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BY COURIER

June 15, 2005

Mr. John Zych  
Secretary  
Ontario Energy Board  
Suite 2601, 2300 Yonge Street  
P.O. Box 2319  
Toronto, ON.  
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Dear Mr. Zych:

**RP-2004-0203/EB-2004-0533 Hydro One's Conservation and Demand Management Plan: Data on Avoided Electricity Costs**

In accordance with the Board's direction and as discussed in our May 24<sup>th</sup> status memo on this matter, Hydro One is pleased to file avoided cost data for use in screening conservation and demand management ("CDM") programs. This information is provided in two parts. The first part is a consultant's report from Navigant Consulting Inc. which provides the avoided cost estimates for energy, generation capacity and transmission capacity. This is contained in Attachment A. The second part is an assessment by Hydro One of Distribution based avoided costs and this is contained in Attachment B.

The report submitted by Navigant Consulting provides the avoided cost estimates for energy, generation capacity and transmission capacity over the period 2006 through 2025, and the related assumptions, data sources and analysis methodologies. Estimates of environmental damages are also provided for the same time frame, should the Board decide that these should be used. The values for avoided costs of energy, generation capacity and transmission capacity are provided in Table 21, page 42 of the report. Values for environmental externalities appear in Table 22, page 43 and Table 23, page 44 contains avoided energy costs, which incorporate the environmental adders. It should also be noted that the report also provides avoided generation capacity costs for Demand Response type programs in Table 24, page 45 of the report. The section entitled "Application of Results" provides further directions, assumptions and caveats, which will help in the application of these estimates to the screening of various types of CDM programs.

Attachment B provides a preliminary high-level estimate of distribution based avoided costs from Hydro One for the period 2009 through 2012. This Hydro One assessment is based on the methodology developed by Navigant Consulting for the Transmission avoided costs.

Questions may be addressed to Carolyn Russell (Senior Advisor, Regulatory Affairs), who may be reached by phone (416) 345-5914, fax (416) 345-5866, or e-mail: carolyn.russell@HydroOne.com. Her address is Hydro One Networks Inc., 483 Bay Street, South Tower, 8<sup>th</sup> Floor, Toronto, Ontario M5G 2P5.

Yours truly,

Brian Gabel

cc. Mr. A. Fogwill, Applications Director, Market Operations

# ATTACHMENT A

## ATTACHMENT B

## Preliminary Distribution Avoided Cost Assessment for Hydro One

To develop preliminary distribution based avoided costs, Hydro One utilized the same approach as that taken by Navigant, in developing avoided costs for transmission. This included an assessment of annual investments to major distribution plant attributed to load growth such as increasing the capacity of distribution stations, feeders emanating from transformer stations and LV facilities. Costs associated with directly connecting new customers, such as new radial supplies, provision of secondary services and metering were not included, as these investments are required to connect new developments and cannot be deferred by CDM programs.

The approach involved reviewing each planned addition to the distribution system for 2006 and establishing whether or not it was appropriate for avoidance or deferral via CDM programs. Distribution projects for 2006 are well defined and determined to be representative of a typical year. If the project was deemed to be a candidate for deferral, through CDM programs, its cost and related capacity were included in the assessment, similar to the approach used in the transmission analysis. The illustrative example appearing in Table 1.0 uses 2009 as the original need date. Since the 2006 costs were representative of a typical year they were escalated to 2009, by using a 2.5% escalation rate.

Table 1.0 below illustrates the level of avoided distribution costs that would be expected, under these assumptions. As with avoided transmission costs, the distribution avoided costs are capacity based.

**Table 1.0 Hydro One Illustration of a Distribution Avoided Cost Analysis**

| <b>Category</b>  | <b>2009</b>                 | <b>2010</b> | <b>2011</b> | <b>2012</b> |
|--|-----------------------------|-------------|-------------|-------------|
| <i>CDM Impact (assumed equal to demand growth)</i>     | 180                         | 180         | 180         | 180         |
| New Need Date  |                             |             |             | X           |
| Old need Date  | X                           |             |             |             |
|  | <b>(Cost in \$Millions)</b> |             |             |             |
| Original Cost  | 19.92                       |             |             |             |
| Avoided Carrying Charges on Original Cost Avoided      | 1.84                        | 1.84        | 1.84        |             |
| Avoided O&M  |                             | 0.20        | 0.20        | 0.21        |
| Cost with Inflation                                    |                             |             |             | 21.45       |
| <i>Net Avoided Cost</i>                                | 1.84                        | 2.04        | 2.05        | (1.32)      |
| <i>Levelized Avoided Cost (\$millions)</i>             | 1.26                        | 1.26        | 1.26        | 1.26        |
| <i>Avoided Distribution Development (\$2005/kW-yr)</i> | 6.50                        | 6.50        | 6.50        | 6.50        |

As discussed by Navigant in their assessment of transmission avoided costs, it is important to recognize that this preliminary distribution avoided cost analysis allocates the avoided costs associated with deferring localized distribution capacity upgrade projects across the system-wide CDM impacts. As such, they will understate the value of CDM in those areas in need of localized distribution capacity upgrades and overstate the value of CDM in those areas that do not require localized distribution capacity upgrades.

This effect is expected to be significantly more pronounced with distribution costs since individual assets serve significantly fewer customers and are therefore more dependent on the penetration rates and

effectiveness of local programs targeted at those few customers. CDM will have little or no distribution benefit in the areas where the distribution system experiences little or no growth. Hydro One experience indicates that a relatively low level of the avoided costs should be attributed to system wide avoided distribution costs and that calculations of localized avoided costs should be allowed and encouraged.

It should be noted that these distribution system avoided costs are preliminary in nature and are only applicable for customers supplied from Hydro One's distribution system. This includes Hydro One end-use distribution customers, embedded LDCs and LDCs supplied from Hydro One LV facilities. Accordingly, other LDCs would have to add avoided costs for their own part of the distribution system.

Finally, the avoided costs calculated by Navigant for energy, generation capacity, transmission capacity and environmental damages represent the costs at a wholesale delivery point – the interface between the transmission system and an LDC. Accordingly, LDCs should apply their approved loss factors to the avoided costs for these elements in order to account for losses experienced on the distribution system.