



120 Adelaide Street West  
Suite 1600  
Toronto, Ontario M5H 1T1  
T 416-967-7474  
F 416-967-1947  
www.powerauthority.on.ca

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Mr. Bing Young  
Director, Transmission System Development  
Hydro One Inc.  
483 Bay Street  
Toronto, Ontario M5G 2P5

Initiating Near-Term Transmission Components of the Kitchener-Waterloo-Cambridge-Guelph (KWCG) Area Integrated Regional Resources Plan (IRRP)

Dear Bing:

The purpose of this letter is to:

- Hand-off from the Ontario Power Authority (OPA) the lead responsibility for the planning process associated with the near-term transmission component of the Kitchener-Waterloo-Cambridge-Guelph (KWCG) area Integrated Regional Resource Planning (IRRP) process to Hydro One.
- Request that Hydro One develop wires solutions and implement the near-term transmission component of the integrated plan to meet the near- and medium-term reliability needs in the KWCG area.

This is consistent with the regional planning process endorsed by the Ontario Energy Board (OEB) as part of its Renewed Regulatory Framework for Electricity.

The KWCG Working Group (Working Group), consisting of staff from the OPA, the Independent Electricity System Operator (IESO), Hydro One and local distribution companies in the KWCG area, has been conducting an IRRP process for the KWCG area. In combination with conservation and local generation options, the Working Group has identified two transmission projects for meeting the reliability needs of the area in the near- and medium- term. These projects are:

- the Guelph Area Transmission Refurbishment (GATR) project – Hydro One is currently proceeding with this project, including seeking the necessary OEB Leave-to-Construct approval; and
- the installation of a second 230/115 kV autotransformer at Preston TS and associated switching and reactive facilities (Preston Autotransformer Project) – the OPA has completed a preliminary assessment of this option as part of the IRRP process.

While the GATR project has advanced to the approval phase, more detailed study and development work is required for planning the Preston Autotransformer Project. This is best accomplished by the lead transmitter, Hydro One, leading these efforts as part of the Working Group, guided by the information and requirements provided below from the IRRP process.

### **Objectives:**

The objectives of the Preston Autotransformer Project are:

- To provide adequate load meeting capability to connect a future Cambridge & North Dumfries Hydro transformer station on the Kitchener-Guelph 115 kV system by about 2018
- To substantially improve the ability to restore electricity supply and minimize the potential impact of service interruptions to customers following a major transmission outage in the Cambridge area consistent with the IESO's Ontario Resource and Transmission Assessment Criteria (ORTAC)
- To provide sufficient voltage support for the Kitchener-Guelph 115 kV system and Cambridge 230 kV system to comply with IESO requirements
- To facilitate the necessary measures to manage multiple outages conditions on the Kitchener-Guelph 115 kV system and Cambridge 230 kV system

### **Scope:**

The Working Group has discussed various options for meeting the above objectives and recommends proceeding with the following measures:

- Installation of a second 230/115 kV autotransformer at Preston TS and associated 115 kV switching facilities
- Installation of low-voltage capacitor banks on the Kitchener-Guelph 115 kV and/or the Cambridge 230 kV system
- Design and implementation of a Load Rejection (L/R) scheme for the Kitchener-Guelph 115 kV system, or have available operational measures adequate to provide similar relief.

In addition to the scope outlined above, other options for meeting the above objectives may also be considered as part of the development work. Hydro One will confirm the scope and costs of the above facilities to meet the identified reliability needs and to optimize their specifications and configuration. At this time, based on preliminary cost estimates provided by Hydro One, the installation of a second 230/115 kV autotransformer at Preston TS and associated switching and reactive support are expected to be between \$20 million and \$35 million. However, further refinements to the cost will be provided as part of the development work. The costs may also

vary due to any significant scope changes arising from new information that is substantively different to that used in the IRRP process to date.

Consistent with the support letter that was submitted to Hydro One on August 7, 2012, these measures will further leverage the system improvements gained through the GATR project to address the near- and medium-term needs of the KWCG area. The ability of the Preston Autotransformer Project to meet the above objectives is subject to the availability of the GATR facilities.

In coordination with and subject to the OEB approval of the GATR project, the second 230/115kV autotransformer at Preston TS and associated switching and reactive support should be in-service by the end of 2015.

**Supporting Information:**

To facilitate the development of these wires solutions, the OPA may provide Hydro One with the following information:

- Relevant system base cases
- Demand forecasts
- Conservation and distributed generation forecasts
- Any other relevant information

We look forward to information, results and deliverables from the Preston Autotransformer project as part of the KWCG Working Group activities and to continuing to work with and support Hydro One on the implementation of this project.

Regards,



Bob Chow  
Director, Transmission Integration  
Power System Planning Division  
Ontario Power Authority

CC KWCG Working Group members:

**Cambridge and North  
Dumfries Hydro Inc.**

Ron Sinclair  
Shawn Jackson

**Guelph Hydro Electric  
Systems Inc.**

Kazi Marouf  
Michael Wittemund  
Erik Veneman

**Kitchener-Wilmot Hydro  
Inc.**

Lloyd Frank  
Shaun Wang  
Greig Cameron

**Waterloo North Hydro  
Inc.**

Dorothy Moryc  
David Wilkinson  
Herbert Haller

**Hydro One Distribution**

Charlie Lee

**Hydro One Networks**

John Sabiston  
Emeka Okongwu  
Arthur Fisher  
Jennifer Li

**IESO**

Peter Drury

**OPA**

Charlene de Boer  
Bernice Chan