
Independent Electricity System Operator

1600-120 Adelaide Street West
Toronto, ON

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Re: Draft Electricity Needs – December 5, 2024

The Atmospheric Fund (TAF) appreciates the opportunity to engage in the second phase of the IESO's Integrated Regional Resource Plan (IRRP) for Toronto process. As a regional climate agency working across the Greater Toronto and Hamilton Area (GTHA), we support comprehensive grid planning that prioritizes reliability and resilience. As the draft scenarios point to growing electricity needs, it is crucial that a wide range of solutions are considered to meet these demands while minimizing emissions and ensuring resilience.

We are encouraged to see that the IESO is considering both traditional wires options and non-wires solutions (NWS) in addressing Toronto's electricity needs. In this submission, we emphasize the importance of fully integrating and fairly assessing NWS in the planning process. While traditional infrastructure upgrades may still be necessary, NWS can help limit the scale of expansion, mitigate the financial burden on ratepayers, and generate a range of non-energy benefits such as emissions reductions and local economic opportunities.

Data Inclusion and Consideration Points for Options Assessment

To ensure a robust analysis of all potential solutions, we emphasize the need for full and transparent consideration of non-wires solutions, like local generation and storage, demand response, efficient electrification, and other local conservation and demand management (CDM) measures, to protect ratepayers from rising electricity bills. The analysis should consider the following key factors:

- **Comprehensive cost-benefit analysis:** Assess both the technical and economic feasibility of NWS, evaluating their potential to meet demand, scalability, and cost-effectiveness relative to traditional infrastructure. For instance, local generation and storage may offer opportunities for grid flexibility and resilience, while demand response and CDM measures can help reduce peak demand and overall consumption. Additionally, avoided distribution costs should be factored into the cost-effectiveness assessment for NWS, ensuring that the full value of these solutions, including their ability to defer or reduce the need for traditional poles-and-wires infrastructure expansion on both the local grid and the bulk system, is considered. While these savings are distributed locally, they directly impact overall system costs, potentially yielding significant savings for ratepayers. Omitting these avoided costs risks underestimating the economic value of NWS in comprehensive grid planning.
- **Transparent input data, assumptions, and methodologies:** Provide clear assumptions and methodologies to enable stakeholder understanding of how solutions were evaluated, and the criteria for selecting certain options over others. Data should be made publicly

available in accessible formats, with clear sources and explanations for why certain inputs and transformations were used and where they were derived from. This is important for transparency and fostering informed participation and collaboration among stakeholders.

- **Accounting for future demand uncertainty:** Given the uncertainty of future electricity demand and the long lead times for traditional poles-and-wires investments, it is essential to incorporate flexibility into the planning process. This includes considering the incremental value of NWS and their ability to scale quickly, helping mitigate the risk of stranded assets if demand projections do not materialize as expected. By accounting for this uncertainty, stakeholders can make more resilient decisions that protect ratepayers from unnecessary financial burdens. This potential benefit of prioritizing investment into NWS to account for forecast error is highlighted in [materials released by the OEB](#) last year as part of its Benefit-Cost Analysis Framework engagement.
- **Decarbonization alignment:** Assess the emissions impact of all solutions. With Toronto's carbon emissions increasing by 1.5% in 2023, the urgency for decarbonization is clear. NWS can play a key role in achieving reductions by offering low-carbon alternatives that complement grid expansion. Given the IESO's recent forecast projecting a [75% increase](#) in electricity demand by 2050, the need to consider NWS is more pressing than ever.

Reducing Reliance on Port Lands

We're encouraged by the recognition of the need to reduce reliance on the Port Lands Energy Centre (PEC). As Toronto's electricity needs grow and the city remains committed to achieving net-zero greenhouse gas (GHG) emissions by 2040, ramping down and phasing out fossil fuel-based generation at PEC is essential.

In June 2024, Toronto City Council [passed a resolution](#) to transition away from gas-fired electricity generation at PEC by 2035, with exceptions only in emergency situations. TAF supported this resolution, recognizing that rising emissions in the GTHA undermine the city's decarbonization efforts. Notably, PEC is Toronto's largest single source of both GHG emissions and nitrogen oxides (NOx).

PEC's emissions also pose significant health risks to nearby residents. A March 2023 [report](#) for a proposed residential development in the Port Lands indicated that if tall residential buildings are constructed, PEC's NOx emissions would exceed legal limits by seven times at points of human exposure. NOx is a pollutant known to cause asthma in young children and exacerbate respiratory illnesses in vulnerable populations. This shows that the vision for the future of Toronto's waterfront is incompatible with the long-term operation of PEC.

Reducing reliance on PEC will require scaling up local renewable energy generation, increasing energy storage capacity, and maximizing energy efficiency and distributed energy resources (DERs). This transition is vital not only for meeting Toronto's climate goals but also for protecting public health and fostering sustainable urban development.

The City of Toronto's ongoing electricity needs assessment for the Port Lands redevelopment aligns closely with these objectives by exploring the integration of thermal energy networks and DERs at both behind-the-meter and community scales. This represents an important opportunity for the Port Lands to be a model for sustainable energy solutions in urban redevelopment. Given

the 20-year outlook, it is crucial not to limit the options analysis to the current policy framework. This includes considering proven solutions like offshore wind as a potential source of renewable energy, which could significantly enhance local energy resilience and contribute to Toronto's net-zero targets.

Achievable Potential Study for Toronto

We welcome the IESO's initiative to conduct a local Achievable Potential Study (APS) for Toronto. This represents a key opportunity to identify and leverage the potential of behind-the-meter DERs and energy efficiency programs to address Toronto's electricity planning needs.

As outlined above in our considerations for Toronto's IRRP, the APS should likewise incorporate both province-wide and local avoided costs associated with DERs and energy efficiency. To accurately assess and capture the economic value of DERs and energy efficiency, it is essential to supplement estimates of benefits to the bulk system with local estimates of avoided or deferred distribution infrastructure costs specific to Toronto. Recognizing these avoided costs is crucial for fully assessing and capturing their economic value, their role in the broader grid planning process, and the significant overall system benefits they can provide. By doing so, the APS will better capture the role of DERs and energy efficiency in meeting Toronto's growing electricity demands, increasing system resilience, and supporting Toronto's net-zero emissions goals.

We encourage the APS to robustly assess the long-term potential of DERs and energy efficiency over the 20-year study horizon. This includes evaluating their contributions to:

- Reducing peak demand and improving grid reliability.
- Deferring or avoiding costly upgrades to both the transmission and distribution systems.
- Enhancing resilience in the face of climate and energy challenges.
- Supporting equitable energy access and reducing energy costs for Toronto residents.

Further, it is essential to ensure the full and transparent publication of input data, assumptions, and methodologies, where possible. This will allow for greater clarity and trust in the results, which will be used by LDCs, municipalities, program staff, and project developers helping Toronto meet its electricity needs over the next 25 years.

The insights from the APS will be critical for informing the IRRP and ensuring Toronto's energy system is resilient and sustainable in the face of growing future demand. Accurately and fulsomely capturing the benefits of DERs and energy efficiency will help make decisions aligned with Toronto's climate goals.

Sincerely,

Bryan Purcell



VP of Policy & Programs

About the Atmospheric Fund

The Atmospheric Fund (TAF) is a regional climate agency that invests in low-carbon solutions for the Greater Toronto and Hamilton Area (GTHA) and helps scale them up for broad implementation. Please note that the views expressed in this submission do not necessarily represent those of the City of Toronto or other GTHA stakeholders. We are experienced leaders and collaborate with stakeholders in the private, public and non-profit sectors who have ideas and opportunities for reducing carbon emissions. Supported by endowment funds, we advance the most promising concepts by investing, providing grants, influencing policies and running programs. We're particularly interested in ideas that offer benefits in addition to carbon reduction such as improving people's health, creating local jobs, boosting urban resiliency, and contributing to a fair society.