July 15, 2025

BY EMAIL: engagement@ieso.ca

Ms. Samantha Polito
Advisor, Regional and Community Engagement
Independent Electricity System Operator
Toronto, Ontario

Dear Ms. Polito

Re: IESO's July 10, 2025 Update with respect to its Toronto Integrated Regional Resource Plan

In June 2024, Toronto City Council asked the Independent Electricity System Operator (IESO) to develop an Integrated Regional Resource Plan (IRRP) to phase-out the Portlands' gas-fired power plant by 2035 (except for emergency back-up) and meet Toronto's future electricity needs with an *integrated combination* of energy efficiency and demand management and local renewable energy (e.g., rooftop and parking lot solar, Lake Ontario offshore wind power) and energy storage (e.g., stationary and EV batteries).[i]

Unfortunately, the IESO is refusing to evaluate two key resource options to achieve the City's objectives, namely, Lake Ontario offshore wind power and paying EV owners to provide power back to the grid when it is needed (Vehicle-to-Grid Integration or V2G).

Lake Ontario Offshore Wind Power

According to the IESO, it is refusing to evaluate the cost-effectiveness of Lake Ontario offshore wind power as a result of a February, 2011 McGuinty Government news release which proclaimed a moratorium on offshore wind projects[ii] to permit "further scientific research" so that future decisions could be based "on the best available scientific data."[iii]

The IESO's reason for refusing to evaluate the cost-effectiveness of Lake Ontario offshore wind power is without merit for the following reasons.

1. Dalton McGuinty is no longer Premier of Ontario.
2. There is no legally binding Ontario regulation that prohibits offshore wind power.
3. The IESO has not received a directive from the Government of Ontario to not evaluate the cost-effectiveness of Lake Ontario offshore wind power.
4. After the McGuinty Government issued its news release, the Ontario Ministry of Natural Resources undertook a couple of studies on the impacts of offshore wind farms on fish and fish habitat and found that they can be implemented with minimal aquatic impacts.[iv]
5. According to the National Audubon Society, "two-thirds of bird species in North America will face extinction unless we tackle climate change."[v] As a result, Audubon supports environmentally appropriate offshore wind projects to help decarbonize the economy and stabilize the climate.[vi]
6. According to a recent Energy Futures Group report, offshore wind turbines can produce electricity at a cost that is 40 to 60% lower than a new nuclear reactor.[vii]
7. Ninety-six (96) five-megawatt (MW) Lake Ontario offshore wind turbines could produce the same amount of electricity per year as the Portlands gas plant did in 2023.[viii] The total lakebed footprint of the turbines would be 9,600 square metres.[ix]

As the IESO must know, wind conditions offshore are much more conducive to producing steady power with fewer turbines. As an agency that continually cites a (in our view mythical) lack of physical space for renewable energy infrastructure, ignoring a major way to address this concern is to say the least perplexing.

Vehicle to Grid (V2G) Integration

According to the IESO, Ontario will have 6.4 to 8.1 million electric vehicles by 2040.[x] If these EVs were combined with bi-directional chargers, they could store surplus wind and solar energy and provide power back to the grid when it is needed. Specifically, by 2040 our EVs could provide 64,000 to 81,000 MW or more to the grid when needed.[xi] That is, their electricity supply capacity would be more than double Ontario's peak hour electricity demand in 2024 (23,852 MW).

Nevertheless, the IESO is refusing to evaluate the cost-effectiveness of V2G to balance Toronto's demand and supply of electricity over the next twenty years "given the barriers to deploying a V2X program at a significant scale."[xii]

The IESO's refusal to evaluate the cost-effectiveness of V2G is without merit since reducing the barriers to V2G will lower our electricity bills by reducing the need for stand-alone stationary batteries and make EV ownership more affordable. In the U.K, Octupus Energy provides free EV charging to EV owners who agree to provide power back to the grid during peak demand hours.[xiii] Similarly, in France, Renault provides free EV charging to EV owners who allow their EVs to provide power back to the grid when it is needed.[xiv]

Citing "barriers" is like saying in 2010 that stationary batteries would never be viable. These technologies, as the IESO well knows, are moving fast and many jurisdictions are pioneering ways to lower upfront barriers. That we would simply ignore this massive storage potential because conditions are not ideal today makes as much sense as ignoring the potential of stationary batteries fifteen years ago.

American Nuclear Power and a New Transmission Line

As a result of its refusal to evaluate Lake Ontario offshore wind power and V2G, the IESO has **erroneously** concluded that: a) we can't achieve a virtually complete phase-out the Portlands gas plant by 2035; and b) we can't meet Toronto's future electricity needs by an integrated combination of energy efficiency, demand management, local renewables and storage.

Therefore, the IESO is recommending that Toronto's future electricity needs should be met by building four new first-of-their-kind American (GE-Hitachi) nuclear reactors at Darlington and a new transmission line to bring this power to downtown Toronto.[xv] In addition, to needlessly raising our electricity bills and delaying the phase-out of the Portlands gas plant, the IESO's recommended nuclear option would jeopardize our national security by increasing our dependence on American energy imports (enriched uranium[xvi] and fossil gas[xvii]).

Conclusion and Recommendation

The IESO's mandate is to meet Ontario's need for reliable electricity at the lowest possible cost.

To fulfill it mandate, the IESO must make its decisions based on objective, evidence-based analyses of the cost and feasibility of all our electricity resource options. Unfortunately, the IESO's bias in favour of large-scale centralized supply options (e.g., nuclear, fossil gas) has blinded it to the fact that to fulfill its mandate and to respect the wishes of Toronto City Council it must evaluate the potential for Lake Ontario offshore wind power and V2G integration to meet Toronto's electricity needs during the next twenty years.

We are no longer in the 1950s. Last year, 92.5% of the world's new electricity supply capacity was renewable.[xviii] Battery and other storage technologies are taking off worldwide. AI and automation are reshaping distributed energy networks. The IESO needs to ensure that Ontario

has a modern, reliable energy system, not a costly throwback that is completely out of step with modern energy technology.

Recommendation: The IESO should immediately evaluate the feasibility and cost-effectiveness of Lake Ontario offshore wind power and Vehicle-to-Grid (V2G) Integration to meet Toronto's growing electricity needs during the next twenty years in combination with energy efficiency, demand response, rooftop and parking lot solar, and stationary batteries.

Yours sincerely,

Jack Gibbons, Chair

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[i] https://secure.toronto.ca/council/agenda-item.do?item=2024.MM19.9

[ii] IESO, *Toronto Regional Electricity Planning Webinar #3 – Options Screening*, (July 10, 2025), page 29; https://www.ieso.ca/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Electricity-Planning-Toronto

[iii] Government of Ontario News Release, "Ontario Rules Out Offshore Wind Projects", (February 11, 2011).

[iv] Ontario Ministry of Natural Resources, *Offshore wind power projects in the Great Lakes: Background information and science considerations for fish and fish habitat*, (2011), page 6.

[v] National Audubon Society, *Developing The Offshore Wind That Birds Need*, (2025), page 5.

[vi] *Developing The Offshore Wind That Birds Need*, page 6.

[vii] Chelsea Hotaling, Energy Futures Group, *Levelized Cost of Energy ("LCOE") Calculations*, (May 2025), Table 3 with ITC at 30%.

[viii] According to the IESO, an offshore wind farm will have an annual capacity utilization rate of 50%. Therefore a 5 MW wind turbine would produce 21,900 MWh per year. In 2023 the annual output of the Portlands gas plant was 2,100,000 MWh. IESO, *Pathways to Decarbonization, Appendix B*, (December 15, 2022), page 29; and email to Jack Gibbons, Ontario Clean Air Alliance from Stephen Smith, Environmental Specialist, Atura Power, (April 29, 2024).

[ix] Assuming each turbine tower has a lakebed footprint of 100 square metres.

[x] IESO, *IESO Demand & Conservation Planning Technical Paper: Electric Vehicles*, (July 2025), page 7.

[xi] Assuming the average capacity of the EV bi-directional chargers is 10 kW. https://www.power-sonic.com/blog/guide-to-level-2-ev-charging/#:~:text=Charging%20speeds%20for%20Level%202,Level%203%20DC%20fast%20charging

[xii] IESO, *Feedback Received and IESO Response: Toronto Regional Electricity Plan Public Webinar #2: Draft Electricity Needs – December 5, 2024*, page 23: https://www.ieso.ca/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Electricity-Planning-Toronto

[xiii] https://octopus.energy/power-pack/

[xiv] https://www.mobilityhouse.com/int_en/our-company/newsroom/article/charge-for-free-renault-group-mobilize-and-the-mobility-house-launch-vehicle-to-grid-in-france-while-germany-is-establishing-the-regulatory-framework

[xv] IESO, *Toronto Regional Electricity Planning Webinar #3 – Options Screening*, (July 10, 2025), page 27.

[xvi] https://www.cleanairalliance.org/ge-contract/

[xvii] https://www.cleanairalliance.org/getting-ontario-out-of-the-american-gas-trap/

[xviii] https://cleantechnica.com/2025/03/26/92-5-of-new-power-capacity-added-worldwide-in-2024-was-from-renewables/