Feedback Form

Annual Planning Outlook Demand Forecast and Demand Scenarios – November 18, 2025

Feedback Provided by:

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To promote transparency, feedback submitted will be posted on the Annual Planning Outlook engagement page unless otherwise requested by the sender.

- ☐ **Yes – there is confidential information, do not post**
- X **No – comfortable to publish to the IESO web page**

Following the Annual Planning Outlook Demand Forecast and Demand Scenarios on November 18, 2025 engagement webinar, the Independent Electricity System Operator (IESO) is seeking feedback from stakeholders on the items discussed. The presentation and recording can be accessed from the Annual Planning Outlook.

Note: The IESO will accept additional materials where it may be required to support your rationale provided below. When sending additional materials please indicate if they are confidential.

Please submit feedback to engagement@ieso.ca **by December 2.**

Please provide your feedback regarding the IESO's plans for the three scenarios in 2027 APO for the following assumptions:

General Scenario Framework:

Ontario requires electricity planning scenarios that are **credible, precautionary, fully transparent**, and aligned with Canada's 2050 net-zero commitments. The *2026 APO presentation* correctly notes major uncertainties in economic conditions, electrification, and industrial development, but the scenarios still underweight several core risks:

- **Climate-driven disruptions** to water availability and hydropower output.
- **Grid reliability risks from extreme heat** (winter is no longer reliably the peak, per the dual-peaking slide on p. 10).
- **Cumulative industrial load uncertainty**—especially in mining, EVs, and data centres.
- **Over-reliance on gas-fired and hydroelectric generation** remains inconsistent with Ontario's emissions trajectory.
- **Wind, solar, battery storage, and conservation** are the only resources that can scale up rapidly, affordably, and reliably within a climate-compressed decade—and they should be expanding, not contracting, in Ontario's planning.

Ontario needs scenarios that are cautious in the face of uncertain future electricity demands, prepare for **climate-related extremes** and **lower availability of water-based resources**—not scenarios that simply expand capacity based on uncertain industrial forecasts.

Driver	**Reference**	**High**	**Low**	**General**
Building Electrification				The assumption of steady but moderate BE program uptake underestimates the pace of climate policy, municipal emissions reduction plans**, and** rapid changes in heating technology economics**.** Heat pumps are already out-competing gas furnaces in many markets.
Transportation Electrification	.			Demand projections appear high, given recent lackluster EV adoption

				curves and a fractured EV industry in Ontario. Overall EV growth has stalled, and it doesn't look like it is going to change anytime soon.
Auto/steel Sectors				Industrial scenarios must incorporate a risk-weighted probability model, not a binary "on/off" assumption for major industrial loads.
Nation building and priority projects	The APO assumes reasonable growth based on "known projects," with acceleration in the High case. However, the *presentation* acknowledges high uncertainty in critical mineral and mining timelines.			Ontario's "nation-building" project pipeline is being consistently **overestimated,** and it looks like Canada could be going into a recession within the next 6 months.
Industrial Mineral extraction & processing sub-sector	The APO (slide 15) forecasts continued mining growth under all scenarios. This ignores: • Water-intensive processing risks during drought and heat waves • Market volatility in nickel, lithium, and rare earth prices • Historical delays in Ontario's mining approvals (Ring of Fire is now >14 years behind)			Model a conservative scenario where mining grows slowly or becomes constrained by: • Climate impacts • Lack of Indigenous consent • Environmental permitting limitations This is essential to prevent over-planning of electricity supply based on speculative mining expansions.
Electricity Demand Side Management (eDSM)	The APO assumes that eDSM achieves 1% new savings annually in Ref and High scenarios, and 0.9% in Low.			Model a **Moderate DSM** scenario that includes Federal-provincial program stacking.

Data centre development	Data centre assumes continued strong growth. **Concern:** IESO continues to treat data centres as inevitable, rather than policy-controllable. Globally, governments are beginning to cap or pause new data centre approvals due to: • Grid stress • Water consumption • Local air quality impacts • Land-use conflicts			Develop policy and legislation for a scenario where data centre expansion is capped or restricted **for both water and electricity consumption.** Require advanced liquid cooling, direct-to-chip, immersion technologies and advanced efficiency models to reduce water and electricity consumption. Ontario should not over-commit to data centres as the LLT projects will not be operational for 5 to 10 years. However, solar, wind and battery storage could be deployed more quickly with lower overall costs.

Industrial decarbonization & Hydrogen

What additional considerations should IESO take into account when modelling the Industrial decarbonization & Hydrogen in the 2027 APO?

ORA:

Hydrogen and industrial decarbonization research highlight major uncertainty in both technology pathways and load impacts.

Key gaps:

1. Water Requirements

Electrolysis requires **large quantities of freshwater and electricity**, placing serious pressure on local watersheds and rivers already experiencing climate-driven low flows. This is particularly concerning for northern and remote communities. However, large deposits of natural hydrogen were recently discovered in Saskatchewan and Quebec. Natural hydrogen should be much cheaper and more abundant to bring to market, eliminating the need for hydrogen electrolysis in Ontario.

2. Round-Trip Efficiency Losses

Hydrogen electrolysis is a **high-loss energy carrier**, often wasting 60–70% of the original electricity input. Scenarios must incorporate:

- Energy loss multipliers, as the system-wide inefficiency affects generation demand, which will make it costly and uncompetitive with natural hydrogen.

3. Risks of Overestimating Hydrogen Adoption

The APO should model scenarios in which industrial hydrogen electrolysis fails to scale economically or stagnates due to a lack of infrastructure and natural hydrogen coming onto the market.

4. Local Environmental Impacts

Electrolyzer siting near rivers is likely to result in thermal discharge, land disturbance, or water-use impacts requiring a more rigorous environmental assessment. All the while, this government has sidelined effective environmental legislation, public consultation, and the right to appeal a Minister's decision.

Beneficial Electrification (BE)

What additional considerations should IESO take into account when modelling Beneficial Electrification in the 2027 APO?

ORA:

BE is described as "efficient electrification," but missing considerations must be added:

1. Common Sense:

Ontario cannot expand Beneficial Electrification while simultaneously sidelining the only resources capable of supporting it affordably and on time. **Wind, solar,** battery storage**, distributed energy resources, and conservation/DSM are the cheapest, cleanest, fastest-to-build, lowest-risk, and most climate-resilient** tools for meeting the growth in electric heating, cooling, transportation, and industrial loads. Modern grids rely on non-emitting renewables paired with storage to provide reliable peak capacity, voltage support, and fast response — all at far lower cost and risk than new hydropower. Yet the IESO planning trajectory continues to constrain these resources in favour of slow, capital-intensive, and climate-vulnerable hydroelectric generation.

Electrification without a rapid scale-up of environmentally sustainable and clean renewables, storage, and conservation is not just inconsistent; it is economically irrational and strategically

dangerous. Common sense demands the opposite: **Ontario must dramatically increase wind, solar, storage, and conservation/DSM if electrification is to succeed**.

2. Hydropower Disinformation:

Ontario must also stop treating hydroelectric generation as beneficial electrification or a low-carbon resource. Hydropower is not a climate solution — it is a **significant and worsening source of greenhouse gas emissions**. Small hydro facilities under 10 MW, with their shallow, slow-moving reservoirs, emit **large quantities of methane**, often comparable to the lifecycle emissions of natural gas plants. These emissions are amplified by the **peaking operations** required to make small-river projects economically viable: daily water-level fluctuations repeatedly wet and dry the littoral zone, accelerating decomposition and triggering intense methane release when the sediments are reflooded. As temperatures rise and nutrient-rich sediments continue to accumulate behind dams, methane production continues to increase. Far from providing climate benefits, Ontario's small hydro fleet is **fueling climate change**, not mitigating it.

Relying on hydropower to "offset" a corporation's or industry's electricity use is carbon disinformation and a growing liability. Claiming that reservoir-based hydro is "clean" or "low-emitting" and issuing or purchasing clean energy credits based on that claim misrepresents the science and misleads the public. In ORA's view, **presenting methane-emitting hydropower as a climate solution borders on fraudulent.**

The only genuinely low-carbon, scalable tools capable of supporting Beneficial Electrification are **wind, solar, battery storage, and conservation**.

ORA: General Comments/Feedback

Ontario is moving in the wrong direction on resource choices. Despite repeatedly acknowledging extreme demand uncertainty and the growing volatility from climate impacts, the IESO continues to marginalize the very resources that are **cheaper, faster to deploy, scalable, and lowest risk**—namely **wind, solar, distributed generation, and aggressive conservation/DSM**.

Ontario's electricity planning **must be anchored in** climate reality**, not supply-driven industrial aspiration.** It is disturbing to see the Province and the IESO continue to ignore their own **Provincial Climate Change Impact Assessment and Technical Report,** as well as decades of independent, peer-reviewed studies that ORA has continued to cite, indicating that hydropower is a significant source of methane emissions. In addition, the assumption that hydropower is a path to beneficial electricity that "offsets" greenhouse gas emissions is greenwashing at its worst, and contradicted by a large and growing body of peer-reviewed research.

Methane is a greenhouse gas more than 80 times more potent than CO_2 over 20 years. Studies show that reservoir methane emissions routinely match or exceed the lifecycle emissions of natural gas and, in some cases, approach the footprint of coal.

As temperatures rise, organic biomass builds up behind the dam, and drawdowns become more frequent under climate-driven hydrologic volatility, reservoir emissions intensify, making hydropower a worsening methane source over time. These emissions will continue to spew out into the atmosphere unchecked until the dam is removed, at an average lifespan of about 100 years.

Expanding or extending hydro assets to support Beneficial Electrification is therefore neither clean nor climate-positive; it is a **carbon liability that undermines decarbonization**. True climate-aligned electrification requires scaling the resources that actually reduce emissions, like wind, solar, battery storage, conservation, and distributed renewables—not doubling down on methane-emitting hydropower.

These are the only technologies capable of scaling within the timelines required to meet peak pressures and climate obligations. Instead of accelerating these proven, low-cost pathways, Ontario is allowing them to decline in its long-term resource mix, while expanding reliance on the **slowest, most capital-intensive, water-dependent, and climate-vulnerable options, such as hydro**, gas expansion, or speculative industrial loads like hydrogen.

This planning direction is not evidence-based and directly conflicts with what the global power sector has learned: **non-emitting renewables and conservation deliver the fastest, cheapest, and most resilient capacity additions**. Ontario should be dramatically increasing these resources, not phasing them out.

The waterpower industry has been irresponsible for more than a century, and the consequences for Ontario's riverine ecosystems are profound. Ontario has **224 hydroelectric facilities**, yet only **two** have operating fishways — one owned by OPG and one by a private operator, leaving **the remaining 222 facilities without fish passage**. It is a disgrace!

Even more damning, OPG itself operates **66 waterpower facilities and has built only one fishway** across its entire fleet. This is not stewardship; it is systemic neglect that has blocked spawning migrations, fragmented habitats, and driven long-term declines in native fish populations. No credible pathway to sustainable electrification or ecological resilience can rely on an industry that has failed to meet even the most basic environmental obligations for over a century.

Ontario must avoid repeating its historical mistakes of **over-procurement, stranded assets, and environmental harm**. This is especially true for hydropower's intermittent and unreliable nature, which depends on sufficient flow to turn the turbines. During the hot days of summer, when air conditioners are humming, many of these smaller hydropower facilities will be shut down for lack of stream flow to move the turbines. Consequently, these BOONDOGGLE hydro proposals will continue to threaten healthy, free-flowing rivers and migratory fish populations.

Climate Change is an existential threat, and a time when we should be prioritizing the resilience of Ontario's rivers by removing dams, not building more.

Linda Heron, Chair
Ontario Rivers Alliance