

ADDENDUM TO THE Kitchener-Waterloo-Cambridge-Guelph area

TERMS OF REFERENCE

July 2014

An integrated regional planning study for the Kitchener-Waterloo-Cambridge-Guelph (KWCG area) commenced in 2010 to assess electricity supply and reliability in this region over a twenty year period. The study is being conducted by a Working Group consisting of members from the OPA, the Independent Electricity System Operator (IESO), Hydro One Networks Inc., Kitchener-Wilmot Hydro, Waterloo North Hydro, Cambridge & North Dumfries Hydro and Guelph Hydro Electric Systems Inc. The initial Terms of Reference for the study were agreed upon by the Working Group in 2010. These Terms of Reference detailed the objectives, scope, key assumptions, study team, activities, accountabilities, and deliverables for the planning study, and reflect the regional planning context of that time.

Since the initiation of this study, there have been a number of key regulatory and policy changes that impact how regional planning is to be conducted in Ontario. The Ontario Energy Board (OEB) has endorsed a more structured and formalized regional planning process, which sets out the responsibilities of the Working Group, the timelines, and the documentation requirements for planning in Ontario's 21 electricity regions. Additionally, the Premier of Ontario has endorsed recommendations regarding stakeholder and community engagement in regional planning and the siting of large electricity infrastructure.

Included in the new framework for regional planning is the integrated regional resource planning process. The KWCG regional planning study is being transitioned to align with this process, as well as with the planning and siting recommendations. Specifically, the salient changes and areas of additional focus include:

- a 20-year study period encompassing the near term (up to 5 year), medium term (5-10 year), and long term(10-20 year);
- enhanced engagement activities;
- a more explicit timeframe for carrying out the planning and engagement activities; and
- the delivery of intermediate products (such as "handoff letters" as required).

Toward this goal of alignment, the Working Group is putting forward an addendum to the original Terms of Reference in the sections below. This addendum includes updated information on study activities, amendments to the current and ongoing objectives, scope, key assumptions, and the schedule for activities and deliverables to reflect the current regulatory and policy direction. For reference, the original Terms of Reference can be found at: <http://www.powerauthority.on.ca/power-planning/regional-planning/kwcg>

1. Status of Study

Since the initiation of the study, a number of key activities have been undertaken. Based on load forecasts and system information and assumptions gathered in 2010, the Working Group has identified near, medium, and long-term needs for the area. In combination with conservation and distributed generation, two projects have been identified by the Working Group to address the near and medium-term electricity supply needs:

- (1) **Guelph Area Transmission Refurbishment (GATR)** project includes the installation of two autotransformers, switching facilities, and the upgrade of an existing transmission line in Guelph. This project, which is expected to come in-service by 2016¹, will reinforce the electricity supply to a portion of the cities of Guelph, Kitchener, and the surrounding area, and minimize the impact of major transmission outages on customers in the area. Hydro One submitted the Section 92 for the GATR project on March 8, 2013. Subsequently, the Section 92 for the GATR was approved by the OEB on September 26, 2013.

- (2) **Second Preston Autotransformer Project** includes the installation of a second 230/115 kV autotransformer at Preston TS and associated switching and reactive facilities. This project, which is expected to come in-service by 2017², will enable a future transformer station in the Cambridge area to be connected onto the Kitchener-Guelph 115 kV system and will substantially improve the restoration capability following a major transmission outage in the Cambridge area. The OPA sent a hand-off letter to Hydro One on May 29 2013 to proceed with the early development work related to the Regional Infrastructure Plan (RIP) for the Preston Autotransformer Project (Cambridge Area Reinforcement Project). As part of the early development work, various options to meet the near- and medium term needs in the Cambridge area are being considered.

To support the development in the region over the longer term (10-20 year), the KWCG Working Group will need to develop a roadmap, outlining the needs and potential options under various longer-term demand scenarios based on stakeholder and local input.

2. Updates to the Study

Given the recent changes to regional planning, the Working Group has agreed to make the following updates to the study:

- a) In order to account for the uncertainty over the longer-term, the Working Group will use a scenario-based approach to long-term forecasting. The longer term demand scenarios will be developed based on economic drivers of electricity demand, such as growth in GDP and population, behavioural change in response to rising electricity price, as well as any relevant community and municipal plans.

- b) With the inputs from stakeholders and the local community, the Working Group will develop longer term options to meet the community's electricity demand based on a combination of the following approaches:
 - **Community Self Sufficiency**— A community may address a local electricity need by implementing small scale and distributed resources, such as conservation and demand management, distributed generation, localized demand resources, smart grid, and local storage, throughout their community.

 - **Centralized Local Resources**—A community may address a local electricity need by siting a centralized resource in the local area.

¹ The Guelph Area Transmission Refurbishment (GATR) should be available to meet the 2016 summer peak requirements

² The Second Preston Autotransformer Project (Cambridge Area Reinforcement Project) should be available to meet the 2017 summer peak requirements and to enable a future transformer station in the Cambridge area to be connected onto the Kitchener-Guelph 115 kV system by 2018.

- **Deliver Provincial Resources**— A community may address a local electricity need by bringing provincial resources to the local area via transmission/or distribution infrastructure.
- c) Consistent with the intention of the OEB’s formalized regional planning process, additional transformation capacity, which has been determined by the LDC up to now, will need to be considered on a coordinated basis as part of this regional infrastructure planning process (e.g. opportunities to share transformation capacity on a regional basis).
- d) Since the management of major transmission and distribution assets in the KWCG area over the longer term may have an impact on the longer-term needs and options to supply the community, assumptions regarding equipment end-of-life and planned sustainment activities for both transmission and distribution infrastructure will be considered as part of the study.
- e) In accordance to the OEB regional planning 18-month timeline, the Working Group is expected to prepare an IRRP by Q4 2014 that documents the near-term plan and longer-term options in the KWCG area.

3. Updated Activities and Tentative Schedule

Activity		Deliverables	Lead Responsibility	2014			
				Q1	Q2	Q3	Q4
1	Implement near-term projects	GATR in-service by 2016 Cambridge Area Reinforcement Project in-service by 2017	Hydro One	In Progress			
2	Develop long term growth scenarios including meeting with municipalities for inputs	Long term growth scenarios	OPA and LDCs				
3	Assess longer-term needs based on different growth scenarios	Long-term Needs Assessment	OPA				
4	Develop options to address long-term needs	Long-term options	OPA/LDCs/Transmitter depending on the options being considered				
5	Community, Aboriginal and Stakeholder Engagement	Engagement materials	OPA and LDCs			On-going	
6	Prepare IRRP Report	IRRP Report	OPA				