BRANTFORD POWER INC.
RP-2004-0203/EB-2004-0478
CONSERVATION AND DEMAND MANAGEMENT ANNUAL REPORT

1. INTRODUCTION

In developing its 2004-05 Conservation and Demand Management Plan, Brantford Power was guided by the following principles:

- Avoid lost opportunities and keep options open
- The portfolio should include a mix of conservation assets and programs
- The program should address all customer classes
- The program should build on existing programs and leverage other sources of funding, where possible, and
- The portfolio should provide experience that will be helpful in the design and delivery of future conservation and demand management programs.

Brantford Power's 2004-05 conservation and demand management portfolio comprised the following core program elements:

1. Distribution System Improvements
2. Smart meters for commercial and industrial customers
3. Key accounts seminar series targeted at commercial and industrial customers
4. Residential water heater load management
5. "Conserving Homes", a low-income consumer retrofit program
6. Customer outreach
7. Technology and program outreach, and
8. Program administration and planning.

Each of these programs is discussed in greater detail in Section 2, 3 and 4 along with Appendices A and B, below

To provide for flexibility in its program offering, the portfolio also included the following supplemental programs:

- LED Christmas lighting
- LED Christmas light conversion incentive program
- LED traffic light conversion
- Room air conditioner [RAC] program
- Cool Shops Brantford, energy audits targeting small commercial customers
- Accelerated smart meters for commercial / industrial customers, and
- Memberships and sponsorships.

2. EVALUATION OF THE CONSERVATION AND DEMAND MANAGEMENT PLAN

With gross expenditures in the amount of $1,340,000 for 2004/05 conservation and demand management programming, the net TRC value of the portfolio is $179,185.00 with a benefit to cost ratio of 1.18. The Evaluation of the Conservation and Demand Management Plan is set out in Appendix A to this report.

3. DISCUSSION OF PROGRAMS

3.1 DISTRIBUTION SYSTEM IMPROVEMENTS

The Distribution System Improvements program involved the upgrade of one of the oldest and least electrically efficient subdivisions in the Brantford Power distribution service territory, the Mayfair Subdivision, from 4.16 kV to 27.6 kV. Only those costs pertaining to voltage conversion through replacement of transformers and primary cables, were attributed to conservation and demand management. The net TRC value of the Distribution System Improvements program is $190,289.00 with a benefit to cost ratio of 1.21.

3.2 SMART METERS FOR COMMERCIAL AND INDUSTRIAL CUSTOMERS

As part of the 2004/05 conservation and demand management program, meters at commercial or industrial customer premises (>50kW) that were coming up for their six-year calibration in 2005 were replaced with interval meters. As a result of replacing meters when they were being pulled for recalibration, only capital costs were incurred and subsequent installation costs were avoided.

With expenditures of $50,000 for the smart meter program, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

3.3 KEY ACCOUNTS SEMINAR SERIES TARGETED AT COMMERCIAL AND INDUSTRIAL CUSTOMERS

In collaboration with existing business associations, Brantford Power hosted a key accounts seminar series comprising three breakfast seminars, geared to commercial and industrial customers.

The inaugural seminar, at which the IESO's Vice President of Market Series was guest speaker, addressed wholesale electricity market requirements as they pertained to larger customers billed for electricity on hourly market prices; 76 participants attended the seminar.

The second seminar with 76 participants was entitled "Seven Steps to Good Energy Management" and featured representatives from Natural Resources Canada.

The third seminar in the series featured a panel discussion among representatives from local industries and institutions with expertise in commercial and industrial energy management

who explored various energy conservation strategies in industrial, commercial and institutional settings. There were 54 participants at the third seminar in the series.

With expenditures of $9,457.07 for the Key Accounts Seminar Series, there were no kWh or kW savings identified. As a result, TRC benefits do not apply to this program.

3.4 RESIDENTIAL WATER HEATER LOAD MANAGEMENT

Prior to market opening, Brantford Power operated a load management system that could shed load from Brantford Power owned load control units on 3000 electric water heaters with a connected load of approximately 9 MW and a demand load of approximately 4 MW.

The load control program was idled with market opening. As a result, current staff did not have experience with the program and system testing. As well, upgrades to software and hardware were required to reactivate the system.

Conservation and demand management expenditures in 2005 in the amount of $86,096.92 including hardware and software upgrades, staff training and an incentive of $1.50 per month per participant to retain existing participants, were costs towards reactivating the system to control loads in 2006. Because the load control management system was not operated in 2005 beyond some limited system tests, there were no kW savings and, as a result, TRC benefits do not apply to this program.

3.5 "CONSERVING HOMES" LOW INCOME CONSUMER RETROFIT PROGRAM

In collaboration with Share the Warmth, Brantford Power developed and implemented a pilot program specifically targeted to low income households in Brantford including homeowners and tenant-occupied premises where occupants directly pay their electricity bills.

Participants with incomes, which are at or below Statistics Canada's pre-tax, post-transfer Low-income Cut-off (LICO) qualified for the program. The program comprised initial in-home energy assessments with energy conservation education, installation of appropriate basic energy conservation measures such as compact fluorescent bulbs, clothes line kits, pipe insulation and hot water heater tank wraps.

As a pilot program, the expenditures of $120,523.71 included program design and start-up costs resulting in a net TRC value of (37,368.08).

3.6 CUSTOMER OUTREACH

In partnership with the Niagara Erie Public Power Association [NEPPA], customer outreach comprised the development and delivery of the Conserver Joe information campaign geared to residential customers.

With expenditures of $9,207.24 for Customer Outreach, there were no quantifiable kWh or kW savings. As a result, TRC benefits do not apply to this program.

3.7 TECHNOLOGY AND PROGRAM RESEARCH

Additional research into technology to capture landfill gas for use to generate electricity was undertaken.

With expenditures of $29,388.57 for Technology and Program Research, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

3.8 PROGRAM ADMINISTRATION AND PLANNING

Program administration and planning comprised $35,814.81 for external assistance to design and implement the 2004/05 Conservation and Demand Management Plan. As there were no kWh or kW savings, TRC benefits do not apply to the program.

From the supplementary programs, the following two programs were delivered:

3.9 LED TRAFFIC LIGHT CONVERSION

The LED Traffic Light Conversion program involved replacement of traffic signals at seven intersections and two flashing beacon installations with LED lamps on the Wayne Gretzky Parkway.

With expenditures of $25,331.40 in 2004/05 for this program, there was a net TRC benefit of $26,264.34 and a benefit to cost ratio of 2.04.

3.10 ACCELERATED SMART METERS

The Accelerated Smart Meters Program was an extension of the Smart Meters program for commercial and industrial customers discussed above.

With expenditures of $70,880.28 for the accelerated smart meter program, there were no impacts in kWh or kW. As a result, TRC benefits do not apply to this program.

3.11 MEMBERSHIPS AND SPONSORSHIPS

In order to remain informed and share information about current developments in conservation and demand management, Brantford Power joined the Canadian Energy Efficiency Alliance in 2004 and 2005.

With expenditures of $3,300.00 for the memberships and sponsorships program, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

4. LESSONS LEARNED

The 2004/05 Conservation and Demand Management program provided the opportunity for staff to gain experience in the design and delivery of conservation and demand management programs, as well as develop methodologies for tracking, monitoring and evaluating those programs within the Total Resources Cost test framework.

With respect to specific programs in the 2004/05 Conservation and Demand Management portfolio, the following lessons were learned:

4.1 **Distribution System Improvements** converting voltages from 4.16 kV to 27.6 kV resulted in a net TRC value of $190,289.00 and a benefit to cost ratio of 1.21 confirmed the benefits of voltage conversion as a sustained conservation and demand management program.

4.2 The **Key Accounts Seminar Series** with 3 seminars attended by a total of 206 participants demonstrated the interest in the commercial and industrial sector in conservation and demand management. Many of the participants in the seminars were actively involved in in-house conservation and demand activities indicating a capacity within the commercial and industrial sectors to undertake conservation and demand initiatives with appropriate price signals in place. Some participants, however, indicated an expectation or requirements for short payback periods of one year or less, when making Conservation and Demand Management investments.

4.3 The **Residential Water Heater Load Control Program**, which was an existing Brantford Power program idled at market opening, focused on system upgrades and staff training in order to reactivate the system. The 2004/05 provided staff the opportunity to update their skills to operate the load control system.

4.4 **"Conserving Homes", the low income consumer retrofit pilot program**, while challenging in terms of program design and customer outreach, was an important component of the 2004/05 Conservation and Demand Management portfolio providing needed services to the particular group of low income consumers. Through partnership, Share the Warmth brought its expertise in the area of low-income energy consumers to the design and delivery of the program. Because

reductions in energy consumption as a result of home assessments and parallel customer education about electricity conservation could not be quantified, those two elements of the program, critical to changing consumer behaviours, did not yield TRC benefits. While the prescribed 10% free ridership rate was used for purposes of TRC calculations, Brantford Power suggests, given the target participants limited financial resources to acquire basic conservation measures like compact flourescent bulbs, that the free ridership for this particular group of customers may be much lower.

4.5 Although **Customer Outreach** through communications and bill stuffers did not yield quantifiable electricity reductions, Brantford Power suggests that customer communications are critical to changing consumer electricity consumption behaviours and are a vital part of a Conservation and Demand Management program.

4.6 The **LED Traffic Signal Conversion Program** proved to be an easily implemented Conservation and Demand Management program with a net TRC value of $36,264.34 and a benefit to cost ratio of 2.04.

5. CONCLUSION

Brantford Power is pleased to report that the programs outlined in our 2004-2005 Conservation and Demand Management Plan have been delivered. Our total CDM expenditures of $1.34 million, representing our entire third tranche rate increase, resulted in a positive net TRC benefit. The programs we delivered, notably the groundbreaking low income conservation program "Conserving Homes," were very well received by customers. We learned from our 2004-2005 programs, and Brantford Power remains committed to delivering Conservation and Demand Management to our customers.

Appendix A - Evaluation of the CDM Plan

	Total	Distribution System Improvement	Smart Meters (C&I)	Key Account Seminar Series	Residential Water Heating Load Control	Low Income Consumer Retrofit	Customer Outreach	Technology & Program Research	Program Admin. & Plng.	LED Traffic Light Conversion	Accelerated Smart Meters (C&I)	Memberships & Sponsorships
Net TRC value ($):	$179,185	$190,289	n/a	n/a	$ -	-$ 37,368.08	n/a	n/a	n/a	$ 26,264.34	n/a	n/a
Benefit to cost ratio:	1.18	1.21	n/a	n/a	n/a	0.48	n/a	n/a	n/a	2.04	n/a	n/a
Number of participants or units delivered:	1,179	n/a	0	0	0	1,178	n/a	n/a	0	1	0	0
Total KWh to be saved over the lifecycle of the plan (kWh):	33,746,161	32,243,390	n/a	0	n/a	583,187	n/a	n/a	n/a	919,584	n/a	n/a
Total in year kWh saved (kWh):	1,158,760	921,240	n/a	0	n/a	122,573	n/a	n/a	n/a	114,948	n/a	n/a
Total peak demand saved (kW):	160	145	n/a	0	n/a	2	n/a	n/a	n/a	13	n/a	n/a
Total kWh saved as a percentage of total kWh delivered (%):	*0.114%*	*0.090%*	n/a	n/a	n/a	*0.012%*	n/a	n/a	n/a	*0.011%*	n/a	n/a
Peak kW saved as a percentage of LDC peak kW load (%):	*0.083%*	*0.076%*	n/a	n/a	n/a	*0.001%*	n/a	n/a	n/a	*0.007%*	n/a	n/a
Gross in year C&DM expenditures ($):	$1,340,000	$ 900,000.00	$ 50,000.00	$ 9,457.07	$ 86,096.92	$ 120,523.71	$ 9,207.24	$ 29,388.57	$ 35,814.81	$ 25,331.40	$ 70,880.28	$ 3,300.00
Expenditures per KWh saved ($/kWh):*	0.04	$0.03	n/a	n/a	n/a	$0.21	n/a	n/a	n/a	$0.03	n/a	n/a
*Expenditures per KW saved ($/kW)**:*	$8,390	$6,207	n/a	n/a	n/a	$75,564	n/a	n/a	n/a	n/a	n/a	n/a

Utility discount rate (%):	7.7933

*Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate energy savings.
**Expenditures include all utility program costs (direct and indirect) for all programs which primarily generate capacity savings.
Total kWh delivered 1,019,297,494

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Distribution System Improvements

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

The Distribution System Improvements program involved the upgrade of one of the oldest and least electrically efficient subdivisions in the Brantford Power distribution service territory, the Mayfair Subdivision, from 4.16 kV to 27.6 kV. Only those costs pertaining to voltage conversion through replacement of transformers and primary cables, were attributed to conservation and demand management. The net TRC value of the Distribution System Improvements program is $190,289.00 with a benefit to cost ratio of 1.21.

Measure(s):

	System Losses	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	4 kV System		
Efficient technology:	27.6 kV System		
Number of participants or units delivered:			
Measure life (years):	35		

B. **TRC Results:**

TRC Benefits ($):		*1,090,289*
TRC Costs ($):		
Utility program cost (less incentives):	$	900,000.00
Participant cost:		
Total TRC costs:	$	900,000.00
Net TRC (in year CDN $):		$190,288.79
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		1.21

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

Conservation Programs:

Demand savings (kW):	*Summer*		145
	Winter		125
	lifecycle		*in year*
Energy saved (kWh):	*32,243,390*		921,240
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 900,000.00
	Incremental O&M:	
	Incentive:	
	Total:	$ 900,000.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Accelerated Smart Meters (C&I)

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

The Accelerated Smart Meters Program was an extension of the Smart Meters program for commercial and industrial customers discussed above.

With expenditures of $70,880.28 for the accelerated smart meter program, there were no impacts in kWh or kW. As a result, TRC benefits do not apply to this program.

Measure(s):

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

B. **TRC Results:**

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

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 70,880.28
	Incremental O&M:	
	Incentive:	
	Total:	$ 70,880.28
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Memberships & Sponsorships

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

In order to remain informed and share information about current developments in conservation and demand management, Brantford Power joined the Canadian Energy Efficiency Alliance in 2004 and 2005.

With expenditures of $3,300.00 for the memberships and sponsorships program, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

Measure(s):

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

B. **TRC Results:**

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

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 3,300.00
	Incentive:	
	Total:	$ 3,300.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Smart Meters (C&I)

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

As part of the 2004/05 conservation and demand management program, meters at commercial or industrial customer premises (>50kW) that were coming up for their six-year calibration in 2005 were replaced with interval meters. As a result of replacing meters when they were being pulled for recalibration, only capital costs were incurred and subsequent installation costs were avoided.

With expenditures of $50,000 for the smart meter program, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

Measure(s):

Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

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

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 50,000.00
	Incremental O&M:	
	Incentive:	$ -
	Total:	$ 50,000.00
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Key Account Seminar Series

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

In collaboration with existing business associations, Brantford Power hosted a key accounts seminar series comprising three breakfast seminars, geared to commercial and industrial customers. The inaugural seminar, at which the IESO's Vice President of Market Series was guest speaker, addressed wholesale electricity market requirements as they pertained to larger customers billed for electricity on hourly market prices; 76 participants attended the seminar. The second seminar with 76 participants was entitled "Seven Steps to Good Energy Management" and featured representatives from Natural Resources Canada. The third seminar in the series featured a panel discussion among representatives from local industries and institutions with expertise in commercial and industrial energy management who explored various energy conservation strategies in industrial, commercial and institutional settings. There were 54 participants at the third seminar in the series.

With expenditures of $9,457.07 for the Key Accounts Seminar Series, there were no quanitifiable kWh or kW savings. As a result, TRC benefits do not apply to this program.

Measure(s):

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

B. **TRC Results:**

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

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 9,457.07
	Incentive:	
	Total:	$ 9,457.07
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Residential Water Heating Load Management

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

Prior to market opening, Brantford Power operated a load management system that could shed load from Brantford Power owned load control units on 3000 electric water heaters with a connected load of approximately 9 MW and a demand load of approximately 4 MW load.

The load control program was idled with market opening. As a result, current staff did not have experience with the program and system testing. As well, upgrades to software and hardware were required to reactivate the system.

Conservation and demand management expenditures in 2005 in the amount of $86,096.92 including hardware and software upgrades, staff training and an incentive of $1.50 per month per participant to retain existing participants, were costs towards reactivating the system to control loads in 2006. Because the load control management system was not operated in 2005 other than some limited system testing, there were no kW savings and, as a result, TRC benefits do not apply to this program.

Measure(s):

Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

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

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	$ 86,096.92
	Incremental O&M:	
	Incentive:	
	Total:	$ 86,096.92
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Low Income Consumer Retrofit

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

In collaboration with Share the Warmth, Brantford Power developed and implemented a pilot program specifically targeted to low income households in Brantford including homeowners and tenant-occupied premises where occupants directly pay their electricity bills.

Participants with incomes, which are at or below Statistics Canada's pre-tax, post-transfer Low-income Cut-off (LICO) qualified for the program. The program comprised initial in-home energy assessments with energy conservation education, installation of appropriate basic energy conservation measures such as compact fluorescent bulbs, clothes line kits, pipe insulation and hot water heater tank wraps.

As a pilot program, the expenditures of $120,523.71 included program design and start-up costs and resulted in a net TRC value of (37,368.08).

Measure(s):

	Indoor Lighting	Indoor Lighting	Miscellaneous
Base case technology:	60W Incandescent	100W Incandescent	Average existing stock
Efficient technology:	CFL Screw-In 15W	CFL Screw-In 23W	Clothes Line Kit
Number of participants or units delive	1007	53	65
Measure life (years):	4	4	10
	Water Heating - Avg. Res. Home	Water Heating - Avg. Res. Home	
	Average existing stock	Average existing stock	
	Pipe Insulation (6-10')	Tank Wrap	
	39	14	
	6	6	

B. **TRC Results:**

TRC Benefits ($):		*34,237.0*
TRC Costs ($):		
	Utility program cost (less incentives):	$ 65,449.13
	Participant cost:	$ 6,155.95
	Total TRC costs:	$ 71,605.08
Net TRC (in year CDN $):		-$ 37,368.08
Benefit to Cost Ratio (TRC Benefits/TRC Costs):		$ 0.48

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

Conservation Programs:

Demand savings (kW):	*Summer*		1.6
	Winter		23.3
		lifecycle	*in year*
Energy saved (kWh):		*583,187*	122,573
Other resources saved :			
	Natural Gas (m3):		
	Other (specify):		

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 114,367.76
	Incentive:	$ 6,155.95
	Total:	$ 120,523.71
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Customer Outreach

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

In partnership with the Niagara Erie Public Power Association [NEPPA], customer outreach comprised the development and delivery of the Conserver Joe information campaign geared to residential customers.

With expenditures of $9,207.24 for Customer Outreach, there were no quantifiable kWh or kW savings. As a result, TRC benefits do not apply to this program.

Measure(s):

Base case technology:			
Efficient technology:			
Number of participants or units delivered:			
Measure life (years):			

B. **TRC Results:**

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

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

Conservation Programs:

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

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 9,207.24
	Incentive:	
	Total:	$ 9,207.24
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Technology & Program Research

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

Additional research into technology to capture landfill gas for use to generate electricity was undertaken.

With expenditures of $29,388.57 for Technology and Program Research, there were no kWh or kW savings. As a result, TRC benefits do not apply to this program.

Measure(s):

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

B. **TRC Results:**

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

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 29,388.57
	Incentive:	
	Total:	$ 29,388.57
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** Program Administration & Plng.

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

Program administration and planning comprised $35,814.81 for external assistance to design and implement the 2004/05 Conservation and Demand Management Plan. As there were no kWh or kW savings, TRC benefits do not apply to the program.

Measure(s):

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

B. **TRC Results:**

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

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 35,814.81
	Incentive:	
	Total:	$ 35,814.81
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

1. There were no results for this program in 2005

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

Appendix B - Discussion of the Program

(complete this section for each program)

A. **Name of the Program:** LED Traffic Light Conversion

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

The LED Traffic Light Conversion program involved replacement of traffic signals at seven intersections and two flashing beacon installations with LED lamps on the Wayne Gretzky Parkway.

With expenditures of $25,331.40 in 2004/05 for this program, there was a net TRC benefit of $26,264.34 and a benefit to cost ratio of 2.04.

Measure(s):

	LED Traffic Signals	Measure 2 (if applicable)	Measure 3 (if applicable)
Base case technology:	Avg. Existing Stock		
Efficient technology:	LED Traffic Signals		
Number of participants or units delive	9		
Measure life (years):	8		

B. **TRC Results:**

TRC Benefits ($):	*$*	*51,595.74*
TRC Costs ($):		
Utility program cost (less incentives):	$	25,331.40
Participant cost:		
Total TRC costs:	$	25,331.40
Net TRC (in year CDN $):	$	26,264.34
Benefit to Cost Ratio (TRC Benefits/TRC Costs):	$	2.04

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

Conservation Programs:

Demand savings (kW):	*Summer*		13.1
	Winter		13.1
		lifecycle	*in year*
Energy saved (kWh):		*919,584*	114,948
Other resources saved :			
Natural Gas (m3):			
Other (specify):			

Demand Management Programs:

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

Demand Response Programs:

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

Power Factor Correction Programs:

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

Line Loss Reduction Programs:

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

Distributed Generation and Load Displacement Programs:

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

Other Programs (specify):

Metric (specify):	

D. **Program Costs*:**

Utility direct costs ($):	*Incremental capital:*	
	Incremental O&M:	$ 25,331.40
	Incentive:	
	Total:	$ 25,331.40
Utility indirect costs ($):	*Incremental capital:*	
	Incremental O&M:	
	Total:	
Participant costs ($):	*Incremental equipment:*	
	Incremental O&M:	
	Total:	

E. Comments:

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