

October 24, 2018

Mr. Robert Reinmuller
Director, Transmission Planning
Hydro One Inc.
483 Bay Street, 13th Floor, North Tower
Toronto, Ontario M5G 2P5

Dear Robert,

Update on the Need and Scope for the Northwest Bulk Transmission Line

The Independent Electricity System Operator (the “IESO”) recently updated its electrical load forecast and completed an assessment of the need for additional capacity to supply the West of Thunder Bay and North of Dryden areas (together, the “Region”), shown in Figure 1. The purpose of this letter is to describe the supply needs for the Region and the IESO’s recommended next steps for meeting those needs.

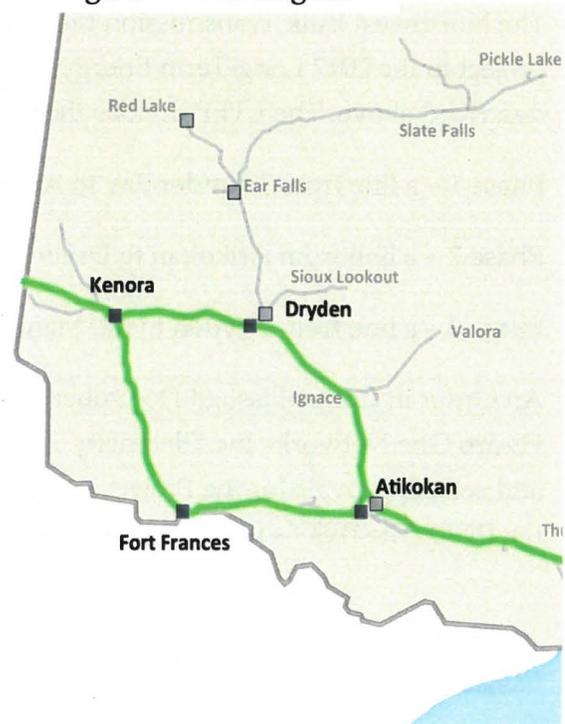
Supply Needs in the Region

Figure 2 below shows an updated electrical load forecast for the Region. The updated forecast considers new loads from potential mining developments, the connection of remote communities and the removal of loads from the cancelled Energy East pipeline conversion project.

Based on the forecast the Region is adequately supplied today; however, a need for additional capacity will arise in the mid-2030s.

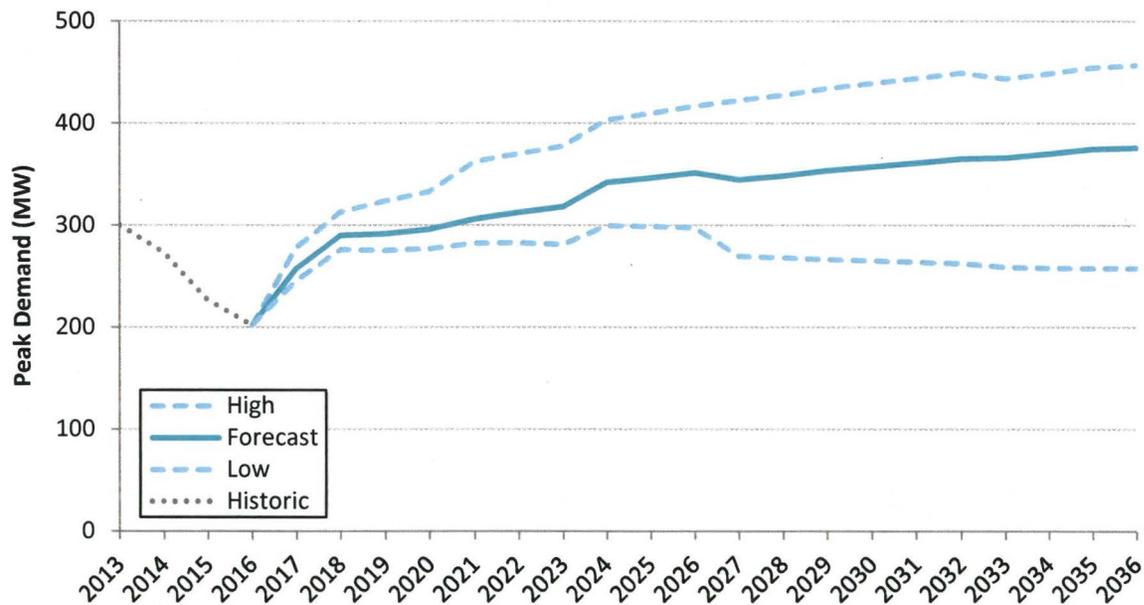
The IESO’s updated electrical load forecast also includes high and low growth scenarios to capture the uncertainty around industrial developments. Under the high growth scenario, which considers

Figure 1 – The Region



development of the Ring of Fire with electricity supplied by the Ontario transmission system, a capacity need could potentially arise in the early 2020s.

Figure 2 - Electrical Load Forecast – the Region



Addressing the Need

The Northwest Bulk Transmission Line Project (the “Project”) was identified as a priority project in the 2017 Long-Term Energy Plan (the “LTEP”) and can address the capacity needs described above. The LTEP divides the Project into three phases:

Phase 1 – a line from Thunder Bay to Atikokan;

Phase 2 – a line from Atikokan to Dryden; and

Phase 3 – a line from Dryden to the Manitoba border.

An Order in Council issued December 11, 2013 directed the Ontario Energy Board to amend the Hydro One Networks Inc. Electricity Transmission License to require Hydro One to develop and seek approvals for the Project in accordance with the scope and timing recommended by the IESO. The IESO’s recommended scope and timing is outlined in the following paragraphs.

Scope and Timing

Since the capacity need is not likely to materialize until the mid-2030s, a commitment for additional supply to the Region is not required at this time. However, the IESO recognizes the

risks associated with load forecast uncertainty and the potential for large industrial projects to add significant load to the Region utilizing the remaining capacity margin sooner than anticipated.

Therefore, to shorten the Project lead time if the need for additional capacity materializes earlier than expected, the IESO recommends that Hydro One begin development work on Phase 1 and Phase 2 of the Project as soon as possible. The scope of development work is to include preliminary design/engineering, cost estimation, public engagement/consultation, routing and siting, and Environmental Assessment. At this time the IESO is not committing to a timeline for the construction of the line. The IESO will continue to monitor developments in the Region to determine when construction of the transmission line should begin.

To supply the Region under the high growth scenario, the Project must meet the following specifications:

- a) Consist of a new double circuit 230 kV line between Lakehead TS and Mackenzie TS (Phase 1) with a thermal capacity that is equal to or greater than the existing double-circuit 230 kV transmission between Lakehead TS and Mackenzie TS. This would achieve the required westbound transfer of at least 350 MW into Mackenzie TS and Moose Lake TS.
- b) Consist of a new single circuit 230 kV line from Mackenzie TS to Dryden TS (Phase 2) with a thermal capacity that is equal to or greater than the existing single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS. This would achieve the required westbound transfer of at least 350 MW from MacKenzie and Moose Lake.
- c) Separate the necessary sections of F25A and D26A to ensure the circuits do not share a common structure over a distance that exceeds one mile.

Hydro One should consider various routing options as appropriate. Since requirements for switching and reactive facilities would depend on the configuration and line options, they are not specified at this time.

The 2014 letter from the Ontario Power Authority (the "OPA") to Hydro One indicated that the Project must be capable of 550 MW transfer west from the Thunder Bay area. At the time the letter was written, the OPA's electrical load forecast was significantly higher and included potential mining developments and the Energy East pipeline conversion project. If in the future additional transfer capability beyond 350 MW is needed, the solution would be to install dynamic reactive facilities in addition to the transmission lines indicated above.

The IESO will provide support to Hydro One as required, including discussion of possible routing alternatives. As well, the IESO will continue to monitor developments in the Region and confirm the best course of action to address supply needs, and will keep Hydro One apprised of this work.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ahmed Maria', with a stylized flourish at the end.

Ahmed Maria
Director - Transmission Planning
Independent Electricity System Operator

cc: Ms. Darlene Bradley, Hydro One
Mr. Leonard Kula, IESO
Mr. Terry Young, IESO
Mr. Alex Merrick, IESO