at Canadian Tire Stores. The program "2005 Lighten Your Electricity Bill" gave customers the following discounts which were funded by Kitchener-Wilmot Hydro:

- ✓ Programmable thermostat ($15)
- ✓ Outdoor light timer ($5)
- ✓ Indoor light timer ($1)
- ✓ Compact fluorescent light ($3)
- ✓ LED Christmas lights, string of 25 ($5)
- ✓ Ceiling fan ($5)
- ✓ EnerGuide for Houses (free with home evaluation)

The final report was issued by SeeLine Group Inc. in March 2006 and the results show the program to be a success. Details regarding the coupon program (including participation and expected energy savings) are provided below:

Summary of Program Participation and Net Program Savings
2005 Lighten Your Electricity Bill Program

Technology	# of Participants	Summer Peak kW Savings	Annual kWh Savings in Year	Measure Life	Lifecycle kWh Savings
Compact Fluorescent Bulbs	3,114	-	292,568	4	1,170,272
LED Christmas Lights - Replace 5 watt Lights (25 lights)	650	-	27,480	30	824,400
LED Christmas Lights - Replace incandescent mini lights	650	-	10,517	30	315,511
Programmable Thermostats - Space Heating	68	-	89,497	18	1,610,953
Programmable Thermostats - Space Cooling	176	25.88	25,256	18	454,611
Timers - outdoor	149	-	39,157	20	783,144
Timers - indoor light	23	1.22	2,030	20	40,605
Timers - indoor air conditioners	23	3.60	2,252	20	45,043
Ceiling Fan	63	-	-	20	-
EnerGuide for Existing Homes - Space Heating	-	-	39	25	973
Totals	***4,916***	***30.70***	***488,796***	***205***	***5,245,512***

A breakdown of the data gives the following TRC values by technology:

Technology	TRC Benefits $$$	Incremental Equipment Costs $$$	Utility Program Costs $$$	TRC Net Benefits $$$	TRC B/C Ratio
Compact Fluorescent Bulbs	71,299	5,605	-	65,694	12.72
LED Christmas Lights - Replace 5 watt Lights (25 lights)	25,578	1,235	-	24,343	20.71
LED Christmas Lights - Replace incandescent mini lights	9,789	1,235	-	8,554	7.93
Programmable Thermostats - Space Heating	61,345	3,662	-	57,683	16.75
Programmable Thermostats - Space Cooling	30,586	9,526	-	21,060	3.21
Timers - outdoor	29,105	2,682	-	26,423	10.85
Timers - indoor light	2,148	145	-	2,004	14.83
Timers - indoor air conditioners	3,533	145	-	3,388	24.38
Ceiling Fan	-	2,381	-	(2,381)	-
EnerGuide for Existing Homes - Space Heating	31	23	-	8	1.32
Program Costs	-	-	15,316	(15,316)	-
Totals	***233,414***	***26,639***	***15,316***	***191,460***	***5.56***

Specific TRC results of the program show the following:

- The equipment cost is $26,639 and direct program cost is $15,316
- The estimated energy saving is:
  - ✓ 115.57 kW (winter peak)
  - ✓ 30.7 kW (summer peak) and,
  - ✓ 488,797 kWh per year
- The net TRC value is $191,459
- The benefit to cost ratio is 5.56

The total dollar amount invested in this program to December 31, 2006 is $35,111, an additional $19,826 from 2005.

v. Residential Consumers Education

Kitchener-Wilmot Hydro has been involved in numerous activities to encourage consumers to conserve energy, as well as to educate them.

a. Kitchener-Wilmot Hydro has entered into a sponsorship agreement with the Kitchener Rangers Hockey Club and Rogers Television for energy conservation advertising spots for two hockey seasons. Per the agreement, an average of three advertising spots per game will be played on the video score clock in the centre of the arena and replayed on 6 new concourse plasma monitors. The time of each promotion will be 20 seconds long and each spot has both an audio and video component.

   The promotion includes:
   - ✓ An "attention grabbing" introduction showing Kitchener-Wilmot Hydro's logo.
   - ✓ A fan participation component that leads to interaction with fans.

   As part of the package, the conservation messages are also played on Rogers Cable television on Kitchener's local channel 20, increasing public exposure to anyone watching the games from their living room.

   The total program costs to date are $58,580.

b. For "Blackout Day", the City of Kitchener ran advertisements challenging customers to reduce electricity consumption by 4%.

   Kitchener-Wilmot Hydro's share of the advertising was $1,290.

c. Miscellaneous energy conservation advertising includes:

   - ✓ Greater Kitchener Waterloo Chamber of Commerce Directory
   - ✓ Costs incurred due to Kitchener-Wilmot Hydro's participation in the OPA Fall coupon program.

   Kitchener-Wilmot Hydro Inc. incurred $4,493 in miscellaneous energy conservation advertising in 2006.

The total cost for Residential Consumer Education project is $64,363.

vi. Energy Conservation Kits

The Minister has identified low income consumers as a key target for CDM programs. Kitchener-Wilmot Hydro's energy conservation kit program was designed specifically to reach low income consumers.

In 2005, Kitchener-Wilmot Hydro supplied 70 energy conservation kits to the Fall Energy Forum, held at the Kitchener's Farmer's Market and hosted by John Milloy M.P.P. In addition, 649 of these kits were supplied to the Region of Waterloo, which distributed the kits to eligible consumers in the City of Kitchener and the Township of Wilmot. Eligible consumers include low income consumers who reside in subsidized housing. The remaining kits were distributed at other local community energy and conservation functions. Each kit included the following:

- ✓ Compact fluorescent light
- ✓ Fridge thermostat
- ✓ Shower coach
- ✓ Hot water gauge
- ✓ Insulation for light switch covers
- ✓ Three (3) feet of adhesive weather strip

Specific TRC results of the program show the following:

- The equipment cost is $15,397.
- The estimated energy saving is:
  - ✓ 1,328,800 kWh and,
  - ✓ 71.5 kW per year
- The net TRC value is $731,170
- The benefit to cost ratio is 53.77

vii. Low Income Program with the Region – Social Housing

Kitchener-Wilmot Hydro's CDM plan includes funding for residential low income programs. In 2006, Kitchener-Wilmot Hydro approved 100% funding for a lighting upgrade at one of the Region of Waterloo's social housing buildings located at 518 Greenfield Avenue in Kitchener.

Specific TRC results of the program show the following:

- The equipment cost is $10,260
- The estimated energy saving is:
  - ✓ 24.72 kW and,
  - ✓ 92,439 kWh per year
- The net TRC value is $12,950
- The benefit to cost ratio is 2.26

The total dollar amount invested in this program to December 31, 2006 is $9,750.

viii. Low-Income Residential Education Program

As discussed in Kitchener-Wilmot Hydro's 2005 annual CDM report, World-Wide Opportunities for Women (WWOW) is a non-profit organization that has been active in Waterloo Region since 1994. WWOW is a member of the Green Communities Association, which has developed the Home Energy $aver Program and offers support, training and advice to the community.

The program focuses on energy efficiency, water efficiency, and alternative household cleaning items, reducing household waste and life-style improvement. Through the program, two people (often a male and a female) from WWOW, trained in home energy assessment audits, visit a household and complete a four-hour assessment. During their visit, they provide education, small retrofits and assessment recommendation to the household. If necessary, they will also assist the household in advocating to their landlord energy efficiency repairs, improvements and upgrades. They are able to offer the home assessment in over 16 languages. They follow up 45 days after the assessment to see how the household is progressing.

To date, WWOW has completed 2,500 home assessments across the Region. Assessments were previously available to anyone in the community with a request for a $10 donation. 75% of the assessments conducted were for people in a low-income bracket and unable to make a donation. The actual cost of the assessment is $380.

The focal point of WWOW energy audits is to develop the Home Energy $aver program and to empower low-income and ethnic groups to take action and make measurable changes with their home environment. The program is targeted at families and individuals who typically would not be able to take advantage of developing a greater awareness of energy management.

In support of WWOW's objectives, Kitchener-Wilmot Hydro made a donation to the organization in the amount of $3,000 to help WWOW continue to make the Home Energy $aver Program more accessible to residents in the City of Kitchener and the Township of Wilmot.

ix. Pilot Program Funding for Social Housing Services Corporation (SHSC)

The SHSC has commenced an "Energy Management Program" whereby they are conducting energy audits in over 5,000 social housing units in the Province of Ontario. Using key partnerships within the public and private sectors, including the Ministry of Energy, SHSC's program will serve as a central resource for energy management in the social housing sector including its over 1,500 members that comprise 250,000.

In late March and early April 2005, energy consultants visited the pilot buildings to identify energy conservation measures and entered their findings into an Energy Management System. This on-line system will prioritize the various measures, recommend funding sources, assist housing providers in planning retrofits, and then monitor and report energy savings.

In support of SHSC's program, Kitchener-Wilmot Hydro provided funding to SHSC for 91 unit townhouses within the Utility's service area. The total sponsorship cost was $4,450.

Specifics of the TRC test are presented below:

- The total cost is $120,470 (including Kitchener-Wilmot Hydro funding of $4,450)
- The estimated energy savings is:
  - ✓ 343,161 kWh and,
  - ✓ 18.2 kW per year
- The net TRC value is $14,643
- The benefit to cost ratio is 1.13

x. Residential – Electrically Heated Homes

Starting in May 2006, Kitchener-Wilmot Hydro sponsored Residential Energy Efficiency Project (REEP). REEP is a project of Waterloo Region Green Solutions that delivers the EnerGuide for Houses program under an agreement with Green Communities Canada.

Through the EnerGuide program, REEP conducts in-home evaluations for eligible residential customers. Through the course of the evaluations, each customer receives free CFL's.

From May to December 2006, REEP's activities included the following:

- ✓ 280 initial and follow-up evaluations in the City of Kitchener and the Township of Wilmot.
- ✓ 396 free CFL's were given out.
- ✓ The estimated energy savings is 26,532 kWh per year generated by the installation of the free CFL's.

Costs incurred on this project to date are $21,733.

xi. Key Account Seminars and Information

Kitchener-Wilmot Hydro has been involved in numerous programs to educate its general service customers.

a. In April 2005, the Independent Electricity System Operator (IESO) produced a brochure called "The Bottom Line on Energy Management. Making Ontario's electricity market work for your business". This educational booklet was designed for larger customers and explained:

- ✓ How the electricity pricing system works in the Province of Ontario.
- ✓ Interval meters and how they record electricity consumption.
- ✓ Energy conservation.
- ✓ Retail contracts.
- ✓ Load shifting.

Kitchener-Wilmot Hydro mailed out these CDM information booklets to general service customers incurring postage cost of $359.07

b. In January 2006, IESO energy savings calendars were sent out to Kitchener-Wilmot Hydro's large service customers (> 200kW). The calendar provides the customer with information on how they can better manage electricity use and help control costs. It contains information about the factors that influence the price of electricity, conservation tips and details about incentive programs available to businesses. Also, the calendar includes helpful monthly information such as:

- ✓ Average temperature
- ✓ Average weighted cost
- ✓ Average weighted daytime price (8 am-8 pm, M-F)
- ✓ Average weighted nighttime/weekend price
- ✓ Average time price peaked.

230 energy savings calendars were sent out at a postage cost of $951.61.

c. In November 2006, an IESO information book, "Managing Your Electricity Costs", was sent out to Kitchener-Wilmot Hydro's non-regulated price plan customers (commercial & general service customers < 50 kW). The IESO book is aimed to help business

recognize that reducing electricity costs will increase profitability. It details five keys to managing electricity costs.

- ✓ Understand how you're billed.
- ✓ Know where you stand today.
- ✓ Control your electricity use.
- ✓ Invest in an energy management plan.
- ✓ Cash in on incentives.

683 of these helpful books were sent out at a postage cost of $682.75.

d. In January 2007, Kitchener-Wilmot Hydro held an Energy Efficiency seminar, "Lighting Strategies & Power Factor Correction Savings" at the Holiday Inn Kitchener Conference Centre. In 2006, invitations were sent out to potential attendees. Promotional items, such as ballpoint pens with the Kitchener-Wilmot Hydro logo and "Write Conservation Into Your Life" written on them were also purchased to be given out at the seminar. The seminar:

- ✓ Examined the latest in energy efficient lighting products and retrofit strategies.
- ✓ Explored how to roll out utility incentive programs for maximum CDM success.
- ✓ Allowed customers to see and review the latest technologies in energy efficient lighting such as T8, T5 and pin-based compact fluorescent, metal halide and LED systems.
- ✓ Hosted a number of Canada's leading lighting experts (speakers) who provided valuable information on how to maximize the energy efficiency of the lighting in commercial, industrial and institutional facilities.

The total cost incurred to the end of December 2006 for this seminar is $672.50.

Total costs incurred for the Key Accounts seminars and Information program is $2,666, an increase of $2,307 from 2005.

xii. Energy Management Workshops

Kitchener-Wilmot Hydro recognizes that education is the key to successful energy conservation and promotes events that are focused on energy efficiency, demand response and/or demand management.

a. During the year 2005, the Utility conducted two local "Dollars to $ense" Workshops in partnership with Natural Resources Canada on June 23, 2005 and November 8, 2005 (for detail see Appendix F). Over the past six years, more than 6,500 Canadians have found ways to save energy in their companies and organizations by attending these workshops. In addition to learning from highly trained instructors, workshop participants received instructional materials, which they took back to their workplace to share with colleagues.

   "Spot the Energy Savings Opportunities" was held on June 23, 2005. The workshop highlighted learning through hands-on demonstrations how to identify opportunities in your electrical and thermal processes, from point of purchase to end-use including:

   - ✓ Reviewing energy basics
   - ✓ Analyzing the incremental cost of energy, and identifying up-front opportunities.
   - ✓ Discovering how to minimize energy lost through distribution and conversion.
   - ✓ Picking up tips on operating and maintaining boilers, compressors, motors, pumps, fans and more.

   The *"Spot the Energy Savings Opportunities"* workshop was by attended by 19 of Kitchener-Wilmot Hydro's large industrial customers (>200 kW).

   The second workshop entitled *"Learn to Monitor and Track Energy Costs"* was held on November 8, 2005. This workshop targeted new energy savings opportunities such as:

   - ✓ Pinpointing energy waste.
   - ✓ Forecasting savings and chart gains.
   - ✓ Integrating energy management into every aspect of an organization.
   - ✓ Discovering low-cost opportunities for saving money and options for financing retrofits and upgrades.
   - ✓ Instilling an energy-efficient culture – taking energy management from the boardroom to the shop floor.

The *"Learn to Monitor and Track Energy Costs"* workshop was attended by 26 of our large industrial customers (>200 kW), including 3 of our large use customers (>5,000 kW).

Both workshops were very well received. Participants showed a keen interest in all topics and their feedback was very encouraging and positive.

The total cost of the two workshops is $7,643.35.

b. In April 2006, the Greater Kitchener Waterloo Chamber of Commerce hosted its 2006 Energy and Environment Forum, "New Habits / Good Habits: Your Triple Bottom Line". This interactive half day event brought participants face-to-face with local experts who shared practical information on clean energy and energy conservation. Speakers of note were:

- ✓ Murray Elston, President and CEO of the Canadian Nuclear Association.
- ✓ Stephen Dixon, Principal of TdS Dixon Inc.
- ✓ Stephen Carpenter, Founder and President of Enermodal Engineering

Following the keynote presentations, seminars were held on topics such as waste management, hybrid vehicles and greenhouse gases. The forum also welcomed students from Forrest Hill Public School demonstrating what they have done to learn new habits and good habits around conservation activities.

Kitchener-Wilmot Hydro paid $1,500 dollars to be a gold sponsor for this informative event.

Total costs incurred for the Energy Management Workshops program is $9,143, an increase of $1,500 from 2005.

xiii. Cool Shops

Kitchener-Wilmot Hydro and the Clean Air Foundation (CAF) partnered to deliver the Cool Shops program in the City of Kitchener during the summer of 2006.

The Clean Air Foundation is a not-for-profit organization dedicated to developing, implementing and managing public programs and other strategic approaches that lead to measurable reductions to improve air quality and protect the climate. Started in February 2004 by CAF, Cool Shops is the only energy efficiency program of its kind in Canada which specifically engages the small commercial sector.

The core objective of the Cool Shops program is to deliver cost-effective energy efficiency solutions to small commercial businesses. This service is needed as CAF has identified the small commercial sector as an area lacking the knowledge and tools to undertake energy efficiency. Further, CAF believes that few are interested in spending the time and money to access detailed energy efficiency advice.

Through its program, a Cool Shops representative would visit small street-facing retail businesses in Kitchener. During each visit, the small business owner would receive:

- ✓ An energy audit.
- ✓ Installation of two free CFLs and one free LED exit bulb retrofit kit.
- ✓ Education in energy efficiency.
- ✓ Money-saving discounts for CFLs, PAR fluorescent light bulbs and T8 lighting retrofits.

Specifics of the TRC test are presented below:

- The total cost is $120,286
- The estimated energy savings is:
  - ✓ 811,013 kWh and,
  - ✓ 219.08 kW per year
- The net TRC value is $224,330
- The benefit to cost ratio is 2.86

The total cost to date of the Cool Shops program is $79,895.65.

xiv. Lighting Retrofit Program

Beginning in the spring of 2006, Kitchener-Wilmot Hydro Inc. began offering a lighting retrofit program targeted to industrial, commercial and institutional end-users with facility peak loads of greater than 50 kW. The objective of this program has been to leverage energy conservation and load management opportunities within these sectors.

The lighting retrofit program enables our customers to improve the quality of their lighting, lower maintenance costs, increase equipment life and save energy dollars. Further, maintaining a reliable supply of energy is a high priority to Kitchener-Wilmot Hydro and reducing peak demand will contribute to a greater security of supply.

To be eligible for this program, the following conditions must be met:

- ✓ The applicant must be a customer of Kitchener-Wilmot Hydro.
- ✓ The facility(ies) where the energy conservation initiative(s) is/are proposed must be within the Kitchener-Wilmot Hydro service area.

Through this program, Kitchener-Wilmot Hydro will sponsor up to a maximum of $20,000 towards a lighting retrofit program that successfully passes the TRC test.

This program has been highly successful with 10 businesses taking advantage of the program to the end of December 2006 with a total cost to the Utility of $119,055. It is expected that before expiry of this program, that total will at least double.

Specifics of the TRC test are presented below:

- The equipment cost is $402,812 (including Kitchener-Wilmot Hydro funding of $119,054.52)
- The estimated energy savings is:
  - ✓ 1,672,229 kWh and,
  - ✓ 290.05 kW per year
- The net TRC value is $298,587
- The benefit to cost ratio is 1.82

xv. Power Factor Correction Program

Beginning in the spring of 2006, Kitchener-Wilmot Hydro Inc. began offering a power factor correction program targeted to industrial, commercial and institutional end-users with facility peak loads of greater than 50 kW.

One customer completed a power factor correction project in 2006.

Specifics of the TRC test are presented below:

- The total cost is $11,140 (including Kitchener-Wilmot Hydro funding of $4,456).
- The estimated energy savings is: 33.8 kW per year.
- The net TRC value is $9,977.
- The benefit to cost ratio is 1.9.

4. Lessons Learned

- Distribution system improvements play a key role in energy conservation. Distribution systems losses can have a significant impact on the overall efficiency of the system. By making improvements to our own distribution system, we are "starting at home" in the goal of energy conservation.

- The feedback from the customer education workshops has been very encouraging and positive. The attendees have shown a keen interest with regards to energy conservation. It has been strongly suggested that more customer education programs should be undertaken in the future.

- Customer education is a key component in creating a conservation culture in the Province of Ontario. A lot of energy and money can be saved by teaching consumers how to conserve energy; however, the use of the TRC test as a measurement tool does not incorporate the benefits stemming from proper consumer education.

- There are few programs in the Province of Ontario that deal primarily with the General Service < 50 kW class (mostly small businesses). The Cool Shops program allowed Kitchener-Wilmot Hydro to reach customers that may have otherwise not received any benefits from energy conservation efforts.

- High capital investment costs and slow payback can be a serious deterrent to businesses investing in energy conservation assets. Offering financial assistance to this group increases the likelihood that they will pursue such projects, which can reap substantial energy savings for the Province.

- Power factor correction programs can generate significant savings for the customer but may not be fully understood. More benefits would flow from such programs if coupled with customer education.

- There are many potential projects available for funding but not all may realize potential positive TRC values or short pay-back periods. We believe that a detailed analysis of each program must be undertaken in order to implement the programs that are sustainable and effective in achieving long-term energy savings.

- Each of the programs undertaken by Kitchener-Wilmot Hydro (with the exception of those primarily education-based) have positive TRC values. This indicates that Kitchener-Wilmot Hydro's CDM portfolio is highly successful. The Utility's approach of running the TRC test on each potential program prior to implementation ensures the positive results will continue.

5. Conclusion

Kitchener-Wilmot Hydro received Board approval of its CDM Plan on March 17, 2005 (RP-2004-0203 / EB-2005-0193) with a total budget of $2,340,264. Through the course of its CDM implementation, the Utility has paid careful attention to stay within the guidelines as set out in the Order as issued by the Board.

Due to significant cost saving efforts on Kitchener-Wilmot Hydro's part, the actual dollars required to complete budgeted capital investments (capacitor bank installation and in-house retrofits) have come in lower than initially expected. The savings realized have been transferred to the Operating and Maintenance section of the CDM plan, allowing the Utility to allow even more customers to benefit from its CDM plan that originally forecast. A budget to actual report has been included as Attachment B.

As of December 31, 2006, Kitchener-Wilmot Hydro has spent $1,287,221 (54%) of its total CDM budget. Most of the remaining budget has already been allocated to new or existing programs to be completed in 2007.

As mentioned, the TRC results indicate that Kitchener-Wilmot Hydro's 2006 CDM program has been a great success due to the significant energy savings generated overall.

Kitchener-Wilmot Hydro will continue to strive to generate even more savings in 2007 through the implementation and continuation of its budgeted programs.

Appendix A - Evaluation of the CDM Plan

Highlighted boxes are to be completed manually, white boxes are linked to Appendix C and will be brought forward automatically.

	[5] Cumulative Totals Life-to-date	Total for 2006	Residential	Commercial	Institutional	Industrial	Agricultural	LDC System	[4] Smart Meters	Other #1	Other #2
Net TRC value ($):	*$ 4,735,996*	**$ 3,764,389**	**$ 602,434**	**$ 532,895**	**$ 869,020**	**$ -**	**$ -**	**$ 1,760,040**		**$ -**	**$ -**
Benefit to cost ratio:	*65.63*	2.87	3.83	2.08	2.40	0.00	0.00	3.56		0.00	0.00
Number of participants or units delivered:	*44,405*	*41,055*	40,966	10	14	0	0	65		0	0
Lifecycle (kWh) Savings:	*142,134,391*	116,551,737	17,361,036	17,382,700	35,000,000	0	0	46,808,001		0	0
Report Year Total kWh saved (kWh):	*4,981,375*	4,688,792	2,678,958	684,212	355,423	0	0	970,200		0	0
Total peak demand saved (kW):	*1,518*	1,358	90	543	0	0	0	725		0	0
Total kWh saved as a percentage of total kWh delivered (%):	0.26%	0.24%	0.14%	0.04%	0.02%	0.00%	0.00%	0.05%		0.00%	0.00%
Peak kW saved as a percentage of LDC peak kW load (%):		0.36%	0.02%	0.14%	0.00%	0.00%	0.00%	0.19%		0.00%	0.00%
[1] *Report Year Gross C&DM expenditures ($):*	*$ 1,287,221*	$ 966,714	$ 160,272	$ 207,177	$ 14,000	$ -	$ -	$ 576,875	$ -	$ 8,391	$ -
[2] *Expenditures per KWh saved ($/kWh):*	*0.26*	$ 0.01	$ 0.01	$ 0.01	$ 0.00	$ -	$ -	$ 0.01		$ -	$ -
[3] *Expenditures per KW saved ($/kW):*	*847.98*	$ 711.88	$ 1,779.81	$ 381.59	$ -	$ -	$ -	$ 795.69		$ -	$ -

Utility discount rate (%):	7.55

[1] Expenditures are reported on accrual basis.
[2] Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings
[3] Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.
[4] Please report spending related to 3rd tranche of MARR funding only. TRC calculations are not required for Smart Meters. Only actual expenditures for the year need to be reported.
[5] Includes total for the reporting year, plus prior year, if any (for example, 2006 CDM Annual report for third tranche will include 2005 and 2004 numbers, if any.

Capacitor Bank Program

A. **Name of the Program:** Capacitor Banks

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

In order to improve the overall efficiency of its distribution system, Kitchener-Wilmot Hydro installed 65 capacitor banks (Phase One) based on detailed analysis of its system. The equipment cost is $243,525 and direct program cost is $265,923. The estimated energy saving is 1,715 MWh and 425 kW per year. The net TRC value is about $1.2 million. The benefit to cost ratio is 3.38.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Install capacitor banks		
Number of participants or units delivered for reporting year:	65		
Measure life (years):	20		
Number of Participants or units delivered life to date	65		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 1,724,274.95*	*$ 1,724,274.95*
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	*$ 265,923.00*	*$ 265,923.00*
Incremental Measure Costs (Equipment Costs)	*$ 243,525.00*	*$ 243,525.00*
Total TRC costs:	*$ 509,448.00*	*$ 509,448.00*
Net TRC (in year CDN $):	*$ 1,214,826.95*	*$ 1,214,826.95*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.38	3.38

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

Cumulative Results:

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

Amount of KVar installed (KVar):	38,122	38,122
Distribution system power factor at beginning of year (%):	90.60%	90.60%
Distribution system power factor at end of year (%):	94.40%	94.40%

Line Loss Reduction Programs:

Peak load savings (kW):		425	425
	lifecycle	*in year*	
Energy savings (kWh):	34,308,001	857,700	857,700

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. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ 324,018.30	$ 509,448.00
	Incremental O&M:	$ -	$ -
	Incentive:		
	Total:	$ 324,018.30	$ 509,448.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

Total direct program cost is $509,448.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Main Entrance LED Sign

A. **Name of the Program:** LED Sign

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

As part of Kitchener-Wilmot Hydro's CDM program in 2005, an LED sign was installed above the main entrance to the Utility. The sign flashes helpful energy saving tips to customers. Overall exposure to the sign is quite high as it is visible to all customers coming through the front door as well as to drive-by traffic.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

			Cumulative Results:	
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Conservation Programs:				
Demand savings (kW): *Summer*				
Winter				
Energy saved (kWh):				
Other resources saved :				
Natural Gas (m3):				
Other (specify):				
Demand Management Programs:				
Controlled load (kW)				
Energy shifted On-peak to Mid-peak (kWh):				
Energy shifted On-peak to Off-peak (kWh):				
Energy shifted Mid-peak to Off-peak (kWh):				
Demand Response Programs:				
Dispatchable load (kW):				
Peak hours dispatched in year (hours):				
Power Factor Correction Programs:				
Amount of KVar installed (KVar):				
Distribution system power factor at beginning of year (%):				
Distribution system power factor at end of year (%):				

Line Loss Reduction Programs:

	lifecycle	in year	
Peak load savings (kW):			
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):			

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ -	$ 18,442.97
	Incremental O&M:		
	Incentive:		
	Total:	$ -	$ 18,442.97
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

Total direct cost to date is $18,442.97

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

In-House Retrofit Program

A. **Name of the Program:** In-House Retrofit

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

Kitchener-Wilmot Hydro is making numerous changes to its facilities so that it can stand as a model for energy conservation. In 2006, following an energy audit and associated engineering costs, all energy inefficient windows were replaced with more cost effective energy saving windows. The equipment cost is $41,725. The estimated energy saving is 175,000 kWh per year. The net TRC value is about $107,097. The benefit to cost ratio is 3.57. This project is ongoing.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Install energy efficient windows		
Number of participants or units delivered for reporting year:	1		
Measure life (years):	20		
Number of Participants or units delivered life to date	1		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ 148,821.96	$ 148,821.96
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)	$ 41,725.00	$ 41,725.00
Total TRC costs:	$ 41,725.00	$ 41,725.00
Net TRC (in year CDN $):	$ 107,096.96	$ 107,096.96
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.57	3.57

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*				
	Winter				
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings	
Energy saved (kWh):	3,500,000	29,167	29,167	29,167	
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*	$ 41,725.00	$ 41,725.00
	Incremental O&M:		
	Incentive:		
	Total:	$ 41,725.00	$ 41,725.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Fuel Switching - Electricity to Gas (LDC Specific)

A. **Name of the Program:** Fuel Switching - Electricity to Gas

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

Kitchener-Wilmot Hydro replaced the existing 210 kW electric boilers, which heat the office space, with natural gas boilers. The equipment cost is $137,640. The estimated energy saving is 500,000 kWh and 300 kW per year. The net TRC value is $438,116.10 and the benefit to cost ratio is 4.18.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Natrual gas boiler		
Number of participants or units delivered for reporting year:	1		
Measure life (years):	18		
Number of Participants or units delivered life to date	1		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 575,756.10*	*$ 575,756.00*
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)	*$ 137,640.00*	*137,640*
Total TRC costs:	*$ 137,640.00*	*137,640*
Net TRC (in year CDN $):	*$ 438,116.10*	*$ 438,116.00*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	4.18	4.18

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

Conservation Programs:

			Cumulative Results:
Demand savings (kW):	*Summer*	300	300
	Winter	300	300

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	9,000,000	83,333	83,333	83,333
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 137,640.00	$ 137,640.00
	Incentive:		
	Total:	$ 137,640.00	$ 137,640.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

LED Traffic Lights

A. **Name of the Program:** LED Traffic Lights

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

Kitchener-Wilmot Hydro has agreed to assist the Regional Municipality of Waterloo in converting 172 intersections from incandescent traffic lights to LED technology beginning in 2006. The equipment cost is about $619,200. The estimated energy saving is 1.75 MWh per year. The net TRC value is about $869,020. The benefit to cost ratio is 2.40.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Incandescent		
Efficient technology:	LED		
Number of participants or units delivered for reporting year:	172		
Measure life (years):	20		
Number of Participants or units delivered life to date	14		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 1,488,219.58*	*$ 1,488,219.58*
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)	*$ 619,200.00*	*$ 619,200.00*
Total TRC costs:	*$ 619,200.00*	*$ 619,200.00*
Net TRC (in year CDN $):	*$ 869,019.58*	*$ 869,019.58*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.40	2.40

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*				
	Winter				
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings	
Energy saved (kWh):	35,000,000	71,221	71,221	71,221	
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	**Cumulative Life to Date**
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 14,000.00	$ 14,000.00
	Total:	$ 14,000.00	$ 14,000.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Municipal Building Lighting Program

A. **Name of the Program:** Municipal Building Lighting Program

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

The City of Kitchener has been actively improving the energy efficiency of municipal buildings over the last twenty years and the City allocates a budget each year for improvements.
In keeping with this objective, Kitchener-Wilmot Hydro provided funding to the City of Kitchener to upgrade the lighting systems at Kitchener Memorial Auditorium, City Hall and the City Hall parking garage.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Ceiling mounted - quartz		
Efficient technology:	Compact fluorescent fixture		
Number of participants or units delivered for reporting year:	859		
Measure life (years):	7		
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ -	$ 121,519.05
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ -	$ 52,848.00
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:	$ -	$ 52,848.00
Net TRC (in year CDN $):	$ -	$ 34,335.52
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	-	2.30

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	39.14		
	Winter	39.14		
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	1,989,414	284,202	378,936	378,936
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:

	lifecycle	in year	
Peak load savings (kW):			
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		$ 52,848.00
	Incentive:		
	Total:		$ 52,848.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

Total direct cost to date is $52,848.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Fuel Switching - Electricity to Gas (Residential)

A. **Name of the Program:** Fuel Switching - Electricity to Gas

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

Kitchener-Wilmot Hydro and the local gas company, Kitchener Utilities, partnered to offer financial assistance to eligible residential customers in a fuel switching program. In 2006, 183 water heaters and 16 furnaces switched from electricity to gas. The equipment cost is $157,800 and direct program cost is $45,000. The estimated energy saving is 944 MWh and 65.33 kW per year. The net TRC value is $589,484. The benefit to cost ratio is 3.91.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Switch to gas water heater	Switch to gas furnace	
Number of participants or units delivered for reporting year:	183	16	
Measure life (years):	18	18	
Number of Participants or units delivered life to date	183	16	

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ 792,284.02	$ 792,284.02
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ -	
Incremental Measure Costs (Equipment Costs)	$ 157,800.00	157,800
Total TRC costs:	$ 202,800.00	202,800
Net TRC (in year CDN $):	$ 589,484.02	$ 589,484.02
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	3.91	3.91

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	65.33	65.33
	Winter	65.33	65.33

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	16,991,280	471,980	471,980	471,980
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 44,600.00	$ 44,600.00
	Total:	$ 44,600.00	$ 44,600.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Fall Coupon Program

A. **Name of the Program:** Fall Coupon Program

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

Kitchener-Wilmot Hydro, in partnership with Enerconnect / Energy Shop, issued 71,500 coupons to encourage customers to purchase energy saving products at Canadian Tires Stores. The equipment cost is $134,935 and direct program cost is $3,116. The estimated energy saving is 115.57 kW (winter peak), 30.7 kW (summer peak) and 488,797 kWh per year. The net TRC value is $191,459. The benefit to cost ratio is 5.56.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Programmable Thermostat	Compact Fluorescent Light	LED Christmas Lights
Number of participants or units delivered for reporting year:	244	3114	1300
Measure life (years):	18	4	30
Number of Participants or units delivered life to date	244	3114	1300

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		$ 233,414.00
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		*$ 15,316.00*
Incremental Measure Costs (Equipment Costs)		*$ 26,639.00*
Total TRC costs:		*$ 41,955.00*
Net TRC (in year CDN $):	*$ -*	*$ 191,459*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	0.00	5.56

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	30.7	30.7
	Winter	115.57	115.57

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	5,245,513	488,797	610,996	610,996
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 19,825.69	$ 35,110.52
	Incentive:		
	Total:	$ 19,825.69	$ 35,110.52
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Residential Education (General)

A. **Name of the Program:** Residential Education (General)

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

Kitchener-Wilmot Hydro is involved in numerous activities to encourage consumers to conserve energy.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	**Life-to-date TRC Results:**
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):		
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

			Cumulative Results:	
Conservation Programs:				
Demand savings (kW):	*Summer*			
	Winter			
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 64,363.39	$ 64,363.39
	Incentive:		
	Total:	$ 64,363.39	$ 64,363.39
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

Total cost includes: energy conservation advertising spots for two hockey seasons with the Kitchener Rangers Hockey Club, "Blackout Day" advertising, and other miscellaneous advertising.

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Energy Conservation Kits Program

A. **Name of the Program:** Energy Conservation Kits Program

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

Kitchener-Wilmot Hydro supplied 70 energy conservation kits to the 2005 Fall Energy Forum, held at Kitchener's Farmers Market and hosted by John Milloy M.P.P. In addition, 649 of these kits were supplied to the Region of Waterloo, which distributed the kits to eligible consumers in the City of Kitchener and the Township of Wilmot. Eligible consumers include low income consumers who reside in subsidized housing. The remaining kits were distributed at other local community energy and conservation functions.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)	
Base case technology:				
Efficient technology:	Compact Fluorescent Light	Shower Coach	Adhesive Weather Strips	
Number of participants or units delivered for reporting year:	1100	1100	1100	
Measure life (years):	3	12	25	
Number of Participants or units delivered life to date				

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		827,827.67
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		$ 15,396.99
Incremental Measure Costs (Equipment Costs)		$ -
Total TRC costs:		$ 15,396.99
Net TRC (in year CDN $):	$ -	$ 731,169.72
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ -	53.77

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

			Cumulative Results:
Conservation Programs:			
Demand savings (kW):	*Summer*	71.5	71.5
	Winter	71.5	71.5

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	15,945,600	1,328,800	1,347,256	1,347,256
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	**Cumulative Life to Date**
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		$ 15,396.99
	Incentive:		
	Total:		$ 15,396.99
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Low Income Program -Social Housing

A. **Name of the Program:** Low Income Program - Social Housing

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

Kitchener-Wilmot Hydro approved 100% funding for a lighting upgrade at one of the Region of Waterloo's social housing buildings located at 518 Greenfield Avenue in Kitchener. The equipment cost is $11,400. The estimated energy saving is 24.72 kW and 92,439 kWh per year. The net TRC value is $12,950 and the benefit to cost ratio is 2.26.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Upgrade lighting system		
Number of participants or units delivered for reporting year:	1		
Measure life (years):	4		
Number of Participants or units delivered life to date	1		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	$ 23,209.99	23,209.99
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):	$ -	
Incremental Measure Costs (Equipment Costs)	$ 10,260.00	$ 10,260.00
Total TRC costs:	$ 10,260.00	$ 10,260.00
Net TRC (in year CDN $):	$ 12,949.99	$ 12,949.99
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	2.26	2.26

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

Conservation Programs:

		Reporting Year	Cumulative Results:
Demand savings (kW):	*Summer*	24.72	24.72
	Winter	24.72	24.72

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	369,756	46,220	46,220	46,220
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 9,750.00	$ 9,750.00
	Total:	$ 9,750.00	$ 9,750.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Low Income Residential Education

A. **Name of the Program:** Low Income Program - Residential Education

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

Kitchener-Wilmot Hydro donated $3,000 to World-Wide Opportunities for Women (WWOW) to suppot its Home Energy $aver program. WWOW is a non-profit organization, which is a member of the Green Communities Association. The program targets low-income and immigrant residents in the Region of Waterloo to encourage them to improve the health of their household as well as their community. Through the program, two people from WWOW trained in home energy assessment audits, visit a household and complete a four-hour assessment. During the visit, WWOW provides education, small retrofits and assessment recommendations to the household. So far, WWOW has successfully conducted 4,800 green home visits in the Region of Waterloo.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):	$ -	$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*		
	Winter		

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ -	$ 3,000.00
	Incentive:		
	Total:	$ -	$ 3,000.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Pilot Program Funding with SHSC

A. **Name of the Program:** Energy Pilot Funding for Social Housing Services Corporation (SHSC)

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

The SHSC has commenced an "Energy Management Program" whereby they are conducting energy audits in over 5,000 social housing units in the Province of Ontario. Using key partnerships within the public and private sectors, including the Ministry of Energy, SHSC's program will serve as a central resource for energy management in the social housing sector. In the spring of 2005, energy consultants visited the pilot buildings to identify energy conservation measures and entered their findings into an Energy Management System. This on-line system will prioritize the various measures, recommend funding sources, assist housing providers in planning retrofits, and then monitor and report energy savings. Kitchener-Wilmot Hydro provided funding to SHSC for 91 unit townhouses within the Utility's service area.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	T12 lamps		
Efficient technology:	T8 lamps	motion sensor	smart thermostat
Number of participants or units delivered for reporting year:	91	91	91
Measure life (years):	3	10	18
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		*$ 136,840.00*
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		*$ 4,450.00*
Incremental Measure Costs (Equipment Costs)		*$ 116,020.00*
Total TRC costs:		*$ 120,470.00*
Net TRC (in year CDN $):	*$ -*	*$ 14,643.00*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		1.13

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	18.2	18.2
	Winter	18.2	18.2

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	2,402,127	343,161	400,355	400,355
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ -	$ 4,450.00
	Incentive:		
	Total:	$ -	$ 4,450.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

EnerGuide for Houses (REEP)

A. **Name of the Program:** EnerGuide for Houses (REEP)

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

Through the EnerGuide program, REEP conducts in-home evaluations for eligible residential customers. Through the course of the evaluations, each customer receives free CFL's.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):	$ -	$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

		Reporting Year	Cumulative Results:	
Conservation Programs:				
Demand savings (kW):	*Summer*			
	Winter			
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 21,732.89	$ 21,732.89
	Incentive:		
	Total:	$ 21,732.89	$ 21,732.89
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Key Account Seminars and Education

A. **Name of the Program:** Key Account Seminars and Education

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

Kitchener-Wilmot Hydro has been involved in numerous activities to educate its key account customers on energy conservation. Activities include brochures, calendars, informational booklets and seminars

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	**Life-to-date TRC Results:**
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):	$ -	$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

Cumulative Results:

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

Peak load savings (kW):			
	lifecycle	*in year*	
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	**Cumulative Life to Date**
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 2,306.86	$ 2,665.93
	Incentive:		
	Total:	$ 2,306.86	$ 2,665.93
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Energy Management Workshops

A. **Name of the Program:** Energy Management Workshops

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

Kitchener-Wilmot Hydro held or sponsored energy management workshops to educate its commercial customers.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:			
Number of participants or units delivered for reporting year:			
Measure life (years):			
Number of Participants or units delivered life to date			

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)		
Total TRC costs:		
Net TRC (in year CDN $):	$ -	$ -
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		

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

			Cumulative Results:	
		lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Conservation Programs:					
Demand savings (kW):	*Summer*				
	Winter				
Energy saved (kWh):					
Other resources saved :					
Natural Gas (m3):					
Other (specify):					
Demand Management Programs:					
Controlled load (kW)					
Energy shifted On-peak to Mid-peak (kWh):					
Energy shifted On-peak to Off-peak (kWh):					
Energy shifted Mid-peak to Off-peak (kWh):					
Demand Response Programs:					
Dispatchable load (kW):					
Peak hours dispatched in year (hours):					
Power Factor Correction Programs:					
Amount of KVar installed (KVar):					
Distribution system power factor at beginning of year (%):					
Distribution system power factor at end of year (%):					

Line Loss Reduction Programs:

Peak load savings (kW):			
	lifecycle	*in year*	
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:	$ 1,500.00	$ 9,143.35
	Incentive:		
	Total:	$ 1,500.00	$ 9,143.35
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Cool Shops Program

A. **Name of the Program:** Cool Shops Program (Clean Air Foundation)

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

Through its program, a Cool Shops representative visits small street-facing retail businesses in Kitchener. During each visit, the small business owner receives an energy audit, installation of two free CFLs and one free LED exit bulb retrofit kit, education in energy efficiency and money-saving discounts for CFLs, PAR fluorescent light bulbs and T8 lighting retrofits.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	15W CFL	LED Exit	11W CFL
Number of participants or units delivered for reporting year:	2977	1268	114
Measure life (years):	7	20	7
Number of Participants or units delivered life to date	2977	1268	114

B. **TRC Results:**

		Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		*$ 344,616.46*	*344,616.46*
[2] *TRC Costs ($):*			
Utility program cost (excluding incentives):		*$ 79,859.65*	*79,859.65*
Incremental Measure Costs (Equipment Costs)		*$ 40,426.34*	*40,426.34*
Total TRC costs:		*$ 120,285.99*	*120,285.99*
Net TRC (in year CDN $):		*$ 224,330.47*	*224,330.47*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		2.86	2.86

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	219.08	219.08
	Winter	219.08	219.08

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	*5,677,094*	*405,507*	*405,507*	*405,507*
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 79,859.65	$ 79,859.65
	Total:	$ 79,859.65	$ 79,859.65
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit b

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made

Lighting Retrofit Program

A. **Name of the Program:** Lighting Retrofit Program

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

KWH offered a lighting retrofit program targeted to industrial, commercial and institutional end-users with facility peak loads of greater than 50 kW. The program enables the customers to improve the quality of their lighting, lower maintenace cost, and increase equipment life. The equipment cost is $402,811.89. The estimated energy saving is 1,672 MWh and 290.05 kW per year. The net TRC value is $298,587.4 and the benefit to cost ratio is 1.82.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Upgrade lighting system		
Number of participants or units delivered for reporting year:	10		
Measure life (years):	7		
Number of Participants or units delivered life to date	10		

B. **TRC Results:**

		Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*		*$ 661,118.10*	*661,118.10*
[2] *TRC Costs ($):*			
Utility program cost (excluding incentives):			
Incremental Measure Costs (Equipment Costs)		*$ 362,530.70*	*362,530.70*
Total TRC costs:		*$ 362,530.70*	*362,530.70*
Net TRC (in year CDN $):		*$ 298,587.40*	*298,587.40*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		$ 1.82	1.82

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	290.05	290.05	
	Winter	290.05	290.05	
	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
Energy saved (kWh):	11,705,606	278,705	278,705	278,705
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 savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 119,054.52	$ 119,054.52
	Total:	$ 119,054.52	$ 119,054.52
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Power Factor Correction

A. **Name of the Program:** Power Factor Correction

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

KWH offered a power factor correction program targeted to industrial, commercial and institutional end-users with facility peak loads of greater than 50 kW. To date, the equipment cost is $11,140. The estimated energy savings is 33.8 kW. The net TRC value is $9,977 and the benefit to cost ratio is 1.9.

Measure(s):

	Measure 1	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:			
Efficient technology:	Power Factor Correction		
Number of participants or units delivered for reporting year:	1		
Measure life (years):	20		
Number of Participants or units delivered life to date	1		

B. **TRC Results:**

	Reporting Year	Life-to-date TRC Results:
[1] *TRC Benefits ($):*	*$ 21,117.14*	21117.14
[2] *TRC Costs ($):*		
Utility program cost (excluding incentives):		
Incremental Measure Costs (Equipment Costs)	*$ 11,140.00*	*$ 11,140.00*
Total TRC costs:	*$ 11,140.00*	*$ 11,140.00*
Net TRC (in year CDN $):	*$ 9,977.14*	*$ 9,977.14*
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$ 1.90	1.90

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

Cumulative Results:

Conservation Programs:

Demand savings (kW):	*Summer*	33.8	33.8
	Winter	33.8	33.8

	lifecycle	*in year*	*Cumulative Lifecycle*	Cumulative Annual Savings
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):	200	200
Distribution system power factor at beginning of year (%):	85%	85%
Distribution system power factor at end of year (%):	93%	93%

Line Loss Reduction Programs:

Peak load savings (kW):			
	lifecycle	*in year*	
Energy savings (kWh):			

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):		

D. **Actual Program Costs:**

		Reporting Year	Cumulative Life to Date
Utility direct costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Incentive:	$ 4,456.00	$ 4,456.00
	Total:	$ 4,456.00	$ 4,456.00
Utility indirect costs ($):	*Incremental capital:*		
	Incremental O&M:		
	Total:		

E. Assumptions & Comments:

[1] Benefits should be estimated if costs have been incurred and the technology has been deployed. Benefits reflect the present value of the measure for the number of units deployed in the year, i.e. the number of units times the net present value per unit benefit specified in the TRC Guide.

[2] For technologies which have not been deployed but for which the LDC has incurred costs, report only the TRC costs on a present value basis. Incentives (e.g. rebates) from the LDC to a customer are not a component of the TRC costs. However, payments made to a third party service provider to run an incentives program are program costs, and are to be included as TRC costs under the "Utility Program Costs" line.

Appendix C - Program and Portfolio Totals

Report Year: **2006**

1. Residential Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Fuel Switching - Electricity to Gas	$ 792,284	$ 202,800	$ 589,484	3.91	471,980	16,991,280	65	$ 44,600
Fall Coupon	$ -	$ -	$ -	0.00	488,797	0	0	$ 19,826
Residential Education (General)	$ -	$ -	$ -	0.00	0	0	0	$ 64,363
Energy Conservation Kits	$ -	$ -		0.00	1,328,800	0	0	$ -
Social Housing	$ 23,210	$ 10,260	$ 12,950	2.26	46,220	369,756	25	$ 9,750
Residential Education (Low Income)	$ -	$ -	$ -	0.00	0	0	0	$ -
WWOW	$ -	$ -	$ -	0.00	343,161	0	0	$ -
EnerGuide for Houses (REEP)	$ -	$ -	$ -	0.00	0	0	0	$ 21,733
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Residential**	$ 815,494	$ 213,060	$ 602,434	3.83	2,678,958	17,361,036	90	$ 160,272
Residential Indirect Costs not attributable to any specific program	→							
Total Residential TRC Costs		$ 213,060						
****Totals TRC - Residential**	**$ 815,494**	**$ 213,060**	**$ 602,434**	**3.83**				

2. Commercial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Key Account Seminars & Education	$ -	$ -	$ -	0.00	0	0	0	$ 2,307
Energy Management Workshops	$ -	$ -	$ -	0.00	0	0	0	$ 1,500
Lighting Retrofit	$ 661,118	$ 362,531	$ 298,587	1.82	278,705	11,705,606	290	$ 119,055
Power Factor Correction	$ 21,117	$ 11,140	$ 9,977	1.90	0	0	34	$ 4,456
Cool Shops	$ 344,616	$ 120,286	$ 224,330	2.86	405,507	5,677,094	219	$ 79,860
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Commercial**	$ 1,026,852	$ 493,957	$ 532,895	2.08	684,212	17,382,700	543	$ 207,177

Commercial Indirect Costs not attributable to any specific program	→								
Total TRC Costs		$ 493,957							
****Totals TRC - Commercial**	**$ 1,026,852**	**$ 493,957**	**$ 532,895**	**2.08**					

3. Institutional Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
LED Traffic Lights	$ 1,488,220	$ 619,200	$ 869,020	2.40	71,221	35,000,000	0	$ 14,000
Municipal Buildings	$ -	$ -	$ -	0.00	284,202	0	0	0
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Institutional**	$ 1,488,220	$ 619,200	$ 869,020	2.40	355,423	35,000,000	0	$ 14,000
Institutional Indirect Costs not attributable to any specific program	→							
Total TRC Costs		$ 619,200						
****Totals TRC - Institutional**	**$ 1,488,220**	**$ 619,200**	**$ 869,020**	**2.40**				

4. Industrial Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Name of Program A			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				

Name of Program J			$ -	0.00				
***Totals App. B - Industrial**	$ -	$ -	$ -	0.00	0	0	0	$ -
Industrial Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ -						
****Totals TRC - Industrial**	**$ -**	**$ -**	**$ -**	**0.00**				

5. Agricultural Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Name of Program A			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Agricultural**	$ -	$ -	$ -	0.00	0	0	0	$ -
Agricultural Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ -						
****Totals TRC - Agricultural**	**$ -**	**$ -**	**$ -**	**0.00**				

6. LDC System Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Capacitor Banks	$ 1,724,275	$ 509,448	$ 1,214,827	3.38	857,700	34,308,001	425	$ 324,018
Main Entrance LED Sign	$ -	$ -	$ -	0.00	0	0	0	$ -

In-House Retrofit	$ 148,822	$ 41,725	$ 107,097	3.57	29,167	3,500,000	0	$ 115,216
Electricity to Gas	$ 575,756	$ 137,640	$ 438,116	4.18	83,333	9,000,000	300	$ 137,640
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program C			$ -	0.00				
***Totals App. B - LDC System**	$ 2,448,853	$ 688,813	$ 1,760,040	3.56	970,200	46,808,001	725	$ 576,875
LDC System Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ 688,813						
****Totals TRC - LDC System**	**$ 2,448,853**	**$ 688,813**	**$ 1,760,040**	**3.56**				

7. Smart Meters Program

Only spending information that was authorized under the 3rd tranche of MARR is required to be reported for Smart Meters.

Report Year Gross C&DM Expenditures ($) →

8. Other #1 Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Administration	$ -	$ -	$ -	0.00	0	0	0	$ 8,391
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program F			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Other #1**	$ -	$ -	$ -	0.00	0	0	0	$ 8,391
Other #1 Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ -						
****Totals TRC - Other #1**	**$ -**	**$ -**	**$ -**	**0.00**				

9. Other #2 Programs

List each Appendix B in the cells below; Insert additional rows as required.

Note: To ensure the integrity of the formulas, please insert the additional rows in the middle of the list below.

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
Name of Program A			$ -	0.00				
Name of Program B			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program D			$ -	0.00				
Name of Program E			$ -	0.00				
Name of Program C			$ -	0.00				
Name of Program G			$ -	0.00				
Name of Program H			$ -	0.00				
Name of Program I			$ -	0.00				
Name of Program J			$ -	0.00				
***Totals App. B - Other #2**	$ -	$ -	$ -	0.00	0	0	0	$ -
Other #2 Indirect Costs not attributable to any specific program →								
Total TRC Costs		$ -						
****Totals TRC - Other #2**	**$ -**	**$ -**	**$ -**	**0.00**				

LDC's CDM PORTFOLIO TOTALS

	TRC Benefits (PV)	TRC Costs (PV)	$ Net TRC Benefits	Benefit/Cost Ratio	Report Year Total kWh Saved	Lifecycle (kWh) Savings	Total Peak Demand (kW) Saved	Report Year Gross C&DM Expenditures ($)
***TOTALS FOR ALL APPENDIX B**	$ 5,779,418	$ 2,015,030	$ 3,764,389	2.87	$ 4,688,792	$ 116,551,737	$ 1,358	$ 966,714
*Any **other** Indirect Costs not attributable to any specific program* →								
TOTAL ALL LDC COSTS		$ 2,015,030						
****LDC' PORTFOLIO TRC**	$ 5,779,418	$ 2,015,030	$ 3,764,389	2.87				

* The savings and spending information from this row is to be carried forward to Appendix A.

** The TRC information from this row is to be carried forward to Appendix A.

Attachment A – 2006 LED Sign Messages

The messages displayed are changed on a monthly basis. The sign displays MEET THE ENERGY CHALLENGE" in addition to the following example messages which have been displayed depending on the season:

- "Keep light fixtures clean. A cleaner bulb is a BRIGHTER bulb"
- "The greatest winter demand for electricity is 4PM to 9PM. Consider switching usage"
- "To save $$ turn your thermostat down at night and when you're away"
- "Unplug seldom used TV's. Electricity may be used even when turned off"
- "Who helps you to save money by using LESS of their product? WE DO!"
- "Visit us on the Web for more energy and $$ saving tips. www.kwhydro.on.ca"
- "Wrap your electric water heater in a special tank blanket to save electricity"
- "Make a New Year's resolution to join the ENERGY CHALLENGE and reduce your energy consumption by 10%"
- "January is usually the darkest and coldest month of the year. Energy usage is higher in the morning and evening. Shift to off-peak times"
- "Don't forget to clean or replace furnace filters each month during the high heating season"
- "Put on a sweater and set your thermostat to the lowest comfortable setting. Save energy $$$!"
- "Reversible ceiling fans push down hot air in the winter"
- "New electronics over the holiday season??? Don't forget to use the 'sleep mode' and cut energy use in half"
- "Wash your clothes in cold water. Heating the water can use 85% more energy!"
- "Clean Lint filters in your dryer. Clogged filters can use 30% more energy"
- "Defrost freezers to keep them working efficiently"
- "Cold weather and shorter days keeps energy demand high"
- "Switch non-essential chores to off-peak times"
- "Keep the cold air out. Close blinds and curtains at night"
- "Switch to lower wattage bulbs. Your lights may be brighter than you need"
- "Don't leave the refrigerator door open. 30% of the cooled air will escape"
- "Choose to turn off unnecessary lights & lower thermostats to lower your energy usage"
- "A kilowatt saved is a kilowatt that doesn't have to be generated!"
- "Always turn off the lights when leaving a room. It's a myth that it takes more energy to turn a light on!"
- "Microwave ovens use about 50% less energy than conventional ovens!"
- "Is your furnace more than 20 years old? It may be more cost-effective to replace it with a new unit"
- "Use your computer's sleep or idle mode during periods of inactivity"
- "Use light timers to help save energy"

- "Make sure your attic is well insulated and ventilated to avoid heat build-up"
- "Air dry your dishes. You can save 10% of the cost of operating your dishwasher"
- "It's barbeque season! Enjoy cooking outdoors and save energy"
- "Air conditioning can account for half of your home's energy consumption. "Program your system to turn off during hours when no one is around"
- "Keep lamps away from thermostats. The heat produced can cause your A/C to run more than needed"
- "Keep window coverings closed during the day to prevent heat gain from the sun"
- "Use low-voltage or solar lighting to light walkways, patios and decks"
- "A bulb isn't just a bulb anymore. Switch to CFL bulbs and use 75% less energy!"
- "Hot July days keeps demand high throughout the day. Shift or reduce your usage from high demand hours"
- "Install a programmable thermostat. It is one of the easiest ways to save energy $"
- "Vacuum or wipe dust from your air conditioner's evaporator coil to improve efficiency and lower energy usage!"
- "It's vacation time! Don't pay to cool an empty house. Turn your air conditioner off when you leave for a weekend or longer"
- "Put swimming pool pumps on a timer to run during off-peak hours"
- "Install ceiling fans to supplement or as an alternative to air conditioning"
- "Put a timer on room air conditioners if there's no one home during the day"
- "Electronic devices draw a small yet constant amount of power … Unplug as many as you can"
- "Get some fresh air! Consider using a clothesline to dry your laundry"
- "Save $ on your A/C costs. Cool your home to only 24C to 26C instead of the low 20's"
- "Put energy costs on ice! Don't let freezers build up more than 6mm of frost"
- "To maximize heating & cooling efficiency, move furniture away from forced air registers"
- "Turn off unnecessary lights. They produce heat that works against the A/C"
- "Peak demand is shifting between 1-2 PM. Delay energy use until later in the day"
- "Keep stovetop burner reflectors clean. They will reflect the heat more efficiently"
- "Consider a maintenance check on your furnace to ensure peak efficiency"
- "Switch non-essential chores to off-peak times usually later in the evening"
- "Check your attic insulation. Upgrading from 3" to 12" can cut heating costs by 20%"
- "Programmable thermostats can reduce your annual heating bill by up to 15%"
- "Drain a pail of water from the faucet at the bottom of your water heater to remove sediment that reduces energy efficiency"

- "Be aware! Incandescent bulbs known as 'long life' last a long time but give 30% less light while using the same amount of energy"
- "Keep the cold air out! Check for drafts around windows, doors & electrical outlets"
- "Light up the holiday season for less! Switch to seasonal LED lights!
- "Motion sensors are ideal and can also double as security lights"
- "Using a dishwasher is more efficient that hand washing dishes 3-4 times a day"
- "Don't overload your dryer. Large loads make the dryer work longer and waste energy"
- "Seasonal LED lights use 95% less electricity and last 100 times longer than traditional holiday lights"
- "Consider using a humidifier. Properly humidified air feels warmer and allows you to turn your thermostat down"
- "For every degree above 20 degrees that your thermostat is set, your heating costs increase by 5%"
- "While doing your holiday cooking, keep the lids on the pots. You'll save energy and speed up your cooking time!"
- "Use insulating curtains to reduce excessive heat loss from windows at night"

Kitchener-Wilmot Hydro Inc.
CDM Plan - Budget to Actual

General Program Category	Expenditures to Dec. 2006	Budget			Variances	
		Original	Changes	Revised	(Over Budget) / Under Budget	% Remaining
Capital Expenditures						
A. Utility Side Investments	**780,747**	**1,300,000**	**(232,360)**	**1,067,640**	**286,893**	**27%**
A.1. Capacitor banks, line loss / load balancing optimization	509,448					
A.2. KW Hydro in-house retrofit program	133,659					
A.3. Fuel switching - electricity to gas	137,640					
Operation and Maintenance Cost						
B. Shareholder / Community	**66,848**	**250,000**	**-**	**250,000**	**183,152**	**73%**
B.1. LED traffic lights	14,000					
B.2. Municipal buildings program	52,848					
C. Residential - General	**144,074**	**230,000**	**(80,640)**	**149,360**	**5,286**	**4%**
C.1. Fuel switching - electricity to gas	44,600					
C.2. Fall coupon program	35,111					
C.3. Residential Consumers Education	64,363					
D. Residential - Low Income	**32,597**	**200,000**	**-**	**200,000**	**167,403**	**84%**
D.1. Low income program with Region	25,147					
D.2. Audit / educate / retrofit pilot	3,000					
D.3. Audit / educate / roll out	4,450					
E. Residential - Electrically Heated Homes	**21,733**	**100,000**	**(65,000)**	**35,000**	**13,267**	**38%**
E.1. EGH (EnerGuide for houses) increased incentive	21,733					
F. General Service (ICI) Programs	**215,179**	**200,000**	**408,000**	**608,000**	**392,821**	**65%**
F.1. Key account seminars / info	2,666					
F.2. Energy management workshops	9,143					
F.3. Cool shops	79,860					
F.4. Lighting retrofit program	119,055					
F.5. Power factor correction program	4,456					
G. Administration and Planning	**26,043**	**70,000**	**(30,000)**	**40,000**	**13,957**	**35%**
G.1. Planning, reporting, hearings, monitoring and evaluation	26,043					

SUMMARY OF CDM EXPENDITURES						
Capital	**780,747**	**1,300,000**	**(232,360)**	**1,067,640**	**286,893**	**12%**
Non Capital	**506,474**	**1,050,000**	**232,360**	**1,282,360**	**775,886**	**33%**
	1,287,221	**2,350,000**	**-**	**2,350,000**	**1,062,779**	**45%**