October 7, 2025

BY EMAIL: Lesley.gallinger@ieso.ca

Ms. Lesley Gallinger
CEO, Independent Electricity System Operator (IESO)
Toronto, Ontario

Dear Ms. Gallinger:

Re: IESO's Draft Toronto Integrated Regional Resource Plan Recommendations

On June 26, 2024, Toronto City Council passed a motion requesting the IESO to develop a Toronto Integrated Regional Resource Plan (IRRP) to:

1. Phase-out gas-fired electricity generation at the Portlands Energy Centre by 2035, except in extreme, exceptional and emergency circumstances totalling less than 88 hours per year;
2. Rapidly increase local renewable energy generation and storage; and
3. Maximize cost-effective energy efficiency.[i]

On September 25, 2025, the IESO posted its draft response to the City's request.[ii]

I am writing to provide you with the Ontario Clean Air Alliance's submissions with respect to: a) the IESO's draft Toronto IRRP; and b) the additional actions the IESO should take to respect the wishes of Toronto City Council and lower our electricity bills.

No plan to phase-out Portlands Gas Plant by 2035

The IESO's draft IRRP does not include a plan to phase-out the Portlands gas plant by 2035 or by another date.

No plan to rapidly increase local renewable energy generation and storage and maximize cost-effective energy efficiency

According to the IESO, Toronto's electricity demand will increase by 70-100% by 2044. That is, by 3,300 to 4,700 megawatts. [iii]

192 Spadina Ave., Suite 406, Toronto ON M5T 2C2
416.260.2080 | contact@cleanairalliance.org | CleanAirAlliance.org

It appears that the IESO will recommend that only about 5.3-7.6% of this rise in demand (50 to 250 MW) should be met by behind-the-meter demand management, renewable energy and storage.[iv]

According to the IESO's plan, most of Toronto's future electricity needs should be met by high-cost new nuclear reactors, including four new U.S. GE-Hitachi reactors at Darlington. These new American reactors will require Ontario to import enriched uranium from the U.S. to fuel them – imports which could be curtailed at a moment's notice by the White House.[v]

Specifically, according to the provincial government's plan, nuclear power will provide 75% of Ontario's electricity supply by 2050 – up from 48.5% in 2024. And renewables will shrink from 35% of our electricity mix to 25%.[vi]

This doesn't make sense. As Table 1 shows, new nuclear power costs 2 to 8 times more than wind and solar electricity and 10 times more than energy efficiency.

Table 1: Ontario's Electricity Options: A Cost Comparison[vii]

	Cents per kWh
Nuclear	22.1 to 32.2
Great Lakes Offshore Wind	12.0 to 12.9
Onshore Wind	3.8 to 6.0
Utility-Scale Solar	5.7
Energy Efficiency	3.1

N.B. The nuclear cost estimates do not include the decommissioning of the reactors and the storage of their radioactive wastes for one million years.

We need to rapidly increase local renewable energy and energy efficiency to lower the electricity bills of Toronto's hard-working families and to make our industries more competitive.

Underwater Third Line to Toronto

The IESO is proposing that a 900 MW high-voltage direct current transmission line be built underwater in Lake Ontario to connect downtown Toronto to Hydro One's high-voltage transmission network east of Oshawa. The target in-service date is 2034.[viii]

This proposal would be very beneficial if it were used to transport renewable power to Toronto. It would be in the public interest for multiple reasons. First, a third unique transmission corridor to downtown Toronto will significantly increase Toronto's security of supply. Second, the line will enable a Lake Ontario offshore wind farm to supply Toronto. Third, the line will help facilitate increased renewable electricity imports from eastern Ontario, Quebec and Nova Scotia.

Recommendations

1. *The final IRRP should include a plan to phase-out the Portlands gas plant by 2035 except during emergency circumstances totalling no more than 88 hours per year. The IRRP should also include interim gas power reduction targets for 2028, 2030, 2032 and 2034.*

2. Shifting demand from peak to off-peak periods (demand response) is a very cost-effective way to reduce the need for Portlands on our hottest summer days and our coldest winter nights.

   The IESO's Peak Perks program turns down the thermostats of residential and small business customers' air-conditioners and heat pumps by up to two degrees Celsius on hot summer weekdays (but not weekends and holidays) between June 1st and September 30th. Participants are paid $75 when they enroll and $20 for each additional year that they stay enrolled.[ix] These payments are equivalent to $411 per MW per business day assuming participants remain enrolled for five years,[x] which is 76% lower than the cost of a new gas-fired peaker plant.[xi]

   The IESO should work with Toronto Hydro and the Mayor's Office to increase Peak Perks market share amongst homeowners and small businesses with central air conditioning or a heat pump to 90% by 2030.

   The Peak Perks load control program should be expanded to include electric water heaters.[xii]

3. The IESO also pays Toronto's large commercial, institutional and industrial consumers to shift some of their demands from peak to off-peak periods in the summer and the winter.

   The payments are $332 per MW per business day in the summer and $139 per MW per business day in the winter.[xiii] That is, they are 80-92% lower cost than the cost of a new gas-fired peaker plant.

   These payments are reducing Toronto's peak hour demands by approximately 5%.[xiv] But we can do much better.

192 Spadina Ave., Suite 406, Toronto ON M5T 2C2
416.260.2080 | contact@cleanairalliance.org | CleanAirAlliance.org

The IESO should pay Toronto's large electricity consumers to do more load shifting in order to reduce Toronto's total peak hour demand by 10% by 2030.

4. The cost of electricity from new nuclear reactors will be 22 to 32 cents per kWh. Therefore, by paying electricity consumers up to 22 to 32 cents per kWh to invest in energy efficiency measures we can reduce everyone's electricity bill by reducing the need for much higher cost new nuclear reactors.

   Unfortunately, the IESO's draft IRRP appears to be implicitly assuming that it should only pay consumers approximately 3 cents per kWh to save electricity.[xv] This does not make sense. Furthermore, the IESO has never explained why it is not proposing to pursue all of Toronto's cost-effective electricity saving opportunities that will reduce the energy bills of Toronto's and Ontario's hard-working families and businesses.

   The IESO should pay the full incremental cost of all of Toronto's energy efficiency investment opportunities that can save electricity at a lower cost than new nuclear reactors.

5. According to the IESO, Toronto's total annual electricity consumption will rise by approximately 16.9 to 24.2 billion kWh by 2044.[xvi]

   Using conservative assumptions, McDiarmid Climate Consulting has estimated that rooftop solar on Toronto's homes, buildings and large parking lots could supply 50-70% (11.9 billion kWh) of the forecast rise in electricity consumption.[xvii]

   Large electricity companies like Ontario Power Generation and Bruce Power are paid for every kWh of nuclear and gas power that they provide to the grid. But homeowners and small businesses with solar panels are not compensated if they supply more electricity to the grid than they purchase from it. That is, unlike large power companies, they are not paid for making net electricity exports to the grid.

   This doesn't make economic sense since small-scale solar can meet our electricity needs at a lower cost than new nuclear reactors.[xviii]

   The IESO should establish a fair market-value standard offer price for solar power provided to Toronto's electricity grid by homeowners and small businesses.

6. According to the IESO, Great Lakes offshore wind farms would have annual capacity utilization rates of 50%.[xix] Therefore, 5,525 MW of Lake Ontario offshore wind power could meet 100% of Toronto's forecast rise in electricity consumption by 2044 (24.2 billion kWh).[xx] The total lakebed footprint of these wind turbines would be 0.11 square km.[xxi]

Unfortunately, Government of Ontario red tape is preventing the development of Great Lakes offshore wind power. Cutting this red tape would lower our electricity costs, help phase-out the Portlands gas plant by 2035, and create jobs.

The IESO should request that the Government of Ontario eliminate its red tape that is preventing the development of Great Lakes offshore wind power.

7. According to the IESO, Ontario will have 6.4 to 8.1 million electric vehicles (EVs) by 2040.[xxii] It is reasonable to assume that approximately 20% of these EVs will be in Toronto.[xxiii] If Toronto's EVs are 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, Toronto's EVs could provide 12,800 to 16,200 MW of electricity back to the grid when it is needed.[xxiv] That is, by 2040 the total storage capacity of Toronto's EVs will be greater than Toronto's forecast peak electricity demand in 2044 (8,000 to 9,400 MW).[xxv]

   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 periods.[xxvi]

   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.[xxvii]

   The IESO should pay Toronto EV owners to provide power back to the grid when it is needed.

Conclusion

The good news is that by adopting our recommendations, the IESO can develop a Toronto IRRP that will respect the wishes of Toronto City Council, phase-out the Portlands gas plant on Toronto's waterfront by 2035, lower the electricity bills of Toronto's and Ontario's electricity consumers, and increase our national security by eliminating the need for new American nuclear reactors and enriched uranium imports from the U.S. – imports that could be curtailed at a moment's notice by the White House.

192 Spadina Ave., Suite 406, Toronto ON M5T 2C2
416.260.2080 | contact@cleanairalliance.org | CleanAirAlliance.org

Yours sincerely,

Jack Gibbons

Chair

cc. engagement@ieso.ca

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

[ii] IESO, *Toronto Regional Electricity Planning: Webinar #4 – Options Analysis and Draft Recommendations*, (September 25, 2025). https://www.ieso.ca/Sector-Participants/Engagement-Initiatives/Engagements/Regional-Electricity-Planning-Toronto

[iii] *Options Analysis and Draft Recommendations,* page 6. Toronto's peak electricity demand is currently approximately 4,700 MW. See: Government of Ontario, *News Release*, "Ontario and Toronto Planning for the City's Growing Electricity Needs", (April 11, 2024).

[iv] *Options Analysis and Draft Recommendations,* page 10.

[v] https://www.theglobeandmail.com/business/article-with-us-tensions-rising-canada-lacks-its-own-uranium-enrichment/

[vi] Ontario, *Energy for Generations*, (June 2025), page 65, Figure 18; and Ontario Energy Board, *Ontario's Electricity Supply Mix: 2024 Data.*

[vii] For electricity supply costs see: Chelsea Hotaling, Energy Futures Group, *Levelized Cost of Energy ("LCOE") Calculations,* (May 2025), Table 3, assuming Investment Tax Credit at 30%. We have converted the U.S. $ estimates to Canadian dollars by multiplying by 1.39. For cost of energy efficiency see: IESO, *2025-2027 Demand Side Management Program Plan*, (January 2025), page 7.

[viii] *Options Analysis and Draft Recommendations*, pages 58 & 59.

[ix] https://saveonenergy.ca/For-Your-Home/Peak-Perks?utm_source=bing&utm_medium=Paid&utm_campaign=IESO_1463_Microsoft_Search_Peak_Perks_Resi_Flight2&utm_id=IESO_1463&msclkid=45b6987d0c831604dd7cf0a11d0e6574

[x] A customer that is enrolled in Peak Perks for five years will receive an average annual payment of $31 ($155/5). There are 84 business days between June 1 and September 30. Therefore, the average payment per business day is $0.37 ($31/84 days). According to the IESO, it assumes a peak demand reduction of 0.9 kW per device for each activation of the Peak Perks program. Therefore, its cost per kW of demand reduction is $0.41 per kW ($0.37/0.9) or $411 per MW per business day. Email to Jack Gibbons from IESO Customer Relations, (May 22, 2024).

[xi] In May 2024, the IESO agreed to pay Atura Power approximately $1,681 per MW per business day to build and operate a 430 MW gas-fired peaker plant (business days exclude weekends and holidays). IESO, *Long-Term RFP (LT1 RFP) – Final Results*, (May 9, 2024).
[xii] https://www.aceee.org/sites/default/files/pdfs/demand_flexibility_of_water_heaters_-_encrypt.pdf
[xiii] IESO, *Capacity Auction: Post-Auction Report*, (December 5, 2024).
[xiv] The IESO has contracted for 231 MW of demand reductions in the summer of 2025 and 190 MW of demand reductions in the winter of 2025/26. Toronto's annual peak hour demand is approximately 4,700 MW. *Capacity Auction: Post-Auction Report*; and "Ontario and Toronto Planning for the City's Growing Electricity Needs".
[xv] The IESO's 2025-2027 Demand Side Management Plan forecasts that its average cost of saving a kWh will be 3.1 cents. *2025-2027 Demand Side Management Program Plan*, page 7.
[xvi] In 2024 Toronto Hydro's customers consumed 24.2 billion kWh. The IESO is forecasting that Toronto's demand for electricity will grow by 70 to 100% by 2024. Toronto Hydro, *Annual Information Form for the Year Ended December 31, 2024*, page 18; and *Options Analysis and Draft Recommendations*, page 6.
[xvii] McDiarmid Climate Consulting, *Transforming Toronto with Solar*, (November 21, 2024), pages 5 & 6.
[xviii] According to the IESO, the cost of small-scale solar is 11.7 cents per kWh. IESO, *Annual Planning Outlook: Resource Costs and Trends*, (March 2024), page 5.
[xix] IESO, *Pathways to Decarbonization*, *Appendix B*, (December 15, 2022), page 29.
[xx] 5525 MW x 8760 hours per year x 0.5 = 24.2 billion kWh.
[xxi] Assuming 1,105 (5 MW) wind turbines each with a lakebed foot print of 100 square metres.
[xxii] IESO, *IESO Demand & Conservation Planning Technical Paper: Electric Vehicles,* (July 2025), page 7.
[xxiii] Toronto's peak electricity demand is approximately 20% of Ontario's peak electricity demand. "Ontario and Toronto Planning for the City's Growing Electricity Needs".
[xxiv] Assuming the average capacity of EV bi-directional chargers is 10 kW. https://www.power-sonic.com/guide-to-level-2-ev-charging/#:~:text=Charging%20speeds%20for%20Level%202,Level%203%20DC%20fast%20charging
[xxv] Toronto's annual peak hour demand is approximately 4,700 MW. The IESO is forecasting that it will increase by 70 to 100% by 2044. "Ontario and Toronto Planning for the City's Growing Electricity Needs"; and *Options Analysis and Draft Recommendations,* page 6.
[xxvi] https://octopus.energy/power-pack/
[xxvii] 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

192 Spadina Ave., Suite 406, Toronto ON M5T 2C2
416.260.2080 | contact@cleanairalliance.org | CleanAirAlliance.org