



JUNE 5, 2025

Long Lead-Time Request for Proposals

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Purpose

The purpose of this session is to share stakeholder feedback received to date and continue discussing design considerations related to the development of a Long Lead-Time Request for Proposals (LLT RFP).

Agenda

Today's engagement will cover the following topics:

1. Overview of the LT2 Contracts
2. Response to Stakeholder Feedback
3. LLT RFP Design Considerations
4. Next Steps



Overview of the Long-Term 2 Contracts

Defined Terms & Document Updates

- Capitalized terms used in this section of the presentation reflect defined terms under the draft LT2(e-1) and LT2(c-1) RFPs and Contracts.
- This section provides an overview of certain sections of the LT2 Contracts and is for descriptive purposes only (for full details, please see procurement documents available on the [LT2 RFP webpage](#)); to the extent that there is any inconsistency between the descriptions in this presentation and the contracts, the contracts will prevail.
- The overviews of the LT2 Contracts presented in this presentation reflect the draft versions published on May 15, 2025, further updates may be made prior to finalization of procurement documents.
- The items presented on the next slides reflect items that are of relevance to long lead-time resources, additional updates will be made to the LLT RFP form of contract to reflect stakeholder feedback, government policy and other considerations.

Summary: LT2 Energy Contract*



Eligible Resource Types: The LT2 energy contract is intended to acquire annual energy supply to meet system energy needs from New Build Electricity generating facilities.



Settlement: The LT2(e-1) is an Enhanced Power Purchase Agreement (E-PPA), structured as a contract for differences, with monthly settlement based on the difference between required and deemed market revenues.



Contract Term: Successful projects will be offered contracts for a 20-year term.



Performance Obligations: Suppliers are required to offer Electricity output from their Facility into the energy market in accordance with the expected production factor indicated as part of proposal submission.



Commercial Operation: Facilities are expected to be in service by May 1, 2030; incentives are offered for resources that can come online earlier to help meet energy needs arising in 2029.

LT2(e-1) Contract – Key Provisions (1)

Monthly Payment (Exhibit J)

- The energy contract is structured as a financial guarantee of the Supplier's calculated monthly revenue requirement.
 - **Monthly Revenue Requirement** = Indexed Fixed Price (\$/MWh) * Annual Average Imputed Production Factor * Contract Capacity * # of hours in the Settlement Month
- The Monthly Payment is calculated by subtracting the Facility's imputed market revenues (based on what the Facility is deemed to have earned in the IESO's wholesale energy market) and any Non-Performance Charges from the Facility's monthly revenue requirement.
 - **Monthly Payment** = Monthly Revenue Requirement – Imputed Market Revenues – Non-Performance Charges

LT2(e-1) Contract - Key Provisions (2)

Performance Obligations (Article 3)

- Throughout the Term, the Supplier must offer Electricity output from the Facility into the *IESO administered markets* from the Facility's Contract Capacity.

Non-Performance Charges (Exhibit F)

- Starting after the end of the third Contract Year, if the Facility achieves an Actual Performance Factor less than 80% of the Facility's Annual Average Imputed Production Factor, Non-Performance Charges will apply.
- The Non-Performance Charge is equal to the average Indexed Fixed Price for the most recent three (3) completed Contract Years, multiplied by the portion of the Performance Factor Shortfall for the year that is in excess of twenty percent (20%).

Summary: LT2 Capacity Contract*



Eligible Resource Types: The LT2 capacity contract is intended to acquire capacity services to meet system reliability needs from New Build resources.



Settlement: the LT2(c-1) Contract will compensate Suppliers for the availability of the capacity of their Facility during the Commitment Period.



Contract Term: Successful projects will be offered contracts for a 20-year term.



Performance Obligations: Suppliers are required to offer Contract Capacity from their Facility into the IESO-administered markets during Qualifying Hours on Business Days.



Commercial Operation: Facilities are expected to be in service by May 1, 2030; incentives are offered for Non-Electricity Storage Facilities that can come online earlier to help meet needs arising in 2029.

LT2(c-1) Contract Overview (1)

Monthly Payment (Exhibit J)

- The capacity contract will pay Suppliers a fixed monthly capacity payment.
 - **Monthly Capacity Payment** = Indexed Fixed Capacity Payment (\$/MW-Business Day) * # of Business Days* Monthly Contract Capacity; any non-performance charges would be subtracted from this amount.
- The Indexed Fixed Capacity Payment reflects the Fixed Capacity Payment (bid in as part of proposal submission) and any adjustment for inflation or early COD.
- For example: There are 21 Business Days in June 2025, a 100 MW facility with an Indexed Fixed Capacity Payment of \$200/MW-Business Day could be paid up to \$420,000 (\$200/MW Business Day*21 days*100 MW), provided that the facility was not on outage and operated during all applicable Qualifying Hours.

LT2(c-1) Contract Overview (2)

Performance Obligations (Article 3)

- Suppliers are required to offer Electricity output from the Facility into the Day-Ahead Market during Qualifying Hours (defined as the continuous 16-hour period between 7:00am-11:00pm on Business Days) such that that Monthly Average Offered Quantity is equal to or greater than the Adjusted Monthly Contract Capacity.
- For storage facilities, state of charge limitations will be considered.

Non-Performance Charges (Exhibit F)

- If at the end of a Settlement Month a Facility's Monthly Average Offered Quantity is less than the Adjusted Monthly Contract Capacity, non-performance charges will apply.
- The Availability Non-Performance Charge is equal to the Monthly Capacity Payment multiplied by the applicable percentage shortfall below the Adjusted Monthly Contract Capacity and further multiplied by a monthly non-performance factor.

Other Relevant Contractual Terms (1)

The following terms are applicable to both energy and capacity forms of contract:

Commercial Operation (Article 2.3)

- If Commercial Operation is not achieved by the Milestone Date for Commercial Operation (MCOD), the Supplier shall pay liquidated damages at a rate of \$150/MW-Business Day.
- The MCOD for long lead-time resources is TBD.
- Commercial Operation shall occur no later than the Longstop Date (18 months post MCOD).

Credit and Security Requirements (Article 6)

- Suppliers are required to post and maintain Completion and Performance Security prior to Commercial Operation and throughout the contract term.
- The IESO is proposing to modify the Completion and Performance Security requirements for resources participating in the LLT RFP.

Other Relevant Contractual Terms (2)

The following terms are applicable to both energy and capacity forms of contract:

Indigenous Community Participation (Article 16.7)

- Where a Supplier was awarded Rated Criteria Points, the Proponent Indigenous Participation levels must be maintained until 5 years post COD.
- Once prior to the fifth anniversary of the COD, an individual Indigenous Community that holds more than 10% of the Economic Interest of the Supplier may request a reduction to the Indigenous Participation Level (IPL), no lower than the Minimum Reduced IPL.

Projects on Prime Agricultural Areas (PAAs) (Article 2.12/2.13)

- Where a project is located in a PAA, the Supplier must confirm that the AIA Component Two and Three Requirement has been met to the satisfaction of the Local Municipality no later than 18 months after the Contract Date.



Response to Stakeholder Feedback

Resource Eligibility: Hydro Resources

What we've heard from stakeholders

- Redevelopments and expansions/upgrades should be eligible under the LLT RFP.

IESO Response to Feedback

- The IESO is open to considering expanding eligibility under the LLT RFP to include hydro redevelopments, however more project specific information is required to inform decision-making.
- While expansions and upgrades are currently not being considered under LLT RFP, the IESO is considering expanding eligibility for upgrades and/or expansions in other IESO procurements (e.g.MT3 RFP).

Resource Eligibility: LDES Resources (1)

What we've heard from stakeholders

- The definition of commercially-proven technologies should be expanded to include successful pilot projects > 300kW and located anywhere in the world.
- The LLT RFP should allow for the participation of more novel/emerging resource types.

IESO Response to Feedback

- The minimum project size of 1 MW is aligned with the requirements of the IESO markets.
- The IESO is still evaluating eligible LDES technologies for the LLT RFP, however given the need to meet future reliability needs, the focus will be on proven technologies. Stakeholders are encouraged to submit recommendations with supporting documentation demonstrating: (a) why the suggested technology requires a long lead-time for development, and (b) that it can operate reliably over the term of the LLT contract.

Resource Eligibility: LDES Resources (2)

What we've heard from stakeholders

- Eligible LDES technologies should be those with longer development timelines (e.g., 6 years or more). Technologies with development timelines similar to those of lithium-ion batteries should be excluded from participating in the procurement.

IESO Response to Feedback

- The IESO is proposing that the LLT RFP is open to resources with development timelines of 5-8 years; for LDES technologies this is reflected in the list of eligible technology types.
- The LLT RFP is intended to competitively secure resources that are not able to participate in the LT2 RFP due to longer lead times. Resources with development timelines less than 5 years are encouraged to participate in other IESO procurements, such as the LT2 RFP.

Term Length & Commercial Operation (1)

What we've heard from stakeholders

- The IESO should allow flexible term lengths, less than 40 years (e.g., 15-20 years).
- Contract terms of greater than 40 years should be considered.

IESO Response to Feedback

- The IESO is proposing to award 40-year contracts to all successful projects under the LLT RFP; this allows for the consistent evaluation across a variety of technology types.
- A 40-year term is being considered for the LLT RFP to provide alignment with the required capital costs and service life of assets. This term length is consistent with what the IESO has offered to other long lead-time assets in the past.
- Facilities with lifetimes of 15-20 years are likely better suited to participate in the LT2 RFP.

Term Length & Commercial Operation (2)

What we've heard from stakeholders

- Agreement with the proposal of a MCOD of 8 years post contract award and request that early operation incentives should be offered beginning in year 5.

IESO Response to Feedback

- Early Operation Incentives are not being considered for the LLT RFP as:
 - System needs arising before LLT resources reach in service will be met with other IESO procurements; and
 - This would provide an advantage to long lead-time resources than can be developed on shorter time frames, which is not the intent of the procurement.

Storage Duration & Rated Criteria

What we've heard from stakeholders

- The minimum duration for storage resources should be at least 10 hours, this is aligned with the expected duration of non lithium-ion based technologies.
- Rated Criteria should be available for longer duration storage resources (e.g., multi-day).

IESO Response to Feedback

- The IESO intends to maintain the minimum duration requirement of 8 hours, this is aligned with project proposals/technology types that were received through the RFI.
- The IESO expects LDES resources that participate in the LLT RFP to be in the 8-12 hour duration range, which can realize the most reliability benefits at this time. Further study is required to evaluate the benefits of longer durations to ensure strategic alignment of storage characteristics with specific system needs.

Must-Offer Obligations

What we've heard from stakeholders

- Must-Offer Obligations, including the number of Qualifying Hours or the State-of-Charge Limited provisions, should be modified to better reflect the lower round-trip efficiencies associated with certain LDES technology types.

IESO Response to Feedback

- The IESO understands that some LDES technologies have limitations relative to other energy storage technologies. The IESO will review the contractual obligations (e.g., Must-Offer Obligations and State-of-Charge Limited provisions) in conjunction with upcoming market enhancements under the Enabling Resources Program to evaluate whether changes are required to better reflect the future participation of LDES technology types.

De-Risking Predevelopment Costs

What we've heard from stakeholders

- Include a mechanism to de-risk predevelopment costs, such as those for regulatory processes and provision of capacity for Indigenous communities to participate as project Proponents or equity partners.

IESO Response to Feedback

- The IESO is not contemplating a mechanism to de-risk pre-development costs, these are best managed by Suppliers and can be included as part of the project's proposal price.
- The IESO provides funding to support equitable access to project partnerships and development for Indigenous communities embarking in energy projects through the IESO's [Indigenous Energy Support Program](#) (IESP). Interested Indigenous communities are encouraged to contact the IESP team at iesp@ieso.ca for further information.

Contract Design – Non-Performance Charges

What we've heard from stakeholders

- For energy producing resources, non-performance charges should be determined using a 5-year rolling average.

IESO Response to Feedback

- To provide alignment with the LT2 RFP, the IESO is proposing to determine non-performance charges using a 3-year rolling average as such a period allows for effective accounting of anomalies that may impact production, such as irregular weather patterns.

Monthly Payment for Run-of-the River Facilities

What we've heard from stakeholders

- For run-of-the-river hydro facilities, the monthly Imputed Production Price should be the lesser of the generation-weighted average price and the simple-average DA-LMP.

IESO Response to Feedback

- The IESO is evaluating its approach to determining the monthly Imputed Production Price for run-of-the-river hydro facilities and will provide an update as part of a future engagement session.

Negative Monthly Payment Amount

What we've heard from stakeholders

- Where deemed energy market revenues exceed contracted revenue requirements, resulting in a negative monthly payment amount (i.e., a payment is required from the Supplier to the Buyer) claw backs should occur on an annual basis, rather than monthly.

IESO Response to Feedback

- The IESO is not considering a change to the administration of the monthly payment amounts; contract settlement occurs on a monthly basis and the Supplier requirement to pay the Buyer in any month that the monthly payment amount is negative is consistent with other IESO contracts.



LLT RFP Design Considerations

Overview of Design Considerations

- Indicative Procurement Targets
- Eligible LDES Technologies
- Proposal & Completion and Performance Security
- Interdependent Hydro Facilities
- Deliverability
- Long-Term Outages
- Contract Price Escalation
- Post-Proposal Applicable Tariffs

Indicative Procurement Targets

- The IESO will look to establish procurement targets for the LLT RFP with the intention of balancing system needs and competition, driven by market insights.
- At this time, the IESO anticipates procurement targets in the range of:
 - **Approximately 1 TWh** for the energy stream
 - **Approximately 600 MW** for the capacity stream
- In advance of procurement launch, targets are subject to change based on updates to the demand forecast, results of other procurements, and/or formal government direction.

Eligible LDES Technologies

- The IESO is proposing that the following **commercially-proven, long lead-time technologies** be eligible to participate in the LLT RFP:
 - Compressed Air Energy Storage
 - Pumped Hydro Storage
- The IESO is considering allowing participation of the following **late-stage emerging technologies**, however further information is required to determine the level of technology readiness and understand development timelines:
 - Liquid Air Energy Storage
 - Pumped Thermal Energy Storage
- To ensure resources are capable of meeting reliability needs, additional requirements are likely to apply to eligible late-stage emerging technologies (e.g., proof of lead time, details of similar projects and their current status, project team experience specific to the technology type).

Proposal & Completion and Performance Security

To mitigate stakeholder concerns related to the amount of security required at the time of proposal submission, the IESO is proposing the following changes to the security requirements and amounts included in the LT2 RFPs and Contracts:

- Proponents will be required to post Proposal Security in the amount of **\$20,000/MW** at the time of proposal submission.
 - A **minimum amount of \$350,000** and a **maximum of \$15 million** will apply.
- At a defined milestone during the pre-COD period (e.g., 24 months post Contract Date) the security amount will increase to \$35,000/MW (aligned with the amount required under the LT2 Contracts).
- Once the facility reaches Commercial Operation the required security amount will be reduced to = \$20,000/MW or the applicable minimum/maximum.

Interdependent Hydro Facilities (Energy Only)

- The IESO has received feedback requesting consideration for allowing multiple hydro facilities, with a single connection point, to be evaluated simultaneously under the LLT RFP (e.g., as a single proposed project, via linked proposals) to improve project economics.
- The IESO is open to considering this, but is seeking more specific project details to better understand the request and inform how this may be facilitated:
 - List of individual facilities, including the capacity of each (in MW), that are looking to be considered under a single proposal; and
 - Proposed project location/related river systems.
- The IESO notes that linking proposals would entail risk to the proponent given that a proposal could be rejected during review, and during deliverability testing.

Deliverability

- The IESO acknowledges the need for stakeholders to have up to date deliverability information to inform project siting decisions. The IESO will release deliverability guidance for the LLT RFP following the issuance of contracts under the LT2 RFP (window 1).
- Stakeholders are also encouraged to continue participating in Bulk Planning engagements to share project information/details as early as possible so these can be considered in assessments for future network enhancements, where appropriate.
- To further support stakeholders, the IESO is considering offering a project specific consultation (or assessment) as part of the LLT RFP process, prior to proposal submission.
 - This may include evaluation of the project and identification of possible network enhancements that could allow projects to connect.
- The IESO is seeking stakeholder feedback on this approach to understand what information proponents require, and when this is needed, prior to submitting a proposal.

Long-Term Outages (1)

- In response to stakeholder feedback, the IESO is considering allowing Suppliers to take one long-term outage for major maintenance activities during the contract term.
- Suppliers will be allowed to take the outage around the middle of the contract term and will be required to indicate the approximate outage year as part of proposal submission, which will then be reflected in the contract.
- Consistent with Planned Outage provisions under other IESO contracts:
 - The Supplier will require approval from the IESO prior to taking the outage
 - A long-term outage may impact the Monthly Payment
 - No term extensions will be provided to account for the outage period
 - The outage will be excluded for the purposes of calculating availability

Long-Term Outages (2)

- The IESO is looking for feedback to understand/determine:
 - The nature of the work required as part of the long-term outage,
 - The maximum duration of the outage (e.g., 6 months), and
 - When the outage is expected to occur over the course of the contract term (e.g., year 20).

Contract Price Escalation

- The IESO recently proposed modifications to the contract price escalation under the LT2 Contracts, to address the heightened risk of tariffs that currently exists.
 - From the Contract Date until the earlier of the COD or MCOD, 100% of the contract price will be escalated based on year-over-year changes to CPI.
 - From the COD until the Contract End Date, 20% of the contract price will be escalated based on year-over-year changes to CPI.
- Under the Long Lead-Time RFI, stakeholders with potential long lead-time projects flagged inflation of costs during the pre-commercial operation period as a concern.
 - The IESO is still determining the contract price escalation that will be applied during the contract term for long lead-time projects, which may be different than the escalation mechanisms that apply under the LT2 RFP.

Post-Proposal Applicable Tariffs

- The IESO recognizes the uncertainty and risk posed by evolving global trade conditions and new US/Canadian tariffs.
- To help mitigate these risks for proposed projects under the LT2 RFP, the IESO has introduced an adjustment for **Post-Proposal Applicable Tariffs**, enabling Suppliers to propose a revised Fixed Price/Fixed Capacity Payment.
- **Post-Proposal Applicable Tariffs** refer to import tariffs imposed by a Governmental Authority *after* the Proposal Submission Deadline that apply to the Facility upon import into Canada.
- Inclusion of this mechanism under the LLT RFP will depend on the tariff risks that exist at the time of procurement launch.

Post-Proposal Applicable Tariff – LT2 Contract Provisions

- Suppliers are required to use Commercially Reasonable Efforts to avoid or mitigate the impact of any Post-Proposal Applicable Tariffs.
- If total capital costs for the development and construction of the Facility increase by **more than 10%** directly due to such tariffs, the Supplier may submit a Tariff Adjustment Notice (TAN) with supporting evidence to the IESO.
 - The IESO, acting reasonably, will evaluate whether the costs submitted as part of the TAN qualify as an applicable tariff expense under the contract.
- If a TAN is accepted by the IESO, the Supplier may submit a Proposed Revised Fixed Price Notice which the IESO may accept in its sole and absolute discretion.



Next Steps

Next Steps

- The IESO invites stakeholder feedback on the materials presented today, including the proposed procurement considerations by **June 17, 2025**. All written feedback should be submitted to engagement@ieso.ca utilizing the IESO Feedback Form posted on the engagement webpage.
- Analysis of the RFI submissions and further feedback received from this engagement will feed into the IESO's report back to the Minister of Energy and Mines.
- If you have any questions regarding the LLT Resource Procurement, please send them to LLT.RFP@ieso.ca.



Q&A

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