

Hydro One Networks Inc.'s Comments to the Discussion Paper SE-57 Embedded Generation

Thank you for the opportunity to comment on the IESO's Embedded Generation (EG) Discussion Paper (SE-57). As you are aware, Hydro One has been working closely with the IESO, OPA, OEB along with MOE and stakeholders regarding the necessary requirements for embedded generation with respect their connection on the distribution system and the impacts on its transmission system.

We are encouraged by the IESO's recognition these smaller projects, when connected to the distribution system, can make a significant aggregate contribution to the reliable operation of the transmission and distribution system and also to the achievement of the government's objectives for a clean and renewable energy supply in the future.

Hydro One agrees with many of the recommendations and in particular that there should be an objective based trigger for a system impact assessment due to the potential injection into the transmission system from aggregate installed embedded generation at a transmission station. We also agree that allocation of study costs should also be addressed within the relevant Codes.

Our specific comments are as follows:

1. Hydro One submits that the timelines assigned in this process to seek stakeholder comments on the concepts in the consultation paper may be adequate. However, to develop Market Rules Amendments and/or trigger of relevant changes to the Distribution System Code (DSC), we believe the timelines are too short for all the issues to be discussed and developed. For example, performance standards needs to be developed and/or reviewed for embedded generation and the host facility need to be clearly delineated with respect to whether they are appropriately included in the Market Rules or the Distribution and/or Transmission System Codes, and it will also be necessary to ensure that there are no gaps or conflicting requirements.
2. The Distribution System is primarily governed through the Distribution System Code and is not part of the *IESO-controlled grid*. Hence, Hydro One suggests that stakeholders and in particular Local Distribution Companies (LDC) should be fully engaged because many of the requirements would trigger amendment to the DSC. In many cases, much of the information would be available through the LDCs.
3. The process and timelines should include establishment of a Working Group or Task Force made up of relevant experts from the stakeholders to develop new rules and requirements before initiating/suggesting changes to the Market Rules, Distribution System Code and/or the Transmission System Code. These must be consistent with OEB processes to amend the DSC or TSC.
4. Hydro One agrees with the three principles, namely a) Reliability, b) Visibility and c) Standards for the successful integration of increased embedded generation in Ontario. However, we believe that IESO's discussion paper should clarify that adequate visibility of EG, its associated protections and

controls is also important to the Transmitter and the LDC to manage and operate their system and distribution business. In this regard, we agree that one model that could work would be for the LDC to provide the appropriate information to the IESO.

5. Modelling Data - Hydro One is concerned that only limited amount of data is currently provided and/or required from embedded generation greater than 10 MW and/or why it is not practical to expect appropriate model data from small generators under 10 MW. We believe that as the aggregate amount of generation increases, it will become more and more important to adequately model the impacts of this generation to ensure reliability. In recent years, there had been significant developments and discussions with respect to the proper modelling of equipment to assess the grid response. As you are aware, there have also been ongoing discussions at the NPCC level on the need to collect the modelling data and properly model units under 10MW to assess reliable operation of the IESO controlled grid, hence it is important that requirements for modelling data for units/plants under 10MW should be considered at this time.

6. Telemetry – As stated earlier, telemetry, protection and control requirements are equally important for transmitters and the LDCS to operate their system in a safe, secure and reliable manner. These requirements should be collectively developed with adequate input from stakeholders and may be appropriate as part of the DSC.

Finally, as you are aware location of EG may have negative impact on system losses. We suggest that, given the importance of managing losses to ensure energy efficiency, studies conducted by OPA and the IESO should consider to identify impact(s) on system losses and make appropriate requirements on EG within OPA procurements, Market Rules or the DSC to effectively manage losses.

If you have any questions regarding our comments, please don't hesitate to call.

Yours truly,

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