



JULY 24, 2024

Long-Term 2 RFP Stakeholder Engagement

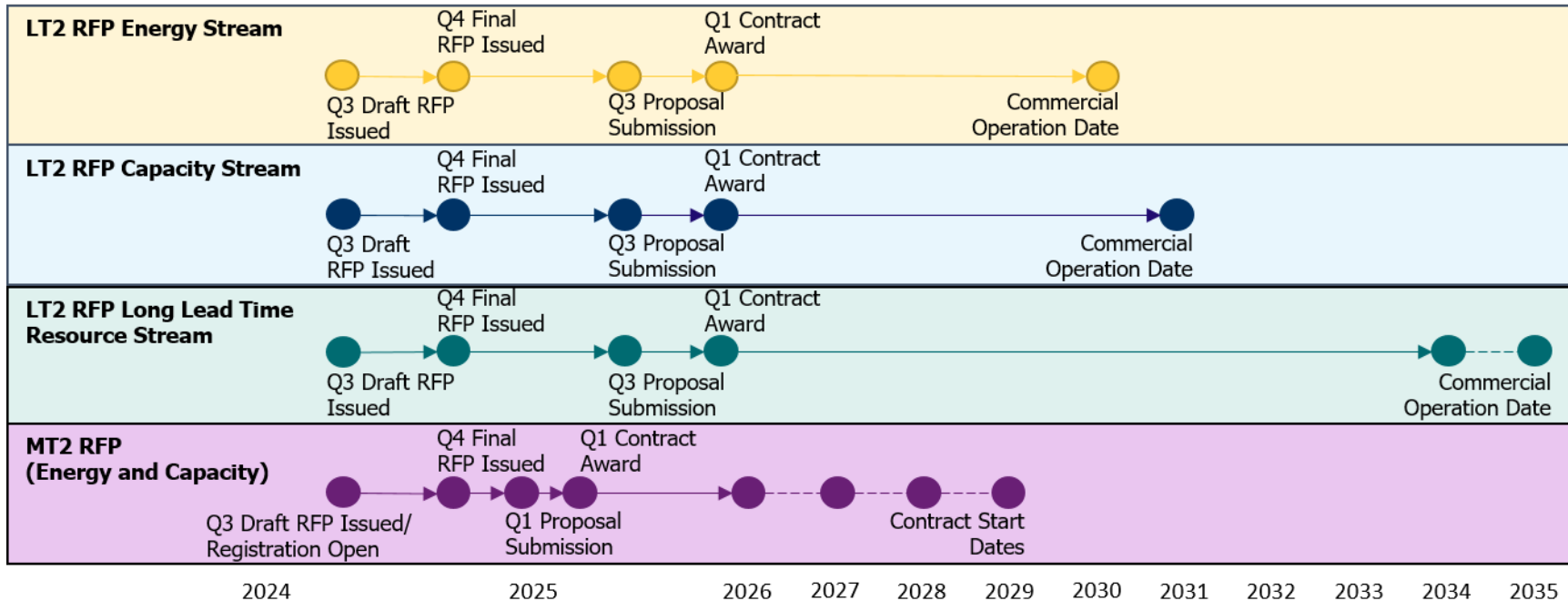
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Agenda

1. Overview of Draft Long-Term 2 (LT2) Energy Contract
2. Key Themes From Stakeholder Feedback
3. Project Siting on Crown Land
4. Next Steps

LT2 RFP and MT2 RFP Illustrative Timelines



Recap: Procurements Under Development

Mechanism	Target	Resource Types	Anticipated Commitment
MT2 RFP (2025)	Energy: TBC Capacity: TBC	Existing energy and capacity resources that are uncontracted or coming to the end of their contract term	5 year contracts starting May 2026, May 2027, May 2028 or May 2029
LT2 Energy (2025)	5 TWh (~2,000 MW)	Energy-producing Market Participants over 1 MW, including repowered/refurbished facilities	20 year contracts starting in 2030
LT2 Capacity (2025)	500-1,000 MW	Capacity-based Market Participants over 1 MW	20 year contracts starting in 2031
Long-Lead Time (2025)	500-1,000 MW	Energy and capacity resources with long-lead times	40 year contracts starting in 2034-2035

Recap: Future Procurements

Mechanism	Target	Resource Types	Anticipated Commitment
MT 3/4/5...	Energy: TBC Capacity: TBC	Existing energy and capacity resources that are uncontracted or coming to the end of their contract term	Flexible 5 year contracts
LT3 Energy (2027)	1,500 MW (TBC)	Energy-producing Market Participants	TBC - 20 year contracts starting in 2032
LT3 Capacity (2027)	TBC	Capacity-based Market Participants	TBC - 20 year contracts starting in 2032
LT4 Energy (2029)	1,500 MW (TBC)	Energy-producing Market Participants	TBC - 20 year contracts starting in 2034
LT4 Capacity (2029)	TBC	Capacity-based Market Participants	TBC - 20 year contracts starting in 2034

Overview of LT2 RFP Design Considerations

Closed Design Items

- E-PPA Conceptual Design
- Resource Eligibility: DERs, Hybridized Facilities, Repowered Facilities
- Municipal Support Confirmations
- Agricultural Land Use Policy

Open Issues – IESO Proposals

- LT2 RFP Deliverability Assessment
- LT2 Contractual Obligations
- Indigenous Community Participation
- Community Engagement
- Rated Criteria
- LT2 RFP: Capacity Stream
- LT2 RFP Proposal Evaluation
- MT2 RFP: Design and Coordination with LT2 RFP

Outstanding Items

- Long Lead-Time Resources Procurement

Housekeeping: LT2 RFP Connection Guidance

- Updated Preliminary Connection Guidance Document for LT2 RFP Energy Stream (Issue 2.0) to be posted in the coming weeks
- Procedure to request access to the transmission system map to be posted shortly after the updated Guidance Document is published
- Provide draft evaluation stage deliverability test methodology shortly after release of the updated Guidance Document and map for stakeholder feedback
- Proponents are invited to request pre-submission consultations, coordinated through IESO Engagement (engagement@ieso.ca)



Overview of Draft LT2 Energy Contract

Draft LT2 Energy Contract

The IESO has released a draft version of the LT2 Energy Contract and is looking for feedback from stakeholders, highlighting the following areas:

- E-PPA Revenue Model
 - Calculation of Monthly Payment (Exhibit J)
 - Outage tracking and DARTA (day-ahead to real-time protection)
 - Treatment of Excess Deemed Revenues
 - Performance Obligations
- Agricultural Impact Assessments
- Facility Amendments
- Environmental Attributes
- Completion and Performance Security

LT2 Energy Contract: Finalization

- The IESO appreciates the continued and meaningful engagement by stakeholders in the development of the LT2 Energy Contract and E-PPA revenue model in particular
- As previously articulated, the E-PPA aims to provide revenue certainty for suppliers, while also encouraging contracted resources to provide power to the IESO when it is most needed (and valuable)
- Working with stakeholders, the IESO has been able to refine the E-PPA design in a manner that retains focus on market signals, while addressing perceived risks
- The following slides will outline a number of changes to the E-PPA design based on stakeholder feedback, as well as considerations to inform the finalization of the model

- Submitted values as part of proposal
- Values calculated as part of contract settlement

Re-cap: Monthly Payment under E-PPA

<p>Monthly Revenue Requirement</p>	<p>= Proposal Price * Annual Imputed Production Factor * Contract Capacity * # of hours in the settlement month</p>
<p>Monthly Deemed Energy Market Revenue</p>	<p>= Deemed Energy Market Price * Monthly Imputed Production Factor * Contract Capacity * # of hours in the settlement month</p>
<p>Grid Reliability Payment (Contractual Payment)</p>	<p>= Monthly Revenue Requirement – Monthly Deemed Energy Market Revenue</p>

Translated into Contract Language in Exhibit J

<p>Monthly Revenue Requirement</p>	<p>= Fixed Price $[FP_y]$ * Contract Capacity $[CC]$ * Annual Average Imputed Production Factor $[IPF_{AA}]$ * Settlement Month Hours $[SMH_m]$ * Force Majeure Capacity Reduction Factor $[FMCRF_m]$</p>
<p>Monthly Deemed Energy Market Revenue</p>	<p>= Imputed Production Price $[IPP_m]^1$ * Monthly Imputed Production Factor $[IPF_m]$ * Contract Capacity $[CC]$ * Settlement Month Hours $[SMH_m]$ * Force Majeure Capacity Reduction Factor $[FMCRF_m]$</p>
<p>Monthly Payment $[MP_m]$ (Grid Reliability Payment)</p>	<p>= Monthly Revenue Requirement – Monthly Deemed Energy Market Revenue + Non-Performance Charge $[NPC_m]$ + Day-Ahead-to-Real-Time Adjustment $[DARTA_m]$</p>

Calculation of Monthly Payment (Exhibit J)

- Deemed based on Monthly Imputed Production Factors and Imputed Production Price (FWAP for wind and solar, simple average for non-wind/solar - negative priced hours set to zero)
- 85% of day-ahead scheduled revenue protected through DARTA
 - Added Intervening Forced Derate Factor (IFDF) to avoid erroneous DA-RT adjustments due to forced outages
- 100% of Excess Deemed Revenue stays with the IESO
 - Exploring possibility of offering a share of Excess Deemed Revenue in return for opting out of DARTA (instead of using rated criteria for this purpose)

Outage Tracking and DARTA

- The IESO recognized that the proposed approach to DARTA must account for forced outages; introduced **Intervening Forced Derate Factor (IFDF)** in draft contract
- Forced outages will be tracked and any "intervening" derates that occur between the time the facility is scheduled day-ahead and when it is injecting in real-time will proportionally reduce the DARTA threshold:
 - E.g. If a facility operating at its full Contract Capacity is scheduled day-ahead, and then sometime prior to delivering the scheduled energy it is subject to a forced outage that reduces its Contract Capacity by 50%, the 85% protection threshold for any DARTA would be reduced to 42.5%

Treatment of Excess Deemed Revenues (1)

- Some stakeholders have expressed concerns whether deemed revenue will be a fair representation of what intermittent resources may realistically be able to earn and suggested that having to pay back excess deemed revenues may exacerbate this issue
- Some stakeholders suggested that calculating FWAP based on day ahead wind forecasts and setting negative prices to zero could lead to scenarios where deemed revenue could exceed what an operator could reasonably make

Treatment of Excess Deemed Revenues (2)

- The IESO's analysis suggests that suppliers will be kept whole in all likely scenarios by way of the 85% Day-Ahead to Real-Time protection, even when 100% of any excess deemed revenues are clawed back
- **Stakeholders are encouraged to share any analysis and/or specific scenarios that demonstrate otherwise**
- **The IESO is continuing to explore the possibility of allowing suppliers to keep a share of excess deemed revenues in exchange for opting out of the DARTA (as an alternative to rated criteria)**

Performance Obligations

- The IESO has previously outlined the importance of ensuring that resources contracted under the LT2 RFP are able to contribute to meeting system needs over the life of the contract, in a manner that aligns with procured attributes. This led to the development of performance obligations in the Contract
- In response, some stakeholders expressed concern over the proposed approach to Non-Performance Charges, citing the need to account for instances of curtailment
- **The IESO is Proposing to remove negative priced hours from the evaluation of Non-Performance Charges, thereby alleviating the risk of being penalized due to economic curtailment**

Other Key Contractual Provisions

- Outside of the finalization of the E-PPA, the draft LT2 Energy Contract includes a number of key contractual provisions and should provide clarity to a stakeholder questions/ feedback
- These include policy related provisions pertaining to the Agricultural Impact Assessment (AIA) as reflected in the Ministers' June 6 letter, as well as clarity relating to facility amendments in the context of the AIA and local permitting requirements
- Other areas of focus include the treatment of environmental attributes and security requirements

Agricultural Impact Assessments (AIAs)

Article 2: Design and Operation, section 2.12

- The IESO requires that each proposal with a project site encompassing Prime Agricultural Lands be accompanied by confirmation and evidence of an AIA completed by any Municipality that has jurisdiction over the lands that constitute Prime Agricultural Lands
- In response to stakeholders concerns regarding the submission of an AIA prior to the LT2 Proposal Submission Deadline, the IESO will now accept AIAs no later than the 18-month anniversary of the Contract Date

Facility Amendments

Article 2: Design and Operation, section 2.1

- The IESO acknowledges that suppliers may need to change aspects of a facilities design after contract date, such as the connection point.
- Similar to the LT1 RFP; these changes would be facilitated through the Facility Amendments process.
- The IESO will consent to these changes unless the Facility Amendment:
 - Adversely affects the ability of the Supplier to comply with its obligations under this Agreement
 - Adversely affects the safety or reliability of the IESO-Controlled Grid as determined by the System Operator

Environmental Attributes

Article 2: Design and Operation, section 2.10

- Similar to MT1 and LT1 the IESO is proposing that it will have no interest in any environmental attributes that arise from the operation of the facility
- All Environment attribute benefits that arise will remain with the supplier
- The supplier will be responsible for laws and regulations relating to environment matters, including the use or procurement of environmental attributes

Completion and Performance Security

Article 6: Credit and Security Requirements, section 6.1

- As mentioned at the July 4th 2024, LT2 Webinar, stakeholders will be required to provide a LT2 RFP Proposal Security of [\$35,000/MW] of the Maximum Contract Capacity. Security must be submitted in the form of a Letter of Credit and be no less than [\$500,000] and no more than [\$15,000,000].
- Successful LT2 Proponents will have their LT2 RFP Proposal Security automatically converted to Completion and Performance Security which will be held until the COD.
- From the COD until the end of the Contract Term, the Completion and Performance Security will be reduced to [\$25,000/MW] of the Contract Capacity.

LT2 Capacity Contract

- The IESO is developing the LT2 Capacity Stream Contract which will largely mirror the LT1 Contract
- The IESO will use stakeholder feedback to inform contract design and is analyzing stakeholder feedback from the July 4th 2024, Stakeholder Engagement Webinar



Key Themes From Stakeholder Feedback

Overview of Feedback Themes

Following the June 13, 2024, LT2 RFP stakeholder engagement, the IESO received feedback from (11) stakeholders on the following themes:

- Enhanced Power Purchase Agreement (E-PPA) and Rated Criteria Points
- Resource Eligibility: Repowered Facilities
- Resource Eligibility: Aggregate DERs and Stand-alone DERs < 1MW
- Hybridization
- Minimum Imputed Production Factor
- Market Participant (MP) readiness for Market Renewal Program (MRP)

Stakeholder Feedback: E-PPA and Rated Criteria Points

What we've heard from stakeholders

- The IESO should not award rated criteria points to proposals that do not elect to use the Protected E-PPA model.

IESO Response to Feedback

- The IESO is currently considering to not award rated criteria points to proponents for the type of E-PPA model they elect and is instead exploring the possibility of sharing excess deemed revenues.

Stakeholder Feedback: Repowered Facilities

What we've heard from stakeholders

- Some stakeholders have indicated that the IESO should allow repowered/refurbished facilities that can meet all performance requirements of the LT2 RFP and LT2 Contract to participate.

IESO Response to Feedback

- To date, the IESO has not received project specific feedback that speaks to repowering opportunities. The IESO is considering enabling new-build facilities under the LT2 RFP that involve the demolition of a pre-existing facility followed by construction of a new facility at the same site. The IESO will require these facilities to meet all LT2 RFP and LT2 Contract performance obligations.

Stakeholder Feedback: Aggregate DERs, DERs < 1MW

What we've heard from stakeholders

- Few stakeholders have indicated that proposals for aggregate DERs and stand-alone DERs < 1MW should be eligible under the LT2 RFP.

IESO Response to Feedback

- Under the LT2 RFP, successful proponents are required to become a Market Participant (MP) that can respond to dispatch instructions by the milestone COD. Currently, these resources are not yet enabled as MPs. As such, the IESO has deferred eligibility of these resources until the LT3 RFP and beyond until clear timelines for when these resources can be enabled as Market Participants have been established by the IESO's Enabling Resources Program.

Stakeholder Feedback: Hybridized Facilities

What we've heard from stakeholders

- Some stakeholders have indicated that, for a co-located BESS facility, the proposed participation mechanism under the LT2 RFP (energy stream only or energy and capacity stream) may not fully realize the benefits of a hybridized facility. Participation under the energy stream only, energy market revenues may not be sufficient to cover project costs. While participation under two separate contracts (energy and capacity stream) may reduce incentives to shift generation during peak hours.

IESO Response to Feedback

- Proponents are encouraged to explore available options to determine if either mechanism is sufficient to justify project development costs amortized over the commitment period of the LT2 Contract.

Stakeholder Feedback: Minimum Imputed Production Factors

What we've heard from stakeholders

- Stakeholders have indicated that Minimum Imputed Production Factors are not necessary under the LT2 RFP and that the IESO should evaluate if they are required by considering the totality of other LT2 RFP requirements.

IESO Response to Feedback

- The IESO will use Minimum Imputed Production Factors (for each technology type) during the LT2 RFP evaluation process to ensure that resources awarded a LT2 Energy Contract are able to meet a minimum performance standard needed by the IESO to address system reliability. Factors for each technology type will be calculated based on the historical performance of such facilities within Ontario.

Stakeholder Feedback: MP Readiness for MRP

What we've heard from stakeholders

- A stakeholder indicated that the IESO should better enable Market Participant readiness for MRP and provide additional MRP training to facilitate internal planning and coordination for Proponents.

IESO Response to Feedback

- The IESO's Market Renewal Program recently held an engagement webinar for the kick-off of Phase 1 of its Market Trials on July 9, 2024. Stakeholders are encouraged to participate in the on-going MRP Implementation Series and can register to do so at engagement@ieso.ca.



Project Siting on Crown Land

Project Siting on Crown Land

- The IESO continues to collaborate with the Ministry of Natural Resources (MNR) on the process and requirements for proposals with projects sited on Crown Land
- MNR continues to recommend that any proponent considering siting their proposed project on Crown Land to contact the MNR support team early at:
 - MNRRenewableenergysupport@ontario.ca
- MNR recommends proponents familiarize themselves with:
 - Buying or Renting on Crown Land: <http://www.Ontario.ca/page/buy-or-rent-crown-land>
 - The application for Crown Land: <http://forms.mgcs.gov.on.ca/en/dataset/018-2401>
 - Application for Work Permits: <http://www.Ontario.ca/page/crown-land-work-permits>



Next Steps

Upcoming Engagements

The IESO is planning a series of engagements over the next few months. In addition, expect **targeted engagements** for both the MT2 RFP and Long Lead Time Resource Procurement.

TODAY
<ul style="list-style-type: none">• Overview of Draft LT2 Energy Contract• Key Themes From Stakeholder Feedback• Project Siting on Crown Land

TBD
<ul style="list-style-type: none">• Community Engagement• Indigenous Participation• Rated Criteria

TBD
<ul style="list-style-type: none">• TBD

Next Steps

- The IESO invites written feedback by **August 9**. All written feedback should be submitted to engagement@ieso.ca utilizing the provided IESO Feedback Form.

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca



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