Stakeholder Feedback and IESO Response

Long Lead-Time Request for Proposals (LLT RFP) – October 31, 2025

Following the September 16 2025, LLT RFP Engagement Webinar, the Independent Electricity System Operator (IESO) invited stakeholders to provide feedback on the following design items: Foundational Design Elements, Resource Eligibility, Policy Based Rated Criteria, Team Member Experience Requirements, Round Trip Efficiency of Capacity Resources, Long Term Outages, Environment Attributes, and other procurement design considerations Non-confidential feedback is posted on the Long Lead-Time RFP Engagement Webpage. Feedback identified as confidential by stakeholders is not posted but reflected as part of the common feedback themes. Please reference the feedback forms for specific feedback as the information below is provided in summary.

Note on Feedback Summary and IESO Response

The IESO appreciates the feedback received from stakeholders and communities. The tables set out below respond to the feedback received and are organized by topic. Capitalized terms used in the IESO responses below not otherwise defined herein, have the meaning given to such terms in the draft LLT(e) RFP, LLT(e) Contract, LLT(c) RFP or LLT(c) Contract (each, as applicable) posted to the Long Lead-Time RFP Webpage.

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market rules, or the subject contract, legislation, regulation, or procurement document, as applicable, govern.

A) Foundational Design Elements

Stakeholders provided mixed feedback on contract term length and procurement targets. Specific feedback is cited below.

Feedback / Common Themes	IESO Response
Some stakeholders suggest that the IESO should consider longer contract term lengths. • The IESO should reconsider term lengths to better align with the expected life of major capital assets (e.g., compressed air and pumped hydro's major mechanical components have an expected life of 60+ years). • The IESO should adopt an open book process with respect to long-term debt for Long Duration Energy Storage (LDES) allowing price adjustments at the mid-point of a 60-year contract term.	The IESO's suite of procurements, which secure resources over various term lengths, has been designed to allow flexibility to adjust as needs change, while also considering remaining project life. Under the LLT RFP, a 40-year contract term, the longest term offered through any of the IESO's competitive procurements, is being proposed for all successful projects across both the capacity and energy streams. At this time, the IESO is not contemplating a longer contract term length. The IESO is not contemplating an open book process which would allow price adjustments during the contract term. Proponents should consider expected costs (including those related to long-term debt) when establishing proposal prices, which will be subject to levels of indexation over the contract term set out in the LLT(e) Contract or LLT(c) Contract.

Feedback / Common Themes	IESO Response
Stakeholders provided mixed feedback on the proposed targets for the LLT RFP. • Some stakeholders continue to suggest a capacity stream target of up to 1000 MW, citing that projects could be developed in the range of 500 MW up to 1000 MW. • One stakeholder is supportive of the initial 1 TWh target for window 1 of the LLT RFP energy stream	The IESO continues to propose an overall target of up to 600-800 MW, on a Maximum Contract Capacity basis, for the Long Lead Time Capacity Services Request for Proposals (LLT(c) RFP), subject to Ministerial direction. The target range has been proposed with the intent of balancing system needs and competition, driven by market insights. A target of 1 TWh, based on Expected Annual Imputed Production, is still being proposed for the Long Lead Time Energy Supply Request for Proposals (LLT(e) RFP). It should be noted that at this time the IESO expects to be directed to run a single window of the LLT procurement. A decision to run additional windows would be informed, in part, by the outcomes of the first window.

B) Resource Eligibility – Energy and Capacity Streams

Stakeholders were supportive of the IESO bifurcating the LLT RFP into energy and capacity streams. Stakeholders provided feedback regarding technologies that should be considered for eligibility and others that should be excluded from the procurement. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
The IESO should expand resource eligibility to broaden participation. • Some stakeholders suggested that the IESO should continue to explore participation of emerging technologies that demonstrate a sufficient level of technology readiness such as compressed gases (other than air), liquid air energy storage, thermal storage, and others.	Per the October 21 stakeholder engagement session, the IESO has proposed the following Eligible LDES Technologies: i) Compressed Air Energy Storage, ii) Pumped Hydroelectric Storage, iii) Liquid Air Energy Storage, iv) Pumped Thermal Energy Storage. Developers that are considering an LLT Capacity Project that uses a technology that is not currently included as an Eligible LDES technology, that they believe should be eligible to participate in the LLT(c) RFP, should provide the IESO with information regarding technology readiness, expected required project development timelines and, project operational lifetime for further consideration.
LLT capacity stream should be scoped to non-lithium and/or non-inverter based LDES irrespective of whether individual projects need five or more years to develop.	The IESO is proposing that the capacity stream of the LLT RFP is open to participation from the following Eligible LDES Technologies, all of which are non-inverter based: i) Compressed Air Energy Storage, ii) Pumped Hydroelectric Storage, iii) Liquid Air Energy Storage, iv) Pumped Thermal Energy Storage. The LLT RFP is being developed with the intent to provide opportunities for resources with longer lead times that cannot participate in the LT2 RFP. As such, the IESO is selecting eligible resource types based on an expected lead time of five or more years; certain technologies that are newer to Ontario (e.g., Class II Eligible LDES Technologies) may be required to demonstrate this to the IESO.

Feedback / Common Themes	IESO Response
New hydro and large-scale hydro refurbishments should not be eligible to participate in the LLT RFP. • One stakeholder suggested that the IESO should focus on procuring shorter lead time resources that are more climate resilient.	Under the IESO's Resource Adequacy Framework (RAF), the IESO is seeking to procure a diverse set of resources to meet system needs. The IESO is developing the LLT RFP to provide opportunities for resources that cannot participate in the LT2 RFP (which is technology agnostic), such as new hydro, due to long development timelines. At this time, the IESO continues to propose that new hydro resources will be eligible to participate in the LLT(e) RFP. The IESO is still considering whether hydro redevelopments will be eligible to participate. Final decisions related to eligible technologies will be reflected in the Directive from the Minister of Energy and Mines.
Pumped Hydro Storage facilities may be better suited to participate in the energy stream. • One stakeholder suggested that including pumped hydro storage resources in the capacity stream may result in reduced opportunities for other technologies.	The IESO has bifurcated the LLT RFP into distinct and separate procurement processes for capacity and energy streams with resources selected as eligible to participate in each based on their capabilities. As Pumped Hydro Storage (PHS) only stores and cannot produce incremental energy, projects of this nature are best suited to, and will only be eligible to, participate in the capacity stream. As mentioned previously, targets for the LLT RFP capacity stream in the range of 600-800 MW, on a Maximum Contract Capacity basis, is being proposed with the intent to balance system needs and competition.

Feedback / Common Themes	IESO Response
The IESO should provide opportunities beyond the grid innovation fund for pilot and emerging technologies. • One stakeholder indicated developers of emerging LDES systems require a clear, stable, long-term contracting opportunity in order to be successfully deployed.	The IESO is a contributor to a recently launched research initiative led by the Centre for Energy Advancement through Technological Innovation (CEATI) that will explore the overall viability of different LDES technologies on a regional basis across Canada. While there are no specific opportunities currently contemplated for pilot or emerging technologies, results of this research may inform future opportunities for pilot and/or emerging LDES technologies.

C) Resource Eligibility – Hydro Redevelopments

Stakeholders provided feedback on the challenges and timelines related to hydro redevelopment. A stakeholder provided feedback on the definitions related to hydro redevelopment that the IESO should consider. Specific feedback is provided below.

Feedback / Common Themes	IESO Response

Existing hydro facilities seeking to expand or upgrade should be permitted to participate in the LLT RFP.
• Two stakeholders indicated that the provision from the May 8, 2024 Ministerial Letter permitting existing hydro facilities who want to expand or upgrade to participate in the Long Term 2 Request For Proposals (LT2 RFP) should be extended to the LLT RFP.
• The IESO received the following, more specific, feedback:
  ○ Replacement equipment is no longer available for hydro facilities originally constructed in the early 1900's. As the equipment approaches end-of-life, a major overhaul/redevelopment requires a contract of sufficient length to make it economical.
  ○ An example of a hydro redevelopment that took approximately 6-years to complete.
  ○ If required by the IESO, existing facilities may be challenged to increase capacity due to insufficient capacity on the circuit currently used, even in situations where there is sufficient water flow available to support the increase.
  ○ The IESO should adopt the definitions of: "new station", "redeveloped station", "upgrade station" from O.Reg 124/02 for the LLT RFP.
	The IESO appreciates this feedback as it continues to explore participation opportunities for redevelopments, upgrades and expansions for hydroelectric facilities across several procurements under its resource adequacy framework, including the long-term and medium-term procurements and other programs such as the Northern Hydro Program (NHP).
	
	The IESO will provide more details on a proposed approach in a future engagement session.

C) Policy Based Rated Criteria: Prime Agricultural Areas

Stakeholders provided mixed feedback on locational criteria and considerations. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
LDES projects should be exempt from locational criteria or restrictions. • Stakeholders indicated that most LDES projects are based on unique geophysical attributes, in limited supply across Ontario, and should be exempt from locational criteria or restrictions. • Stakeholders indicated that providing rated criteria points to projects that avoid prime agricultural areas effectively amounts to a grading system that could penalize optimal LLT RFP LDES siting from a long-term system benefits perspective and will increase costs and reduce overall benefits of the LLT RFP results to the Ontario grid. • One stakeholder suggested Ontario farmland is substantially more productive now and siting energy projects on agricultural lands is less impactful. • Top-size of LDES facilities are extremely small in relation to their capacity and energy opportunities.	The IESO appreciates this feedback and will share this information with the Ministry of Energy and Mines, the Ministry of Natural Resources and the Ontario Ministry of Agriculture, Food, and Agri-business. The inclusion of rated criteria and restrictions related to locational considerations will be reflective of policy decisions made by the Minister of Energy and Mines that are issued to the IESO in the form of a Directive specific to the LLT(e) RFP and LLT(c) RFP.

Feedback / Common Themes	IESO Response
The IESO should expand location-sensitive criteria. • One stakeholder suggested that rated criteria points should not only apply to agricultural lands. The IESO should extend location-sensitive criteria to watershed-critical zones.	The inclusion of rated criteria and restrictions related to locational considerations will be reflective of policy decisions made by the Minister of Energy and Mines that are issued to the IESO in the form of a Directive specific to the LLT(e) RFP and LLT(c) RFP.

D) Team Member Experience Requirements – Capacity

Stakeholders were supportive of expanding the definition of Qualifying Projects. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
The definition of Qualifying Project should be expanded to include the jurisdictions of Europe and Australia.	In the October 21 stakeholder engagement session IESO proposed expanding the definition of Qualifying Project under the capacity stream to include projects that have reached commercial operation in the United Kingdom, Italy, France, Australia and Japan. This is being proposed to recognize that projects of commercial scale have been successfully deployed in these jurisdictions and acknowledge that certain Eligible LDES Technologies are new to Ontario and North America.

Feedback / Common Themes	IESO Response
Proponents should demonstrate team member experience in three, not all as required under the LT2 RFP, of the following categories: Planning, Operating, Developing, Financing, and Constructing.	Team Member Experience requirements are intended to demonstrate that the Proponent has Designated Team Members experienced with project development, from Planning to Operation. As such, under the LLT RFP, Proponents will be required to demonstrate experience in all five categories. These requirements exist to provide confidence to the IESO that a contracted project will be able to reach commercial operation and operate reliably for the term of the contract. The IESO has proposed refining this Mandatory Requirement for the LLT(c) RFP such that a Proponent must demonstrate experience in Planning and Developing a project of the same technology type that is being proposed (Same Technology Qualifying Project) and demonstrate experience in operating, financing and constructing a Qualifying Project, which can be of any technology type. All projects used for the purposes of demonstrating Team Member Experience must have reached commercial operation.

Feedback / Common Themes	IESO Response
Proponents should be required to demonstrate experience with permitting, decommissioning, and Indigenous partnerships.	The IESO appreciates this feedback. Through the Mandatory Requirement for Team Member Experience, specifically the requirement to have experience **Developing** a Same Technology Qualifying Project a Proponent is requirement to *demonstrate experience in engaging in community and municipal consultations, obtaining site access, obtaining regulatory and environmental approvals and other permits necessary for construction of an Electricity resource, and where the Crown had a duty to consult obligation in the jurisdiction where the prior experience was obtained, undertaking the procedural aspects of consultation with Indigenous communities that are required to support the Crown's duty to consult obligations.*

E) Round Trip Efficiency – Capacity

Stakeholders provided mixed feedback on the IESO's proposals/the development of requirements related to RTE. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
The IESO should establish requirements related to RTE. • One stakeholder suggested that the requirements should be specifically related to best-in-class standards for technologies being considered. Constraining eligibility based on RTE standards applicable to unrelated technologies would obviate the purpose of pursuing what will be important assets and benefits for the ratepayers. • Two stakeholders suggested lowering the minimum RTE assumption, which under LT2 RFP is 80%, to 50% under the LLT RFP.	As discussed in the October 21 stakeholder engagement session, the IESO is proposing to not include Mandatory Requirements or rated criteria related to round trip efficiency (RTE) due to the challenges associated with evaluating this at the Proposal submission stage. The IESO has proposed reducing the Reimbursement Reference Efficiency (RRE) included in the calculation of the Regulatory Charge Credit in Exhibit S of the LLT(c) Contract, which under the LT2(c-1) Contract is tied to a 75% RTE, to 60% to reflect the lower expected RTEs associated with Eligible LDES Technologies, meaning that Facilities with RTEs below this threshold will not realize full reimbursement of their applicable regulatory charging costs via the Regulatory Charge Credit.
The IESO should not include RTE criteria. • Net energy market revenues will be incorporated into the revenue requirement calculation. Holding other factors constant, Proponents with higher energy arbitrage revenues will have the competitive advantage. RTEs will be fully incorporated into proponent bid prices. • Adding weighted criteria points would lead to double counting and unfair penalization of lower RTE resources.	Consistent with the LT2(c-1) Contract, the IESO has not included Mandatory Requirements or rated criteria related to round trip efficiency (RTE) due to the challenges associated with evaluating this at the Proposal submission stage.

F) Contract Provisions – Long Term Outages

Stakeholders are supportive of a long-term outage provision and have provided some technology specific considerations. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
The timing of the long-term outage should be at the discretion of the Supplier to ensure that resources are operated following best generator practices. • One stakeholder indicated that hydro facilities are unique in that they serve two main functions; electricity generation and water management. The Supplier may be required to take a long-term outage to complete repairs associated with water control. • One stakeholder indicated, that from experience, hydro outages typically may last up to 24 months but could potentially last as long as 36 months depending on the scope and complexity of work. • One stakeholder indicated that for pumped hydro facilities large mechanical assets (turbines, gates, penstocks) could require replacement or major maintenance in 30 to 40 years, and some electric components could need replacement in 25 years. Compressed air/thermal systems, pressure vessels and thermal storage media often demand inspections on a 5-7 year cycle, with shorter downtime if modular systems are deployed. Flow batteries, routine stack and pumping services can be done on shorter intervals (annual 3-year cycles), with electrolyte and membrane upgrades typically after 7-10 years.	Consistent with the LT2(c-1) Contract, the draft LLT(c) Contract allows Suppliers to take shorter term Planned Outages on an annual basis, subject to scheduling requirements under the IESO Market Rules. Under the LLT(c) Contract and the LLT(e) Contract, the IESO is proposing that Suppliers can take one optional Mid-Term Extended Outage after the 20th anniversary of reaching Commercial Operation for a maximum period of 12-months, and subject to a 12-month advance notice. The purpose of the Mid-Term Extended Outage is to allow the Supplier to complete small-scale work that may be required to allow the facility to continue to operate and is not intended to be a period over which major refurbishment work is completed. If stakeholders believe that Mid-Term Extended Outages are required beyond the proposed 12-month duration, the IESO is seeking further information to better understand the nature, timeline, and frequency of such required outages.

Feedback / Common Themes	IESO Response
The IESO should clarify what is means by Long Term Outage • One stakeholder is asking if long term outage refers only to planned outages.	As stated in the October 21 stakeholder engagement session, the IESO has used the term Mid-Term Extended Outage to refer to a longer-term outage that Suppliers can take after the 20th anniversary of reaching Commercial Operation (see section 15.3(d) of the draft contract for further details). For clarity, the Mid-Term Extended Outage will be available in addition to shorter term Planned Outages throughout the term. However, during a Mid-Term Extended Outage, the contract payments will be suspended as will performance obligations of the Supplier.
The outages should be coordinated with seasonal demand patterns.	Outages are subject to System Operator approval under the IESO Market Rules which will consider needs that exist at the time of the proposed outage.
Non-payment during the long-term outage period may result in financial/economic hardship for the Market Participant. • One stakeholder recommends the IESO consider a levelized payment structure (e.g., prorating payments over the 40-year contract term, and providing continued payment over the long-term outage period to ensure steady revenue stream).	The IESO is not contemplating a levelized payment structure that includes consideration of longer-term outages. Proponents are encouraged to factor in loss of revenue over the Mid-Term Extended Outage when establishing Proposal prices.

G) Contract Provisions – Environmental Attributes

Stakeholders were not supportive of the IESO's proposal regarding the sharing of benefits resulting from the sale of Environmental Attributes. Specific feedback is provided below.

Feedback / Common Themes	IESO Response
Suppliers should own Environmental Attributes for the full term of the contract. • Stakeholders recommend that developers retain Environmental Attributes for full project lifecycle, consistent with the LT2 contract.	In the draft LLT(c) Contract Sec. 2.10 the IESO has proposed sharing of benefits from the Supplier's proceeds from monetization of Environmental Attributes during the second half of the contract term. As presented in the October 21 stakeholder engagement session, at this time the IESO is under the assumption that prospective Proponents are not attributing material value to Environmental Attributes in Proposal prices. Additionally given that Suppliers will be awarded 40-year contract terms (extending up to 2075), there is the potential that the value of Environmental Attributes could change in the future, and should there be a future value, the IESO believes that both ratepayers and Suppliers should share in the benefits, which would be based on actual proceeds. The IESO remains open to stakeholder feedback on alternative approaches to managing the uncertainty associated with the value of Environmental Attributes. Feedback is also requested as to the value that may be attributed to Environmental Attributes between years 20 – 40 and how those values would be reflected in proposal submissions, if at all.

H) General Feedback

Feedback / Common Themes	IESO Response
Must Offer Obligations on a daily basis can become impractical. • One stakeholder suggested that for projects designed with "reference" energy storage for any length of time between 4 and 16 hours, at the longer end of this range, contract requirements relating to Must Offer on a daily basis become impractical.	The IESO has currently proposed that LLT Capacity Projects be able to deliver their Contract Capacity for a minimum of 8 consecutive hours and is exploring the use of rated criteria to incentivize longer durations of up to 12 hours. As presented in the September 16 stakeholder engagement session, under the current IESO Market Rules, the max daily energy limit (max DEL) parameter currently applicable to storage resources prevents resources from being scheduled beyond estimated capability based on state-of-charge. Further enhancements are being considered under the Enabling Resources Program (ERP) that will enhance the IESO's visibility of resource capabilities at the time of scheduling/dispatch.
A mechanism to level the playing field with respect to the comparison of proposals from suppliers with differing access to ITCs.	Clean Technology Investment Tax Credits (CTITCs) are outside of the IESO's purview and are determined by federal tax policy. The IESO's role is to design competitive procurement processes that focus on reliability, cost-effectiveness, and system needs. As such, the IESO is not considering modifications to adjust for differing access to CTITCs.

Feedback / Common Themes	IESO Response
Price incentive and rated criteria points for projects led by or in partnership with Indigenous Communities.	Incentives related to Indigenous Community participation included in IESO procurements is informed by government policy direction. The incentives included in the LT2 RFP were developed working with the Ministry of Energy and Mines and a similar approach is expected under the LLT RFP (i.e., rated criteria points). The IESO expects to receive formal policy direction on this and other matters in advance of launching the LLT RFP.
Mechanism for new, refurbished, redeveloped or upgrades hydro projects to de-risk pre-development costs. • Mechanisms that have been used in the past (e.g., loan guarantees, price adders, taxation resource revenue sharing, infrastructure funds) should be evaluated and assessed.	The IESO is not contemplating a mechanism to de-risk pre-development costs as these costs are best managed by Suppliers and can be included as part of the Proposal price.
100% indexing to CPI from the contract date to COD/MCOD and then 60% indexing from COD until contract end date. • One stakeholder suggests industry specific inflationary indices should be explored (e.g., Handy-Whitmann).	The IESO appreciates this feedback. Contract escalation under the LLT Contract is under ongoing consideration. The IESO expects to share a proposal related to this in a future engagement session.

Feedback / Common Themes	IESO Response
IESO should consider in the deliverability test whether the storage charging rate at 50% of the rated capacity is appropriate. • One stakeholder indicated that IESO's current deliverability test methodology uses 50% of the rated capacity of additional storage to assess whether it is deliverable. The LLT Contract includes Must Offer obligations whereby resources must offer their full contract capacity into DAM during Qualifying Hours. With >8-hour charging systems, operators may need to charge at 100% full charging rate to be ready to offer full contract capacity into the DAM.	The IESO appreciates this feedback. The IESO will consider the appropriate charging rate in order achieve the desired outcome from LLT Capacity Projects in the design of its deliverability test.
Under the E-PPA structure, Suppliers could face negative payments for low production periods that are outside of their control. • One stakeholder highlighted the negative payment risk in instances where there is reduced water available, resulting in low production, and market prices are high.	The IESO has received similar feedback under Northern Hydro Program (NHP) and is considering what changes may be necessary. Given that under the LLT RFP, Proponents can control price and imputed production factors, different provisions may apply between the LLT and NHP, where these values are not controlled by proponents to the same degree.

Feedback / Common Themes	IESO Response
Some stakeholders suggested the IESO make changes to the E-PPA provisions, consistent with those that are being considered under Northern Hydro Program (NHP). • One stakeholder suggested that the IESO should apply a 4-year rolling average for non-performance charges consistent with the E-PPA design for NHP.	At this time the IESO is not contemplating a change to the period over which non-performance is evaluated. As indicated in the LLT RFP August 14, 2025 IESO Response to Stakeholder Feedback, the IESO is currently proposing to align non-performance charges under the LLT(e) RFP with those under the LT2(e-1) RFP, which calculate non-performance charges using a 3-year rolling average. Such a period allows for effective accounting of anomalies that may impact production, such as irregular weather patterns and operability on start-up challenges. The Northern Hydro Program (NHP) is still under development; upon program design completion the IESO will consider which design items may be appropriate for the LLT(e) RFP and Contract. It should be noted that NHP is intended to re-contract existing resources whereas the LLT RFP is being designed to acquire New Build facilities; as such, different provisions may apply.