

July 25, 2006

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

Attention: Ms. Kirsten Walli, Board Secretary

Dear Ms. Walli:

**RE: Newmarket Hydro Ltd.
Request for Approval
Pilot Project Relating to Eligible Time of Use Meters**

I am writing in anticipation of the Board issuing amendments to the Standard Supply Service Code as contemplated in the July 12, 2006 notice RP-2004-0205, and to request approval to implement a pilot project relating to eligible time of use meters (the 'NHL TOU and DR Pilot').

Proposed Pilot Project:

To help address the critical supply situation in northern York Region which has been recognized by the Board in its decision EB-2005-0315, Newmarket Hydro ('NHL') is planning to undertake a market test to determine customer response to:

- 1) Regulated Price Plan (RPP) Time-of-Use rates, and
- 2) RPP Time-of-Use rates in combination with a smart thermostat and demand response incentive. Information gleaned from this test will enable NHL, the Board, and other LDCs to expedite and enhance customer response to RPP TOU rates when they are implemented more broadly starting in May 2007. The test will also glean information with respect to efforts to augment the RPP TOU price signal with more dynamic signals to reduce demand during critical peak periods.

Given that air conditioning drives the system peak in northern York Region, the focus of the expected DR activity by customers using the smart thermostat will be on air conditioning. Additionally, NHL is likely to be deemed a smart meter priority installation area and is also exploring the possibility of making the installation of a smart thermostat that can receive critical peak period signals a mandatory condition of service for new homes with air conditioning. For this reason, it is critical that the test is up and running for summer 2006 to have good information and data to support the expedited roll-out of smart meters and the possible changes to NHL's conditions of service.

The NHL TOU and DR Pilot would be conducted using approximately 500 smart meters that were installed in the summer of 2005 under NHL's Conservation and Demand Management Plan ('CDM'). Time is of the essence and this consideration has also influenced the design of the test as further described below.

Objectives:

The specific objectives of the proposed test are as follows:

1. Test the response of residential customers with enabling technology (ie, smart thermostats) to either: a) a control signal from NHL, or b) a demand response (DR) reward / incentive enabled by a control signal (the reward would reflect their consumption compared with a baseline developed using a methodology similar to the IESO's TDRP and the OPA's 250 MW DR program). NHL is also considering testing customer fatigue through a further breakdown of group 1b) into those getting a maximum control signal duration of 3 hours and those getting a maximum control signal duration of 6 hours.
2. Compare the response of the above group against customers on standard Time of Use (TOU) Regulated Price Plan (RPP) rates, and b) against the load shape of customers without time-varying prices. To better inform NHL's smart meter roll-out and customer communications, two different treatments are planned for the TOU group: a) invitation to an educational seminar and b) invitation to a seminar combined with messaging of system power emergencies, critical local peak situation and, possibly, Smog Days. (Note – notification of Smog Days could be treated as a separate subtreatment to isolate the customer response to this messaging)
3. Estimate residential customer elasticity of substitution.

Test Structure and Design:

To minimize costs, this study will focus on two key cells: 1) customers on TOU rates combined with enabling technology; and 2) customers on TOU rates. Each of these two cells would be further broken down into two subtreatment groups, as

of these two cells would be further broken down into two subtreatment groups, as described above. This test could complement the efforts of other LDCs and the OEB to explore customer response to time-varying prices.

	“Pre” Non-Time Varying Prices (hourly meter data available)	“Post” New prices as Applicable (hourly meter data available)
Critical Peak Notification Group (TOU RPP prices with signal to thermostat indicating peak period)		1(a) With enabling technology (smart thermostat)
“DR Reward” Group (TOU RPP prices with incentive to reduce demand during CPP events, enabled by signal to thermostat)		1(b) With enabling technology (smart thermostat)
RPP TOU Group (a) (TOU RPP prices with customer education)		2(a) Without enabling technology
RPP TOU Group (b) (TOU RPP prices with customer education and messaging re: critical peak periods)		2(b) Without enabling technology
Non-TOU Price Group		

Notes:

- NHL expects that pre (ie, from summer 2005) and post hourly meter data will be available for all groups in the test, which will improve statistical confidence levels for the test results.
- A sample size of ~100 customers for each of groups 1a, 1b, 2a and 2b is planned, with approximately 60 customers in the Non-Time Varying Price control group.

Preliminary Planning Considerations

- The pilot would run from August 1, 2006 through the winter of 2007
- The DR incentive rate has yet to be determined, but our current thinking is that something in the range of 30 cents per kWh would provide sufficient incentive for customers and provide comparability with any other CPP tests being undertaken elsewhere in Ontario (ie, the same response under either test would provide the same financial impact for customers). Assuming 100 hours of DR events over the summer and 1 kW reduction by customers during these hours, the average customer incentive would be \$30 / year. This is roughly in line with the \$25 up-front incentive provided to customers participating in Toronto Hydro’s Peak Savers program.
- NHL is exploring the potential to bid the demand response provided by customers with enabling technologies into the OPA’s 250 MW DR program. This would allow better understanding of the possible linkage between

wholesale DR programs and residential customer DR (ie, it may be possible for any critical peak reward for residential customers to be partially or fully funded through a wholesale market DR program, such as the OPA's 250 MW DR program).

- We are currently exploring ensuring that all TOU customers have programmable thermostats with the time periods set to coincide with the RPP TOU periods to facilitate customer response to the TOU rates (eg, customers can set their own temperature, but NHL would ensure the time periods match the RPP TOU periods).
- Non-control group customers would be recruited with an opt-out provision. This recruitment approach addresses a number of critical issues:
 - There is a significant risk of self-selection bias under a strictly voluntary recruitment approach (in California's State-wide Pricing Pilot, utilities had extreme difficulty recruiting participants for the two CPP groups on a voluntary basis)
 - Mandatory recruitment is likely to be more representative of the way DR (or CPP) would be deployed in Ontario
 - it reduces the recruiting period significantly, ensuring that the test covers the majority of the summer period, and
 - NHL does not have a sufficiently large "pre" sample size to allow a strictly voluntary approach, without compromising the total number of customers for whom both pre- and post-data is available.
- NHL's control group customers (ie, those in group 6 on standard RPP rates) can be augmented with other similar customers in neighbouring LDCs (eg, those in PowerStream's territory) for whom hourly meter data is available. The overall group can then be structured to best match the characteristics of groups 1 and 2 (eg, air conditioning penetration, demographics, annual consumption, etc.).

Analysis and Results:

NHL will be retaining Navigant Consulting to evaluate the NHL TOU and DR Pilot. Their support will include:

- Stratification of customers with smart meters and development of the samples for the two test cells (ie, approximately 400 customers on time-of-use rates, split into roughly 200 customers with smart thermostats and 200 customers without smart thermostats)
- Advice on customer recruitment and education

- Advice on the baseline demand and demand response incentive calculation for certain pilot customers as per the methodology for the IESO Transitional Demand Response Program and the OPA's recent 250 MW Demand Response program (or a simplified version of this methodology)
- Data analysis to determine the demand responsiveness of the customers in the various test cells (and any subtreatment groups) and, through extrapolation, to estimate the potential impact on NHL's peak demand if the pilot was extended to other customer groups.
- Provision of a report summarizing the results of the NHL TOU and DR Pilot suitable for public release.
- Advice on customer research.

The results will be made available to the Board, the Ministry of Energy, and all NHL customers.

Benefits of the NHL TOU DR Pilot:

The benefits of the pilot project are:

- NHL and Newmarket consumers gain experience with TOU rates
- NHL and Newmarket consumers gain experience with load shifting to save on electricity bills
- NHL will learn about any issues regarding billing TOU rates
- NHL and consumers learn to use programmable HVAC thermostats to achieve best usage of the HVAC units in conjunction with lowering electricity bills
- Begins TOU education process in Newmarket, not only to pilot group, but to community as a whole
- NHL and Newmarket consumers learn the actual facts about TOU and not fearful because of unsubstantiated guesses
- Results will be shared with the Board and other LDCs

Budget:

NHL proposes to re-allocate \$50,000 within the current residential sector allocation of \$200,000 and \$80,000 from the business/commercial/industrial allocation of \$279,000 within its CDM Plan to the purchase and installation of smart thermostats. The current spending in the residential sector is \$84,000 and the business/commercial/industrial sector is \$14,000. This will allow our very

successful old appliance disposal and new appliance incentive purchase plans to continue through their second and third years. We note that smart control technologies similar in nature to the smart thermostats (and available from the same provider) have met with some success in the United States. Based on our experience with the smart thermostats in the NHL TOU and DR Pilot, we are contemplating introducing a smart control program to our business/commercial/industrial customers as well as our small businesses, so the reallocation of funds from this sector is reasonable.

All other costs will be funded through NHL's 2006 administrative and capital budgets. Total costs and funding are shown in table 1 below.

Table 1

**NHL TOU and DR Pilot
Proposed Budget and Funding**

Component	Cost	Source of Funds
Smart Thermostats	\$130,000	CDM - Residential and Commercial/industrial sectors
Navigant Consulting	\$25,000	
Staff Costs	\$10,000	NHL Administration budget
Customer Communications	\$15,000	
Systems Reconfiguration	\$10,000	Software Capital
CPP Incentives	\$3,000	NHL Administration budget
Total	\$193,000	

In an effort to have the NHL TOU DR Pilot achieve maximum results as soon as possible, we have notified the prospective pilot customers of this initiative. This includes providing them with a summary of their historic costs on both consumption and TOU RPP prices, and a public meeting scheduled for July 25, 2006. To date, only three customers have expressed concerns while eleven have responded positively to the prospect of a pilot, including requesting a smart thermostat when available.

The undersigned would be pleased to respond to any concerns or further questions the Board may have in this matter.

Yours truly,



P.D. Ferguson, P.Eng
President