Feedback Form

Regional Electricity Planning in Peterborough to Kingston Region – September 28, 2021

Feedback Provided by:

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Following the Peterborough to Kingston regional electricity planning engagement webinar held on September 28, 2021, the Independent Electricity System Operator (IESO) is seeking feedback as outlined during the presentation. A copy of the presentation as well as a recording of the session that includes an overview of the feedback request, can be accessing from the engagement webpage.

Please submit feedback to engagement@ieso.ca by October 19, 2021.

Topic	Feedback
What information needs to be considered in these recommendations?	The unique role that municipalities play in managing economic development and community growth as they relate to infrastructure planning. Specifically, more consideration is needed of the timing challenge associated with accommodating demand for serviced land when there are electricity capacity constraints. (See further information below under General Comments/Feedback.)

Topic	Feedback
Please provide your feedback to the proposed recommendations	Generally, the City concurs with the assessment of the Gardiner TS upgrades as needed immediately. However, we believe a more expedient prioritization of Frontenac TS options, such as local generation and Conservation and Demand Management (CDM), is warranted in terms of actively involving the City in its opportunity assessments during 2022/2023. (See further information below under General Comments/Feedback.)
How can the Peterborough to Kingston Technical Working Group continue to engage with communities as these recommendations are implemented, or to help prepare for the next planning cycle?	Meetings with key stakeholders who have economic development interests and related policy levers need to be more frequently engaged in assessing potential electricity infrastructure solutions between IRRP planning timelines every five years. (See further information below under General Comments/Feedback.)

General Comments/Feedback

Local electricity customers participating in the previous two IESO engagement events successfully influenced the estimation of two high growth scenarios for the IESO's electricity forecasting for this area out to 2038 as summarized in the following table:

Demand Forecast	Belleville TS Need Date	Frontenac TS Need Date	Gardiner TS DESN 1 Need Date
Reference	Today	2029	Today
High Growth 1	-	2025	Today
High Growth 2	-	2022	Today

The needs identified for the Frontenac and Gardiner TS are related to station capacity to accommodate projected growth in electricity demand related to population growth and economic development, EV adoption, fuel switching to electricity for heating – e.g. City of Kingston facilities, CFB, Queens as well as pending local home retrofit program and Net Zero new construction program (i.e. CDM and local generation).

Generally, the City concurs with the assessment of the Gardiner TS upgrades as needed immediately as it cannot be resolved through "Non-wires solutions" due to time involved in implementing these local scale initiatives. Furthermore, the existing transformers need to be replaced regardless due to its end of life and it is understood that Hydro One already has the upgrade of this TS within their current workplan for 2022.

Several options for addressing the capacity needs at Frontenac TS were considered by IESO and utilities including:

- Distribution load transfers to an available station (ruled out).
- Increase capacity of existing stations (deferred until 2025 at the earliest).
- a new station at a new or existing site (deferred until 2025 at the earliest); and,
- Non-wires solutions such as CDM and local generation (focus of near-term 1-5years).

The assessment of options within the IRRP concluded that a combination of options, deployed in stages as indicated above, will be required to meet the needs, and provide sufficient flexibility to meet potential long-term growth.

The IESO's base case reference scenario for the Frontenac TS indicates a capacity need for the central and eastern Kingston area in the mid-term (~8 years) while the higher growth scenario 1 was chosen by the IRRP Technical Working Group for its greater likelihood which indicates a TS upgrade won't occur before 2025. This is a shift in prioritization as communicated within the March 2021 IRRP engagement which indicated action was warranted in 2022. IESO recently explained to City staff that this was due to the previous omission of the potential impact from committed CDM programs under the Province's new Save On Energy framework for 2021-2024.

Both Utilities Kingston and the City concurred that this expectation of past performance is potentially not representative of the different CDM delivery model now employed by the Province for the next few years (i.e., excluding electricity LDCs). However, moving forward the City is interested and does concur in the IRRP assessment of the potential impact from uncommitted CDM activities in all sectors with particular note of the largest opportunity in the Commercial sector (including office, retail, and institutional electricity demand). The City further agrees with the IRRP acknowledgement of this approach as a cost-effective option to address expected growth in electricity demand.

The CDM and local generation options are identified within the IRRP as a means to defer TS upgrade needs based on available forecasts with acknowledgement of clarity being needed on the implementation mechanism(s) and allocation of costs. It is noteworthy that a) the uncommitted CDM impact is relatively insignificant over the next 4 years out to 2025 and b) doesn't address existing capacity constraints being communicated to new potential customers or existing businesses looking to expand or establish a location in this service area.

It is important that the IRRP and, moreover ongoing stakeholder engagement activities within this planning area, recognize the unique role of municipalities in terms of available policy levers affecting land use and economic development. For example, the City will begin its update of Kingston's Official Plan (land use and related policy), in 2022 which may consider an expanded urban boundary further adding to growth in demand where capacity will become further constrained in the coming years. Furthermore, the City has pending incentive programs in final

stages of development that can contribute to the successful uptake of CDM and NWA in both the residential and commercial sectors within Kingston.

Battery storage alternatives, often involving local solar PV generation, were also assessed for addressing needs within the Frontenac TS service area. For the reference forecast, battery storage was also seen as a means to defer the need for a costly new transformer station in the near-term ($36.5M - $107M). However, for higher growth forecasts, battery storage was not seen as an economic or a feasible solution when compared to building a transformer station - nevertheless it was recognized that it could potentially delay the need to build a new station by reducing the expected growth in demand on the Frontenac TS. The City recognizes the logical merit of the IRRP recommendations for this location regarding:

- ruling out shifting loads to the Gardiner TS.
- the connection of a new Transformer Station to a 230 kV system ($36.5M) with the "timing and siting of the station to be coordinated between the transmitter and local utility service providers;"
- exploring implementation/cost allocation for cost effective CDM/storage to delay the need for additional capacity concurrently with development plans for a new transformer station; and,
- closely monitoring load growth.

The concern with the draft recommendation for the Frontenac TS is the timing challenges associated with siting new transmission stations and local generation systems, as well as the scaling-up of effective and well resourced CDM programs when capacity constraints are already present today in terms of accommodating ongoing development interests in the area. The growing demand for power continues in the area of de-carbonization targets (most recently CFB Kingston and Novelis). There is approximately 45 acres of vacant land in an existing business park located in the north-east corner of the City, known as the St. Lawrence Business Park (SLBP); 40 acres of this vacant land is currently going through active sale process and is anticipated to develop and require power within a couple of years. In addition, there are approximately 60 acres of City-owned lands north of the SLBP that could be developed as an expansion of the business park within the next 5 to 10 years. It is noteworthy that some of these potential sources of increased electricity demand were inadvertently omitted in the load growth projections conducted during the IRRP process earlier in the summer.

Economic feasibility of storage can be significantly impacted by who pays for the technological solutions (i.e., sources and cost of capital, limiting the burden on rate payers) as well as the business model utilized, and the associated partnerships involved (e.g., 3rd party asset managers utilizing power purchase agreements with building users). This is where the City could play a role as a landowner and development authority, along with other partners given Kingston's interest in PV generation and community net metering, as well as its influence and interest on business parks and its economic development strategy. There are also low-cost financing and grant options available to municipalities for these types of innovative and sustainable development opportunities. Therefore, the City strongly recommends that the

planning discussions for local generation and storage, among other distributed energy resource opportunities start in 2022 so that the solution(s) can be implemented if and when required in the near-term while the planning of a new TS is further considered.

Overall, the City of Kingston would benefit from more direct and ongoing involvement in identifying and assessing cost-effective and innovative solutions and believe they should be more prioritized within the IRRP over the next 1-2 years for the Frontenac TS service area concurrently with planning for a new TS.