

NOVEMBER 7, 2022

Expedited Process Procurement Update: Revised Timelines, Key Changes to Draft Procurement Documents, and Revenue Model Considerations for Stakeholder Feedback

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Agenda and Purpose

- Revised Timelines
 - Provide an overview of revised procurement timelines for the E-LT1 RFP
- Update on Same Technology Upgrades Solicitation
- Stakeholder Feedback and Key Changes to the Draft E-LT1 RFP and Contract
 - Provide an overview of stakeholder feedback received and key changes made to the draft E-LT1 RFP and Contract
- Revenue Model Considerations
 - Discuss a revised storage revenue model in response to stakeholder feedback

Timelines: Responding to Stakeholder Feedback

- Many stakeholders have indicated that the current schedule is challenging, in particular with respect to:
 - Tight turnaround between the Deliverability Test results and proposal submission, in particular the interaction between project sizing information and project financing arrangements
 - Accounting for the involvement of the Canada Infrastructure Bank (CIB) and allowing CIB to provide additional information on their proposed financing product
- As a result of this feedback and further considerations on the E-LT1 Contract revenue model, the IESO is revising timelines as outlined on the next slide

E-LT1 RFP Revised Schedule

E-LT1 RFP Milestones	Initial Date	Revised Date
Draft (V3) E-LT1 RFP/Contracts Posted	N/A	November 8, 2022
Feedback deadline: Revenue Model	N/A	November 14, 2022
Feedback deadline: General comments on drafts	N/A	November 21, 2022
E-LT1 RFP Deliverability Test Results	November 30, 2022	November 30, 2022
Final E-LT1 RFP and Contract Posted	November 1, 2022	December 6, 2022
E-LT1 RFP Proposal Submission Deadline	December 20, 2022	January 24, 2023
E-LT1 RFP Contract Offer Announcement (Target)	February 28, 2023	[March 31, 2023]

Impacts of Schedule Changes

- The IESO recognizes that a change to the schedule may require modification to the following sections of the draft RFP and Contract
 - Revision to schedule and milestones in RFP Section 3.1
 - Revisions to Article 2.3 – Milestone Date for Commercial Operation in the E-LT1 Contract and COD Bonus End Dates
 - The IESO is open to hearing stakeholder input on additional changes that may be required
- **The IESO understands that the LT1 RFP schedule will also need to be updated accordingly in response to the E-LT1 schedule. The IESO is assessing the required changes and will discuss at a future meeting.**



Same Technology Upgrades Solicitation

Same Technology Upgrades Solicitation

- The IESO has posted updated versions of the Same Technology Upgrades Solicitation documents:
 - Version 4 of the Call for Submissions document
 - Updated submission form
 - An FAQ document
- Submissions accepted until December 20, 2022
- The IESO will continue to consider stakeholder feedback, and may make further revisions, including adjusting timelines, should any be warranted



E-LT1 RFP and Contract Updates

E-LT1 RFP and Contract Modifications

- The IESO has been reviewing the totality of stakeholder feedback submitted in response to the latest drafts of the E-LT1 RFP and Contract, including feedback provided following the October 18, 2022 webinar
- The following slides present some key drafting changes that are included in the latest drafts, in response to that feedback



E-LT1 RFP Drafting Changes

Proposal Security

Stakeholder Feedback

- Proponents asked for clarification that the drawing of Proposal Security is the IESO's sole remedy for a failure to execute and deliver the E-LT1 Contract

Drafting Change

- **3.7(a)(iv) Selected Proponents** – In response to this feedback, the IESO has revised this section of the RFP to reflect that the drawing of Proposal Security is the IESO's sole remedy for a failure to deliver the E-LT1 Contract
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Outlier Bids

Stakeholder Feedback

- Concern was raised that the outlier bid thresholds of 30% for the Storage Category and 40% for the Non-Storage Category were too narrow and may restrict participation of Small-Scale projects
- As an alternative, it was suggested that a small-scale project set aside be included in the procurement

Drafting Change

- **4.4(b) Stage 4 – Proposal Price Ranking by Evaluated Proposal Price** – The IESO has modified the percentages for “outlier bids” to 40% for the Storage Category and 50% for the Non-Storage Category
- No drafting change: The IESO will not implement a small-scale project set-aside as it does not align with the reliability-based focus for the E-LT1 RFP. Furthermore, the IESO has been provided with a directive that outlines procurement targets, with no set-aside for small-scale projects.

Evaluation 1/2

Stakeholder Feedback

- In response to questions from some stakeholders, the IESO identified the need to further refine Stage 5 of the Project evaluation. Additional clarity was sought on the interplay of the Deliverability Assessment Process and the evaluated Proposal Price stacking for Storage and Non-Storage Projects.

Drafting Change

- **Section 4.5 Stage 5 – Deliverability Test Results Assessment** – The IESO has added a number of revisions in this section of the RFP to clarify the interplay between the Deliverability Test Results in the project stacking for both Storage and Non-Storage Projects.
 - Additional details provided on subsequent slide.
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Evaluation 2/2

Drafting Change Continued

- The revised draft E-LT1 RFP provides additional clarity on Stage 5 of the Proposal Evaluation
 - The section speaks to the subsequent deliverability test that is conducted at Stage 5 and takes into consideration the Non-Storage category, first, followed by the Storage category
 - The IESO has clarified that Proposals deemed “Deliverable but Competing” will be subject to a subsequent deliverability test, which takes into consideration all projects already added to the offer list, following which a Proposal will either be found to be “deliverable” and added to the Offer List, or Not Deliverable, and not processed further
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E-LT1 Contract Drafting Changes

IESO Market Rules 1/2

Stakeholder Feedback

- A number of stakeholders have requested that the IESO modifies its Market Rule provisions in Article 1.6 in order to account for changes to Market Rules, specifically given the introduction of MRP, that may negatively impact the ability of storage to participate effectively in the energy market

Drafting Change

- **Article 1.6 IESO Market Rules and Statutes** – The IESO is considering language in the revised draft to address specific considerations wherein changes in Market Rules that impact an Electricity Storage Facility, such that the Supplier is not able to charge outside of Qualifying Hours and discharge during Qualifying Hours within a 24-hour period in a manner that is reasonably anticipated to enable the recovery of the costs of the withdrawn energy and the operating costs incurred for such cycle.
- Additional details provided on subsequent slide.

IESO Market Rules 2/2

Drafting Change Continued

- The IESO's drafting changes assume that the IESO cannot backstop any specific level of anticipated market revenues, but is willing to consider whether changes in Market Rules impact the ability of a storage facility to operate rationally on a daily basis, consistent with the framework reflected in the Must-Offer Obligation
- However, given the proposed new revenue model for electricity storage discussed later in this presentation, the IESO is reconsidering whether or not the drafting changes to Article 1.6 (c) would still be appropriate if such model were incorporated
- The IESO is seeking stakeholder feedback on the interplay between Market Rule changes and the proposed new revenue model, given that it is a deeming model

Materials Cost Index Adjustment (MCIA) 1/2

Stakeholder Feedback

- Stakeholders asked for additional flexibility to lock-in the MCIA adjustment earlier than 18 months, should Engineering, Procurement and Construction (EPC) or equipment supply agreements be executed earlier

Drafting Change

- **Article 2.13 Materials Cost Index Adjustment** – A modification has been made to MCIA provisions to introduce optionality in the date at which indices are fixed and applied as the one-time adjustment to the Fixed Capacity Payment.
- This date will be the earlier of 18-months after the Contract Date and a date selected by the Supplier based on the date that storage or generating equipment purchase agreements are executed and non-refundable deposits have been paid
- Additional details provided on subsequent slide.

Materials Cost Index Adjustment (MCIA) 2/2

Drafting Change Continued

- The IESO continues to receive feedback on the MCIA construct in the E-LT1 Contract
 - Some stakeholders have indicated their support for the methodology and weighting of the different indices, while others have requested that the IESO adjust the weightings, or allow for Proponents to pick their own weightings and indexing categories, or the introduction of a “collar” for the MCIA that would allow the supplier or buyer to terminate the contract if the lower or higher bound of that collar is hit
 - No drafting change: An approach that allows for Proponents to pick different categories/weightings opens up the procurement to gaming opportunities
 - A collar approach would also provide challenges from a reliability perspective and as such the IESO is not entertaining including a collar
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Degradation of Batteries

Stakeholder Feedback

- Stakeholders requested that the IESO considers a declining Contract Capacity through the life of the Contract to account for battery degradation

Drafting Change

- Article 4.3 Electricity Storage Facility Option to Reduce Contract Capacity** – The E-LT1 Contract requires that Suppliers maintain their facility such that the capacity product procured by the IESO is available through the life of the contract so that reliability needs can be met.
- However, taking into account stakeholder feedback, IESO has introduced an option for Suppliers, at any time prior to the 7th anniversary of the COD, to elect to reduce the Summer and/or Winter Contract Capacity to a lower amount, no less than 80% of the initial Contract Capacity, which would take effect on the 10th anniversary of COD. Such a reduction would lead to a commensurate reduction to the payment (via reduction in Contract Capacity).

Remedies of the Buyer

Stakeholder Feedback

- Concern that the IESO has not limited liability to Completion and Performance Security for Pre-COD Events of Default

Drafting Change

- **Article 10.2 Remedies of the Buyer** – The IESO has modified the language of the Contract to identify that the Completion and Performance Security is the sole remedy for a pre-COD Event of Default

Event of Default by the Supplier

Stakeholder Feedback

- Stakeholders requested to extend the monthly rolling average for the calculation of default as a result of a reduction in the Monthly Average Offered Quantity from 24 months to 36 months. This would provide greater opportunity for Proponents to maintain their compliance requirement of offering at least 75% of their Contract Capacity over that time period

Drafting Change

- **10.1(k) Events of Default by the Supplier**
 - In light of the importance of the Must Offer conditions, the IESO decided to keep the 24-month rolling average, but will extend the commencement of this provision until after the completion of the 3rd Contract Year (rather than after the 2nd Contract Year)

Change of Control

Stakeholder Feedback

- Stakeholders indicated that the Change of Control provisions in the E-LT1 Contract were too restrictive and introduced potentially unintended consequences for certain corporate structures

Drafting Change

- Article 16.6 and 16.7** – Revised language is included in 16.6 and 16.7 to allow for Changes of Control above the Qualified Applicant level (i.e., corporate transactions) where the entity that is the subject of the change of control is not a “Special Purpose Entity”

Reimbursement Reference Efficiency

Stakeholder Feedback

- Stakeholders have requested that the IESO reduces the Reimbursement Reference Efficiency, based on the technical specifications of their facilities

Drafting Change

- **Exhibit R – definition of “Reimbursement Reference Efficiency”** – Reduced this stated variable from 0.8 (80% minimum round trip efficiency) to 0.75 to address potential lower round-trip efficiency for Electricity Storage Facilities (including as a result of degradation).

Additional Feedback: Contractual Off-Ramps 1/2

- A number of stakeholders requested that the IESO introduces contractual “off-ramps”, similar to those included in some past contracts (e.g., FIT) to account for higher-than-forecast interconnection costs, potential delays in obtaining permits or issues with supply chains
- The IESO understands the concerns raised regarding procurement timelines for the E-LT1 RFP and how those tight timelines interact with the macroeconomic environment
- The IESO reminds stakeholders that the E-LT1 RFP was designed as an Expedited Process for those projects confident they can meet 2025/26 commercial operation dates

Additional Feedback: Contractual Off-Ramps 2/2

- The cadenced nature of the E-LT1 and LT1 RFPs provides further opportunities for proponents who require additional lead time to complete development work (including work on interconnections) and secure their materials
- Finally, the E-LT1 and LT1 RFPs are focused on ensuring system reliability needs are met and unlike some past policy-driven procurements (e.g., FIT), allowing for off-ramps would introduce significant risk for the IESO



Alternative Electricity Storage Revenue Model Proposed for Stakeholder Feedback

Analysis of Alternative Contract Design/Revenue Model

- With the revised RFP schedule, the IESO has an opportunity to consider an alternative revenue model for electricity storage resources
- A number of stakeholders, led by the Canadian Renewable Energy Association (CanREA), have proposed an alternative contracting structure as compared to the IESO's current approach. This alternative approach was put forward in August, as an option to mitigate the risk identified by Proponents regarding uncertain future energy market pricing and dynamics.
- The IESO is looking to further develop and evaluate this model ("Capacity Contract with Energy Settlement") as a replacement to the Capacity Contract model previously contemplated
- **The IESO is not changing the Contract design for non-energy storage resources**

Evaluation Considerations

- The IESO had identified a challenge with the model proposed by CanREA as it would require the development and stakeholdering of an evaluated cost model to account for proponent-specific market settlement adjustments
- The IESO has developed an option that would allow for an evaluation process without the development of such a model
- Instead of Proponents bidding three components (Fixed Capacity Payment (FCP), O&M (VOM) and Cycling Reference Efficiency (CRE)), the IESO would use a fixed or \$0 VOM value and fixed CRE value
- Without these fixed values, the IESO would have to build and stakeholder an evaluation model, which could further impact the timelines
- The next slides provide an overview of the IESO's proposed approach

Capacity Contract with Daily Energy Adjustment 1/4

- The alternative revenue model is based on one of the options presented to storage proponents in California and is referred to as a Capacity Contract with a Daily Energy Adjustment
- The model involves a daily adjustment (for each business day), which is then summed on a monthly basis and offset by Regulatory Charges
- The deemed approach calculates the deemed energy revenues on a daily basis, based on an assumed profile of storage charging at the four lowest priced hours and discharging at the four highest priced hours (based on Day-Ahead)

Capacity Contract with Daily Energy Adjustment 2/4

- On a daily basis, the model assumes **HBAP** = Average of the (4) highest-priced contiguous hours occurring during Qualifying Hours as determined by the average of the applicable market price (currently HOEP; post MRP the day-ahead Average locational marginal price)
- It then assumes **LBAP** = Average of the (4) lowest-priced contiguous hours occurring outside of Qualifying Hours as determined by the applicable price

Capacity Contract with Daily Energy Adjustment 3/4

- The **LBAP** value (lowest 4 hours) is then adjusted based on the facility's Cycling Reference Efficiency, **CRE**
 - The IESO would propose utilizing a fixed, fleet-wide round-trip efficiency value rather than having Proponents bid that value in
- Finally, the daily adjustment is then off-set by the O&M Costs for the Facility in question, **VOM**
 - The IESO would propose utilizing a fixed or \$0 VOM value, rather than having Proponents bid that value in

Capacity Contract with Daily Energy Adjustment 4/4

- The Daily Energy Adjustment (DEA) is therefore calculated as follows:
- **DEA_d** = 4 hours x $\max [0, (HBAP - \frac{LBAP}{CRE} - VOM)]$.
- Daily values are then factored into a monthly adjustment, which is in most cases off-set against the facility's **Monthly Payment (MP)**
- **DEA_m** is the Daily Energy Adjustment for Settlement Month "m", being the sum of the DEAd for each Business Day "d" in Settlement Month "m", excluding any Business Day on which a Capacity Check Test is performed in accordance with Section 15.6.

Additional Considerations 1/2

- A fundamental difference between the model now being proposed by the IESO is the use of “continuous 4 hours” vs. 4 highest (or lowest) hours in California, even if they are not continuous
- From a system reliability perspective, the IESO prefers that the 4 hours utilized not be “continuous” as this would allow for storage resources to demonstrate additional flexibility in meeting system peaks
- This is a proposed modification to the model that the IESO is seeking stakeholder feedback on

Additional Considerations 2/2

- In order to maintain the overall timelines of the Expedited Process, the IESO will not be offering both contract options as was allowed in California.
- The IESO is assessing this model as a singular option against the capacity model proposed previously.
- For clarity, the IESO will not entertain further modifications than those identified in the deck to either of the two models as that would require additional stakeholdering

Stakeholder Feedback Requested by November 14

1. Assess whether the proposed approach with fixed VOM and CRE values is supported by Proponents
2. Feedback on the use of non-continuous 4 hours in the model
3. Consider the implementation of this alternative model
4. Feedback on the two models presented
5. Market and operational impacts between the two models
6. Feedback on the appropriate weighting for lithium in the MCIA

Next Steps

- The revised E-LT1 RFP and Contracts are posted with the identified changes in addition to a rider that outlines the alternative revenue model
- The IESO is looking for the feedback on the revenue model by November 14 to be submitted to engagement@ieso.ca
- For clarity, the IESO is not considering any other substantive changes to the RFP or Contract designs but will accept feedback as they relate to the drafts until no later than November 21
- Feedback on the Upgrades Solicitation should be submitted to LT.RFP@ieso.ca
- The final E-LT1 RFP and Contract will be posted on December 6

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