Feedback Form

Long-Lead Time RFP – September 16, 2025

Feedback Provided by:

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Email: [redacted]

Date: 30 September 2025

To promote transparency, feedback submitted will be posted on the Long-Lead Time RFP engagement page unless otherwise requested by the sender.

- ☐ **There is confidential information, do not post**
- ☐ **Comfortable to publish to the IESO web page**

I am comfortable publishing to the IESO web page.

Following the September 16th Long-Lead Time RFP 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 LLT engagement webpage.

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 September 30th.**

Foundational Design Elements

Do you have any feedback on the foundational design elements presented during the webinar?

ORA:

The proposed 40-year contracts and eligibility thresholds favour mega-projects, such as hydro and pumped storage, which have the longest timelines, highest costs, and largest ecological footprint per delivered MWh. Hydroelectric is misaligned with Ontario's urgent reliability needs for the 2025–2035 period. In addition, water availability for hydroelectric generation over the next 40 years carries a huge uncertainty and risk for everyone involved, and the IESO has not accounted for climate change in any of its bulk planning.

The IESO clearly acknowledges the shortcomings of hydropower as an "energy-limited and intermittent resource", as noted in its 2025 Northern Ontario Bulk Study: North-South Transmission Reinforcement Plan[1]. As well as its 2015, IESO/Ontario Power Authority North of Dryden Integrated Regional Resource Plan, which determined that building a run-of-river facility is often not cost-effective on smaller rivers because of the high cost of construction and the small amount of power that would be produced as a result of low and unreliable flows, as low as 15 to 30% of Installed Capacity. To further highlight this point, the same analysis determined that *"Northern hydroelectric generation is an energy-limited resource known to have significantly reduced output and availability during drought conditions of the river system supplying these generating units."* [2] At least IESO continues to consider the limited and unreliable nature of hydropower. Unfortunately, IESO fails to consider the 2023 Ontario Provincial Climate Change Risk Assessment and Technical Report in any of its planning reports—more on this below.

Hydroelectric dams typically have a life expectancy of ~100 years, during which their reservoirs will continuously emit CO_2 (carbon) and particularly CH_4 (methane), even in temperate and boreal climates. In fact, Ontario Power Generation is in the process of rehabilitating several of its 66 hydroelectric facilities in Ontario, including the 117-year-old Kakabeka Falls Generating Station. Unfortunately, this means these facilities will continue to emit copious amounts of methane for another ~100 years.

These emissions are especially concerning, given the Intergovernmental Panel on Climate Change (IPCC) 2019 Refinement of the 2006 Guidelines for National Greenhouse Gas Inventories informs that reservoirs, including open water, drawdown zones and degassing/downstream areas of hydroelectric energy production, flood control, water supply, agriculture, recreation, navigation and aquaculture emit GHG emissions of carbon and methane.[3] The IPCC also reports that methane is a potent greenhouse gas with a heat-trapping capacity 28 to 34 times greater than carbon dioxide on a 100-year time scale, and measured over a 20-year time period, that ratio grows to 84 to 86 times.[4]

In addition, Climate change is reducing water availability across Ontario watersheds, undermining long-term hydro viability. In fact, as per the 2023 Ontario Provincial Climate Change Impact Assessment and Technical Report, "*changes in Ontario's climate are expected to continue at unprecedented rates… and it will pose indirect threats to things like water availability and water quality*."[5] For instance, "*by the 2080s, northern Ontario, which experiences on average four extreme heat days annually, is projected to see upwards of 35 such days each year. Whereas "southern, central and eastern Ontario will average 55 to 60 such extreme heat days per year—a fourfold increase from the current annual average of about 16 days.*"[6]

The Report warns that, *"Electrical power generation can be impacted in a variety of ways from climate change, and in part depends on the energy sources. For example, low water flows due to drought conditions can reduce hydroelectricity generation efficiency or outputs. Extreme precipitation events*

can lead to water damage and damage from objects carried by overland flow and flooding damaging equipment and decreasing the useful life of the infrastructure."[2]

"This Level 2 category was evaluated against high and extreme temperatures (e.g. Extreme Hot Days and Cooling Degree Days) and extreme precipitation events (e.g. longer-term accumulated precipitation). Extreme precipitation was found to be the greatest driver of risk for this Level 2 category. Water damage and impacts from overland flows and flooding may cause severe damage to equipment and shorten the useful life of electrical power generation infrastructure." [2]

"Canada's increasing struggle with hydropower is an ill omen representing a wider global problem. Climate change and droughts are threatening hydropower supplies everywhere, and as severe weather events become increasingly common due to climate change, the future of the world's leading renewable energy source is vulnerable. The greatest problem is not just the severity of any drought but the persistence of drought conditions over an extended period of time. The Yale Climate Connection argues that the link between climate change and increasing drought conditions worldwide is demonstrable, and things are getting worse. Global hydropower generation dropped significantly in the first half of 2023, resulting in an overall increase in fossil-fuel power production to make up for the deficit.[7]

In fact, "*Total electricity generated in Canada fell 3.9% year over year to 615.3 million megawatt-hours (MWh) in 2023. Overall, 2023 marked the lowest level of electricity generation since changes were introduced to this data series in 2016, which is notable considering that additional generating capacity comes online every year. Nearly all of the decline in electricity generation in 2023 was weather-related. In 2023, three of Canada's largest hydroelectricity generators, that is, Quebec (-9.3%), British Columbia (-21.5%) and Manitoba (-12.1%), were afflicted by drought or abnormally dry conditions and saw electricity generation drop as a result*."[8]

In 2024, Canada experienced dry weather again, which reduced hydroelectric generation, resulting in the country briefly becoming a net electricity importer during February, March, and April. This was one of the most notable electricity stories of the year. This was the first time that imports outweighed exports since the data series was redesigned in 2016, and it happened as many provinces struggled with low hydroelectricity generation due to dry conditions.[9]

For instance, *"the Canadian province of Quebec has big plans of becoming the 'battery of the U.S. northeast' by feeding power generated from its dams and other hydro plants to millions of people in Vermont, Massachusetts and New York state. But dry conditions that have affected energy output worldwide are forcing one of the world's largest hydropower producers to cut exports. There wasn't enough snow or rain in the regions where we needed it," said Michael Sabia, chief executive of Hydro-Québec, the provincial utility. We can't make it rain, as much as we'd like to. About 70% of the country is suffering from abnormally dry or drought conditions, forcing it to start up old gas-fired power plants".* [10]

The World Meteorology Organization reported that 2024 was the hottest year on record, and "*Every additional fraction of a degree of warming drives more harmful heatwaves, extreme rainfall events, intense droughts, melting of ice sheets, sea ice, and glaciers, heating of the ocean, and rising sea levels."* [11]

In fact, Manitoba Hydro reported a consolidated net loss of $63 million for 2024-25 due to drought, and this compares to a consolidated net loss of $157 million the previous fiscal year.[12]

Hydropower is a major driver of climate change because of its significant GHG emissions, particularly methane, for the full lifecycle of the dam. Climate Change will have devastating effects on both water

quality and quantity; however, it will also significantly impact the feasibility of hydroelectric power generation. When flows decline to the point where dams are no longer viable, the removal or decommissioning of these massive structures is cost-prohibitive, often leaving rivers fragmented and ecosystems impaired for centuries.

By contrast, wind and solar can be built in 1–4 years, at lower cost, with minimal ecological footprint, and without locking Ontario into a century of stranded assets.

ORA Recommendations:

1. Exclude new hydroelectric and large-scale refurbishments from procurement eligibility. Restrict procurement to wind, solar, storage and demand-side resources that are faster, cheaper, and more climate-resilient.
2. Any hydropower contracts should be limited to a term of 10 years because of the high risk that climate change poses to water availability.

Resource Eligibility – Energy and Capacity Streams

Do you have any feedback or general comments to share with the IESO regarding defined eligibility for each stream of the LLT RFP?

ORA:

Reservoirs emit methane via ebullition and diffusive flux—evidence includes boreal and temperate reservoirs (e.g., Swiss hydropower) showing periodic extreme methane emissions; global syntheses corroborate their material GHG footprints that vary with site hydrology and operations. Also, climate-amplified flow volatility (droughts/floods) is reducing firm energy generation predictions from Canadian hydro provinces, undermining any reliability claims made for long-term contracts.

ORA Recommendation: No new hydroelectric or large-scale refurbishments.

Resource Eligibility – Hydro Redevelopments

Do you have any feedback or general comments to share with the IESO ahead of the upcoming repowering webinar regarding the participation of hydro redevelopments?

To help inform eligibility under the LLT RFP, the IESO is looking for project specific details from hydro resources that are looking to redevelop, including:

- existing nameplate and/or contract capacity, location, market participant status, original in-service date, remaining useful life and projected end of life;
- expected time required to redevelop the resource, a list of key milestones/activities, and projected operational lifetime post redevelopment; and
- information regarding whether the redevelopment will result in an increased capacity at the facility beyond what is currently registered with the IESO.

If required, please provide project-specific information via a separate document.

ORA:

Hydro redevelopments are costly, require a large amount of downtime, and are likely to extend the significant damage inflicted on our climate and riverine ecosystems for another century.

ORA Recommendation: No new hydroelectric or large-scale refurbishments for the reasons set out in the rest of this document.

Policy Based Rated Criteria: Prime Agricultural Areas (PAAs)

Do you have any information to share with the IESO to inform decisions related to rated criteria for projects locating in PAAs?

Specifically, the IESO is seeking further information, including but not limited to:

- whether proponents are intending to locate their project in a PAA;
- approximate project footprint (in acres), including distinction of surface level and subsurface components;
- land/soil impacts during construction and operation; and
- portion of the land that will remain available for agricultural use post COD.

ORA:

ORA supports strict disincentives for any siting that degrades PAAs. However, the dominant land and watershed footprints of long-lead hydro occur outside PAAs, yet impose greater cumulative environmental, and especially ecological risk than wind and solar. Rated criteria should not quietly privilege hydro by penalizing only agricultural conversion.

ORA Recommendation: Extend location-sensitive criteria to watershed-critical zones (coldwater refuge, intact river corridors, public drinking water areas and Indigenous food/fish habitat), not just PAAs.

Team Member Experience Requirements - Capacity

Do you have any feedback regarding the information presented during the webinar?

ORA:

Experience in hydro megaprojects should not substitute for Ontario-specific expertise in environmental protection, Indigenous consultation, and climate-resilient planning. Too often, “experience” is leveraged to downplay ecological risks.

ORA Recommendation: Require demonstrated experience in successful environmental remediation, dam decommissioning, or Indigenous-led conservation partnerships—not just project delivery.

Round Trip Efficiency (RTE) – Capacity

Do you have feedback to help inform the minimum RTE requirement and development of the associated rated criteria.

ORA:

Drought conditions across all provinces have severely impacted hydroelectric generation; therefore, this volatility must be taken into consideration when comparing its RTEs with battery storage.

ORA Recommendation: The intermittent and unreliable nature of hydropower in a warming climate must be considered over the long term. No new hydroelectric or large-scale refurbishments for the reasons set out in this document.

Contract Provisions: Long Term Outages

Do you have any feedback regarding the IESO's proposal related to long-term outages?

ORA:

A one-time 6-month outage after year 20 without a non-performance charge is permissive for resources with significant environmental footprints and local community risks.

ORA Recommendations:

1. Condition any long-term outage on proof of ecological safeguards (e.g., ramping, stranding plans, coldwater protection) and community notification. Impose seasonal windows that avoid damaging or risky aquatic periods.
2. Require verified engineer of record risk assessments for reservoirs before outage approvals.

Contract Provisions: Environmental Attributes

Do you have any feedback regarding the information shared during the webinar?

ORA:

Environmental attributes must not be assigned to hydroelectric, as it is one of the leading reasons for the decline of many fish species in Ontario. This is due to the almost total lack of fish passage at all but 2 facilities out of a total of 224 hydroelectric facilities in Ontario, including 66 owned by Ontario Power Generation. Without the provision of safe and suitable passage, fish are unable to move upstream to access critical habitats and spawning beds. During downstream migrations, fish face a number of stressors, such as rapid decompression, blade strike, and collision, which unduly impact morbidity and mortality.

Ontario has an extensive history of hydroelectric development, where the damage inflicted by these dams has led to the extinction or near extinction of many aquatic species, including the Lake Ontario Salmon. Twentieth-century hydro dams also devastated many other species, such as the American Eel and Lake Sturgeon. The multitude of problems with hydropower have not been resolved, and operating

strategies devised to capitalize on peak demand have only exacerbated the potential for negative impacts.

Clean Energy Credits should not be assigned to hydroelectric projects, as it misleads the public on the true emission contributions of hydro reservoirs, which can be substantial. It would also be fraudulent to claim the generation of non-emitting hydroelectric power when there are almost three decades of independent peer-reviewed studies debunking that lie.

Hydro facilities must and will someday be required to report their full-lifecycle GHG emissions, which must be independently measured and publicly reported. In fact, hydropower should be required to report emissions on a daily, monthly, and yearly basis. This would be a refreshing change from the misinformation that proponents, and even the IESO, disseminate to the public, suggesting that hydroelectric facilities are non-emitting.

Referring to hydroelectric power as a non-emitting energy resource is misleading. While it does not burn fossil fuels, the full life cycle, particularly with the creation of a reservoir, has been well studied for its association with GHG emissions, and particularly methane. This misleading information is considered **greenwashing** under the Competition Act and can incur a substantial legal penalty.

New provisions added to the *Competition Act* in June 2024 specifically target greenwashing. When making claims about the environmental benefits of a business or its activities, a company must have "adequate and proper substantiation in accordance with internationally recognized methodology".[13] Claims of non-emitting are not supported by evidence. Fines for greenwashing under the Competition Act can go up to $10 million or 3% of a corporation's worldwide annual gross revenue for a first offence.

ORA Recommendation: Hydropower should not qualify for any environmental attributes, and in fact, should not be considered clean or renewable for all the reasons set out in this document, as well as many others that we have not mentioned in the interest of brevity.

General Comments/Feedback

ORA:

The IESO clearly recognizes the shortcomings of hydropower as an "energy-limited and intermittent resource", as noted in its 2025 Northern Ontario Bulk Study: North-South Transmission Reinforcement Plan[14]. However, IESO still refers to hydro as a "non-emitting" resource in this document, which is irresponsible greenwashing that masks the significant contribution hydropower with reservoirs will make to the acceleration of climate change over the full 100-year life cycle of the dam.

Hydropower is neither "low-carbon", "non-emitting" nor "sustainable" when assessed over the dam's full 100-year life cycle. Reservoirs emit substantial amounts of methane throughout the entire life of the dam, and declining water availability stemming from climate change poses a serious threat to the future viability of these hydroelectric assets and the rivers they block.

Decommissioning costs will leave Ontario and proponents with stranded and unsafe assets when the dams are no longer viable or outlive their useful purpose. It is also irresponsible that there are no requirements for hydro proponents to provide financial assurance by placing sufficient funds up-front to cover future dam decommissioning/removal, and there are very limited funds available in the form of grants for dam removal. This is already a growing disaster for Ontario rivers and those communities living downstream of them.

By contrast:

* Solar and wind are the lowest cost, fastest to deploy, and most scalable.
* Battery storage is rapidly falling in cost, highly efficient, and modular.
* Conservation to reduce demand for electricity must be a major priority.
* Transmission is the best option, and IESO has wisely already begun the process.
* Natural gas should serve only as a transitional reliability backstop, not a long-term build-out.

ORA's core recommendation: No new hydroelectric or large-scale refurbishment projects should be included in Ontario's RFP. Ontario's energy future must be built on new and upgraded transmission, wind, solar, storage, and conservation—not on locking in another century of GHG emissions, ecological destruction, stranded assets and dam owner liabilities.

Linda Heron, Chair
Ontario Rivers Alliance

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[1] *Northern Ontario Bulk Study: North-South Transmission Reinforcement Plan.*
[2] *North of Dryden Integrated Regional Resource Plan – January 27, 2015, by OPA/IESO. P-56 (Table 7) & 124. Online: http://www.noma.on.ca/upload/documents/north-of-dryden-report-2015-01-27.pdf*
[3] *2019 Refinement of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 7, Wetlands, 7.3 Flooded Land. P-6/52.*
[4] *Intergovernmental Panel on Climate Change (IPCC)'s Climate Change 2021: The Physical Science Basis, which is the Contribution of Working Group I to the Sixth Assessment Report.*
[5] *Ontario Provincial Climate Change Impact Assessment | Ontario.Ca." Accessed October 20, 2023. http://www.ontario.ca/page/ontario-provincial-climate-change-impact-assessment*
[6] *Ibid.*
[7] *Global Electricity Mid-Year Insights - 2023 – Global power sector emissions plateaued in the first half of 2023 a wind and solar continue to grow. However, adverse hydro conditions prevented emissions from falling.*
[8] *Hydroelectric generation dries up amid low precipitation and record high temperatures: Electricity year in review, 2023, Statistics Canada. Online: https://www.statcan.gc.ca/o1/en/plus/5776-hydroelectricity-generation-dries-amid-low-precipitation-and-record-high-temperatures*
[9] *Dry weather dampens overall generation: Electricity year in review, 2024. Statistics Canada. Online: https://www.statcan.gc.ca/o1/en/plus/8076-dry-weather-dampens-overall-generation-electricity-year-review-2024*
[10] *Canada Had Designs on Being a Hydro Superpower. Now It Rivers and Lakes Are Drying Up. By Vibal Monga, March 27, 2024, The Wall Street Journal.*
[11] *Forecast for the next 5 years? Record breakingly hot, UN weather agency says. By Thomson Reuters, CBCC, May 28, 2025.*
[12] *Manitoba Hydro lost $63 million last year, by Shannon Dueck, Pembina Valley Online, 27 September 2025. https://pembinavalleyonline.com/articles/manitoba-hydro-lost-63-million-last-year*
[13] *Canadian Competition Act. https://competition-bureau.canada.ca/en/how-we-foster-competition/education-and-outreach/publications/environmental-claims-and-competition-act*
[14] *Northern Ontario Bulk Study: North-South Transmission Reinforcement Plan.*