2006 Annual Report
CDM Third Tranche Funding, Peterborough Distribution Inc.

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Introduction

Our Conservation and Demand Management program for 2006 included progress on the following six initiatives:

Installation of Thermal Storage Electric Heaters

In co-operation with the local social housing authority, the LDC provided financial, technical and administrative assistance to convert 124 electrically heated units from baseboard electric heating to electric thermal storage heating.

The non-ducted heaters are designed to heat the room or area into which they are placed. During off-peak hours, heaters convert electricity into heat and store that heat in specially designed high-density ceramic bricks capable of storing vast amounts of heat for extended periods of time. A fan inside the unit circulates this stored heat evenly and quietly as the room thermostat calls for heat.

Radio Signals to Control Appliances and Shift Usage to Off Peak Periods

We have developed a radio signal system that may be used by customers to control appliances and shift discretionary use of electricity to off peak times. The signals are currently provided at no cost to the customer and will automatically disable appliances connected to the in-home controller and enable the appliance at an 'off peak' time. Appliances such as electric water heaters, dishwashers, pool pumps, clothes washers and electric dryers may be controlled, but have a manual override button to permit the customer to use the appliance during a control period if necessary.

Energy Star Appliance Promotion

This program provides a rebate incentive to customers purchasing new 'Energy Star' rated appliances. It is a continuation of the original rebate program which we applied for to assist customers forced to replace

appliances after the July 2004 Flood. The program involves the customer completing a form and bringing in the receipt. Customer Service activity involves researching that the appliance qualifies as an Energy Star appliance and applying the rebate to the customer's utility account.

Appliance retailers participated in the program by notifying customers that it was available and by providing forms.

Appliance Load Monitors

The LDC provides the loan of load monitors to customers who use them to measure how much energy is being used by various appliances and devices within their home or business. Customers are asked to complete a form providing information on which appliance(s) they monitored and what action they expect to take to reduce consumption or demand.

This is an educational tool intended to help customers be more prudent with their hydro consumption.

Public Education Programs

Our goal is to promote electrical safety, conservation and demand management through participation in trade shows, home shows and advertisement through various media.

At present the LDC provides a safety program to all of the schools within its service territory. This program will be augmented to provide electricity conservation along with the safety messages.

Lighting for Social Housing

A new initiative for 2006, which we just started reporting on in the third quarter, involves the replacement of incandescent light bulbs with compact fluorescent light bulbs in 1688 Social Housing units.

Evaluation of the CDM Plan

Please see enclosed Appendix A.

Discussion of the Program

Please see enclosed Appendix B for each of the CDM programs worked on in 2006

Lessons Learned

The lessons learned in the 2006 Conservation and Demand Management year are as follow:

Storage Heating

Challenges Faced

- As Social Housing pays for heat in these units, there is a risk of tenants not giving adequate consideration to the savings benefit. ie. Opening a window instead of turning down the heat. Educating the tenants of the overall benefit mitigates this risk
- Peterborough Housing was cautious in allowing the implementation of this program. It was a challenge to convince them of the benefits of this initiative without up front documentation and history to substantiate the benefits they could expect. Being new technology, this was unavailable and was a learn as you go experience for both of us.
- An upgrade required to the heating service panel was not originally anticipated and cut into the budget
- After installation of heaters at the tops of stairs, we were notified that this did not comply with building code as they increased a potential hazard of young children climbing up and over the adjacent retaining wall and falling into the stairs. This was rectified but building the unit up to the same height as the retaining wall.

Customer Reaction

- The tenants were by and large indifferent, as they did not experience direct benefit.
- There were some comments made about the increased size of the heaters taking up more space than the old baseboard heaters.
- Peterborough Housing was very pleased with the results.

Benefits to Customers

- The tenants benefited from an overall warmer and improved heating system. The difference was the fan within the unit circulating the heat.
- Peterborough Housing benefited from an upgraded electrical panel and heating system.
- This initiative has helped us educate our customers and raise their awareness of the benefits of energy conservation.
- The LDC continues to be pleased with the load shifted to off peak by this initiative

Conclusion

- This initiative has allowed us to extend our past experience with shifting demand from on peak to off peak by using radio control signals through the SCADA program. We were pleasantly surprised at how much of the load was actually shifted to off peak by the implementation of this initiative.
- We have been able to demonstrate the savings to the social housing authority because of the availability of Smart Metering and Time of Use rates
- This initiative was successful in shifting consumption from on peak to off peak in partnership with the local municipality however, in accordance with the requirements of the TRC, the benefits calculated reflect a savings of consumption but not of demand.
- This initiative has been completed. The benefits will continue to be realized for the remainder of each 18 year unit life.

Radio Signal

Challenges Faced

- We had a difficult time finding customers able or willing to participate. Older homes were not wired to Code and finished basements made it difficult to fit in the additional electric panel required. We also targeted our test group to customers who had rental water heaters further limiting the available participants.

Customer Reaction

- We have found that this initiative requires more administration time than expected as customers have many questions and request information on how the program works and the potential benefits and savings.
- Customers appreciate the educational aspect regardless of the savings potential of this program.
- Most participants are reporting that although their appliances and water heating are shut off during certain times of the day, it is not causing an inconvenienced.

Benefits to Customers

- The benefit is the ability to shift consumption from 'On Peak' to 'Off Peak' times and therefore reducing rates. Total benefit is dependant on the individual consumption pattern of each customer. There is also a community and provincial benefit with overall shift of consumption to off peak.
- The value of installed equipment per home is approximately $ 1,500.
- We have currently installed 126 units including 58 to water heaters in Social Housing units. We are planning completion of an

additional 98 units in 2007 of which 66 will be to Social Housing water heaters. The number of appliances being controlled is 314.

Conclusion

- For the pilot, we initially targeted customers that are committed to conservation and demand management. In the general population, our success may be slightly less definite.
- More public education will attract further participants
- Installing a smart meter at these residences and providing TOU rates readily demonstrates the financial savings to our participants
- We had originally hoped that once Smart Metering had been fully deployed, this program would continue on a rental/lease basis for new customers installations. Currently, we are unconvinced that customers will choose to pay for the ability of us controlling their appliances when they have the ability of controlling most appliance use on their own.
- We intend to continue with this initiative for the remainder of the CDM plan.

Energy Star

Challenges Faced

- There was confusion initially since appliances were labeled Energy Star but did not qualify according to the catalogue or website. Coordination with appliance retailers was required so that they communicated to customers that models had to qualify officially for the Energy Star Rebate program
- It took longer than expected to do the research to make sure that the appliance that was purchased by the customer was in fact an energy star appliance and met with the requirements. We found that by using the website for the list of energy star appliances, it provided us with the most up to date list and was much more efficient than looking it up in the catalogue that became outdated quickly
- At first we rebated a straight $50 per appliance, however, some customers were requesting a $50 rebate on a $60 appliance. We changed our policy to pay 15% of the appliance cost with a maximum of $50.

Customer Reaction

- The program participation rate has been favourable.
- A large frustration for customers was the fact that some appliances were labeled as Energy Efficient but did not qualify for the Energy Star rebate. The reasons were numerous including 1) United States rating being different that Canada's 2) Old stock bearing

Energy Star label which no longer applies due to increased standards 3) Retailers giving misleading or inaccurate information

Benefits to Customers

- This program has been successful in generating interest in Energy Star appliances and encouraging customers who might have focused on other appliance features to consider energy efficiency as part of the purchase decision.
- To date we have provided rebates on approximately 1246 appliances and anticipate an additional 414 in 2007.

Conclusion

- A rebate program will become less effective as appliance retailers start carrying only Energy Star appliances.
- It is expected that we will be able to disburse the number of appliance rebates for which we budgeted.
- We intend to continue with this initiative for the remainder of the CDM plan.

Load Monitor

Challenges Faced

- We found that, although there is a fair amount of public interest, customers are busy and tend not to make a special trip to pick up a load monitor. By making the load monitors more accessible to the public for pick up and drop off, we would increase the participation rate, however, we would lose valuable information on customer results and their anticipated action plan
- We created an in-house reporting program that reduced the manual collection of data and produced more information to aid in the annual reporting
- We intend to continue with this initiative for the remainder of the CDM plan.

Customer Reaction

- Experience to-date is that customers who take advantage of the monitor are residential. Customers report that they will use the offending appliance more carefully by turning it off/down or that they intend to replace the appliance.

Benefits to Customers

- Based on experience to-date, we estimate that the number of participants is likely to be approximately 724 over the 3-year life of the program. Currently, 522 customers have borrowed a load monitor.

- This initiative is break-even in financial terms but provides the intangible benefits of educating customers in addition to giving them the means to make an individual direct contribution to energy conservation. It will provide an energy conservation benefit but the financial benefit to the consumer is offset by the incremental cost of the energy-efficient appliance.
- We will continue taking a load monitor to any high bill complaint locations to help resolve the complaint

Conclusion
- We intend to continue with this initiative for the remainder of the CDM plan.

Public Education

Customer Reaction
- Customers are generally happy to do their part in conversation and feel good about contributing. They are open to knowledge and suggestions on how they can do their part.

Benefits to Customers
- Benefits are recognized in the other initiatives within the CDM portfolio and there costs are related to marketing and advertising

Conclusion
- Knowledge is always beneficial. We will continue with this initiative for the remainder of the CDM plan. The costs of this program are attributable to all other initiatives

Lighting for Social Housing

Challenges Faced
- There is a risk of losing ground over time by tenants not giving consideration to the savings benefit of CFL bulbs and replacing burned out bulbs with cheaper Incandescent bulbs. This risk may be increased by the fact that many Social Housing tenants do not have to pay for their own electricity and would not see direct benefit. Providing a supply of replacement CFL bulbs to Social Housing Caretakers as well as educating both Social Housing and their tenants of direct and indirect savings associated with this program has mitigated the risk.

Customer Reaction
- Customers really appreciate the program and like the new lighting.
- We are finding that most customers are anxious to do their part in conservation.

Benefits to Customers

- The lighting program brings many benefits to the City of Peterborough, the tenants of Social Housing, and Peterborough Distribution Inc. These include Energy reduction (kWh), environmental savings (GHG), cost savings for tenants, local employment, reduced bulb replacement (5 year life expectancy 8000 hours), and recycling of incandescent bulbs.

Conclusion

- This is an uncomplicated yet very effective program with a large cost to benefit ratio. We will continue this initiative.

Conclusion of the 2006 Conservation and Demand Management Year

- Our CDM plan continues to be a success. It enabled us to learn about our individual initiatives and, importantly, to learn about smart meters, its associated technologies and the billing of TOU rates.

- We find that customers are interested in energy conservation but need encouragement to take action in achieving energy savings.

- We underestimated how long it takes to implement initiatives in general and how onerous it is to report on the initiatives.