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December 7, 2015

Bing Young
Director, System Planning
Hydro One Networks, Inc.
483 Bay Street
Toronto, ON M5G 2P5

Dear Bing:

Re: Initiating a Near-term Transmission Project identified through the Barrie/Innisfil Integrated Regional Resource Planning ("IRRP") process

The purpose of this letter is to:

- Hand off a near-term transmission project to Hydro One that is required to address urgent needs to replace infrastructure nearing its end of life and provide supply capacity in the Barrie/Innisfil sub-region; and
- Request that Hydro One begin development of a project to replace the existing Barrie transformer station ("Barrie TS") and the E3/4B transmission line with new 230 kV infrastructure.

Since a wires option has been determined to be the only feasible means to address these urgent needs, the hand off of this transmission project to Hydro One is consistent with the regional planning process endorsed by the Ontario Energy Board ("OEB") as part of its Renewed Regulatory Framework for Electricity.

The Barrie/Innisfil Working Group ("the Working Group"), consisting of staff from the IESO, Hydro One, PowerStream and InnPower, is conducting an IRRP process for the Barrie/Innisfil sub-region. The Terms of Reference for the Barrie/Innisfil IRRP established a phased planning process to ensure that near-term needs could be met in a timely fashion. The Working Group has completed the first phase of the IRRP, including reviewing options to address near-term needs with consideration of future needs, meeting with municipalities in the sub-region, and meeting with First Nation communities in the broader South Georgian Bay/Muskoka region. Due to the nature and the timing of the needs, which include replacing existing infrastructure that is approaching its end of life, and providing additional capacity to supply growth in the City of Barrie and Town of Innisfil in the near and medium term, the Working Group has concluded that non-wires alternatives are not viable options and recommends development of this near-term transmission project. The objectives and scope of this project are provided in Attachment 1.

At this time, the Working Group recommends that Hydro One proceed immediately with development of the transmission project, including pursuing the required environmental and

regulatory approvals. The Working Group will continue to develop the medium- and long-term plan for the Barrie/Innisfil sub-region in parallel, and will benefit from updated information from Hydro One through the development of this project.

To facilitate development of this project, the IESO will provide Hydro One with the following information on request:

- Demand forecasts
- Conservation and distributed generation forecasts
- Any other relevant information

We look forward to ongoing exchange of information, results and deliverables from the Barrie/Innisfil near-term transmission project as part of the Barrie/Innisfil Working Group activities, and to continuing to work with and provide support to Hydro One in the implementation of this project.

Yours truly,

Bob Chow
Director, Transmission Integration

Cc: Barrie/Innisfil IRRP Working Group Members:

**PowerStream**
Irv Klajman
Michael Swift
Riaz Shaikh

**InnPower**
Wade Morris
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**Hydro One Distribution**
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Tabatha Bull
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**Attachment 1 – Project Objectives and Scope**

Project Objectives:

- To address the "end of life" of the Barrie transformer station ("Barrie TS") and the infrastructure that supplies it: the E3/4B transmission line; and the 230/115 kV autotransformers at the Essa transformer station ("Essa TS"). Various elements of this infrastructure range from 40 to 67 years old and have been identified for replacement as early as 2018 by Hydro One's sustainment program. These assets are indentified in Figure 1.
- To provide capacity to supply growth in the southern portion of the City of Barrie and in the Town of Innisfil. Currently, Barrie TS is the primary source of supply for this area. Based on current forecasts (net of conservation and distributed generation), this station will reach its capacity around 2017. Distribution system enhancements currently planned by PowerStream will enable this need to be deferred until around 2020, at which point additional supply capability will be required.

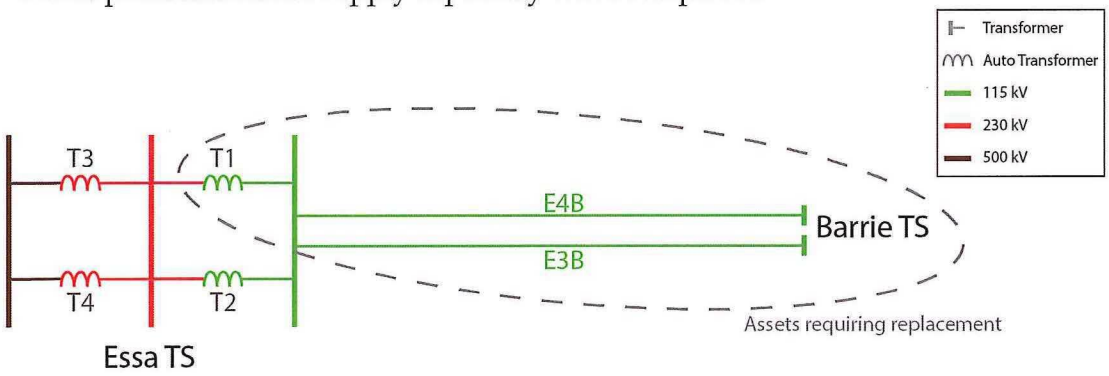


**Figure 1 - Single line diagram detailing existing supply of Barrie TS and assets requiring replacement**

Project Scope:

The Working Group has considered various alternatives for meeting the above objectives, including non-wires alternatives and various wires options:

- Non-wires solutions were determined to be infeasible by the Working Group on the basis that over 100 MW of existing customer load in southern Barrie and the Town of Innisfil that is currently supplied by Barrie TS would be left without electricity supply if the infrastructure is not replaced when it reaches end of life.
- An option to replace the existing 115 kV line, station and autotransformer with like-for-like equipment (i.e., maintaining its voltage at 115 kV) was also ruled out on the basis that it would not address the growth requirements in the area. Any additional capacity needed to supply growth would then require development of new, greenfield station site(s) and rights-of-way, which would be inconsistent with the 2014 Provincial Policy Statement.[1]

[1] Section 1.6.3 of the 2014 Provincial Policy Statement states that: "Before consideration is given to developing new *infrastructure* and *public service facilities*: a) the use of existing *infrastructure* and *public*

Based on the above considerations, the Working Group recommends that Hydro One proceed with a project consisting of:

- Rebuilding Barrie TS and the E3/4B transmission line and upgrading the voltage of these facilities from 115 kV to 230 kV;
- Upgrading the transformers at Barrie TS from 55/92 MVA units to 75/125 MVA units; and
- Retiring the two 230/115 kV auto-transformers at Essa TS (T1 and T2).

These measures address the near-term need to refurbish Barrie TS, allowing it to continue supplying the existing load in southern Barrie and the Town of Innisfil. At the same time, upgrading the station and line to 230 kV allows for the additional load growth forecast in this area to be supplied for the near and medium term using the existing station site and transmission right-of-way. Upgrading the transmission line to 230 kV also provides increased capability that allows for future development of the system. Additionally, savings are incurred from removing the 230/115 kV auto-transformers at Essa TS that are currently maintained solely to supply Barrie TS.

Due to the timing of the needs, and considering typical development timelines for transmission refurbishment/upgrade projects, Hydro One should work toward a targeted in-service date of 2020. It is the Working Group's understanding that a Class Environmental Assessment process will be required for this project, as well as Leave to Construct approval from the OEB for the line replacement portion of this project. The IESO will endeavor to provide support to Hydro One in these activities.

The Working Group will continue to review the medium- and long-term needs in the Barrie/Innisfil sub-region and will develop an IRRP addressing needs over a 20-year period for publication at the end of 2016.

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*service facilities* should be optimized; and b) opportunities for adaptive re-use should be considered, wherever feasible."