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Additional Information on the Deliverability Test Process for the LT1 RFP

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Purpose of the session today

- The purpose of this session is to provide information and answer questions on the updates made to the LT1 RFP guidance document since the last technical session on May 3rd.



Schedule and Coordination with E-LT1 process

LT1 Deliverability Test: New Schedule

LT1 RFP	Proposed Dates
Deliverability Test Submission Deadline	June 23, 2023
Deliverability Test Results	September 18, 2023

- Start and finish dates were delayed by one week to allow more time for Deliverability Test applicants to complete and submit Deliverability Test Input Data Forms.
- The number and quality of applications, along with the clustering of applications in specific areas have a major impact on the time required to complete the tests.
- The IESO will make every effort to meet the above schedule.

LT1 Deliverability Test: Coordination with E-LT1 RFP

- The evaluation of E-LT1 RFP Storage Category 2 Proposals may not be completed by the Deliverability Test Submission deadline.
- The Deliverability Test Input Data Form has the following questions on the last tab:

Coordination with E-LT1 RFP	
Is this request for a Deliverability Test for the proposed project contingent on the success of a project in the IESO's expedited LT1-RFP (E-LT1 RFP)?	No
If yes, provide project Unique Project ID currently being reviewed under E-LT1 RFP	
If the project identified in line 15 is different from this application for Deliverability Test, would you like the IESO to remove this application from further consideration under the Deliverability Test if the project identified in line 15 is successful in the E-LT1 RFP?	Select One

Select "Yes" if applicable

- With "Yes", the Deliverability Test application(s) will be removed if the E-LT1 proposal is successful.
- If not, such application(s) will be tested.



E-LT1 and LT1 Deliverability Tests: Process

Deliverability Test: Intent

- Deliverability Test was devised to ensure the resources procured by the IESO are able to contribute to meet Ontario-wide system needs.
- The Test will provide early firm information on deliverability to RFP participants before the proposal submission deadline. In previous procurement processes carried out by the IESO, all deliverability tests were done at the bid review stage.
- Previous procurement was for renewable resources which are energy resources. The E-LT1 RFP and LT1 RFP are for capacity resources. Thus, a new test method had to be developed which is focused on summer and winter peak system demands. It also had to consider storage charging situations.
- The IESO started with initial assumptions which were revised with stakeholder feedback. These include the assumptions for the wind and solar generation output being at more practical levels as well as specific generation assumptions for storage project testing.

Deliverability Test: Intent (continued)

- With the test focused on the peak demand periods in summer and winter, the likelihood of passing the test is higher than the test for renewable generation where low demand and high generation output was assumed.
- Many E-LT1 RFP applications received “Deliverable” or “Deliverable but Competing” results.
- The IESO included transmission system upgrades which included transmission upgrades that are expected to be in-service by 2028 in the West Zone. This includes the planned new 230 kV line between Lambton TS and Chatham SS which allowed more projects to pass in the West Zone in E-LT1 Deliverability Test.
- For the future procurements the IESO will include the planned transmission reinforcements if they are assumed to be in service by the time new generation resources are expected to be in-service.

E-LT1 Deliverability Test Findings and Observations

- Northwest Zone: Applications received "Not Deliverable" results. No change for LT1 Deliverability Test.
- Northeast Zone: Applications in the Sault Ste. Marie/Algoma area and in the north of Timmins and Kirkland Lake areas received "Not Deliverable" results. No change for LT1 Deliverability Test. Applications in the other parts of Northeast Zone will be competing for the limited transfer capacity from Sudbury to Barrie in the LT1 Deliverability Test.
- West Zone: The Deliverability Test submissions for E-LT1 showed a very high interest in this area. As a result, most applications received "Deliverable but Competing" results. For LT1 Deliverability Test, contracts awarded in this Zone in E-LT1 will severely limit opportunities for applications to obtain "Deliverable" or "Deliverable but Competing" results.
- Short Circuit Limitations: Issues were identified in the Lambton area, the Windsor area, Chatham area, the Hearn TS area and the western part of the Greater Toronto Area. Solutions were assumed for the Lambton and the Windsor areas for E-LT1 tests.

Deliverability Test: Complexity and Discovery

- The Deliverability Test involves complicated system tests. Each of the projects can have unique features that can affect the test results. For example, for two projects of the same size in the West Zone, one can pass and the other can fail depending where and how it is connected.
- Thus, it is not possible to simply indicate the West zone can accommodate “x amount of” new resources. This applies to other parts of the system as well.
- In some cases the technology chosen can also determine how much can be connected.
- The limitation of the transmission system in northern Ontario was discovered as the IESO carried out the system tests.
- Most of the short circuit issues were discovered as Hydro One carried out the tests for E-LT1 RFP.

Deliverability Test: Latest Developments

- The IESO worked with Hydro One to explore solutions to address the short circuit issues. The following was assumed for the E-LT1 Deliverability Test:
 - Lambton TS bus split
 - Keith TS (Windsor area) 115 kV breakers replaced
- For LT1 Deliverability Test, the following will be assumed in addition to the above.
 - Operating actions will be available to address equipment limitations at Hearn TS and Trafalgar TS
- These will enable transmission capacity for some projects to pass in the Hearn TS area and the western part of the Greater Toronto Area.



Eligibility

LT1 RFP Deliverability Test: Eligibility

- Long-Term Reliability Projects submitted by Qualified Applicants (or Persons Controlled by a Qualified Applicant)
- Eligible Expansion Counterparty at Eligible Existing Facilities, as defined in the draft LT1 RFP
- Note: In the May 26th, 2023 draft of the LT1 RFP, the definition of an Eligible Expansion has been broadened to include additional units with a different Connection Point than the Eligible Existing Facility, where the additional units are located within the boundaries of the Property(ies) on which the Eligible Existing Facility is located.



Deliverability Test Data Input Form

The Form

- The Form has room for improvement. The IESO considered posting a newer version with some improved features but decided against it. Some applicants may already have started to use the form. We will use the current version of the Form posted.
- The following are notes on the current Form.
 - It allows numeric value entries with decimals. What is entered will be used in the test. The display format for a cell will round the number without decimals.
 - On the Qualified Applicant New Build sheet, some entries are duplicated for those who are not indicating multiple circuit connection or connecting to a TS or SS. It is important to answer the following questions (row 21 & 22). The duplicated entries further down are not mandatory, but filling these entries in is recommend.

	1st variation	2nd variation	3rd variation
Row 21			
Row 22			

Multiple circuit connection indication

- The Form is intended to simply allow an applicant to indicate the connection of a project of up to 4 circuits. If a multi-circuit connection is selected, each of the identified circuit and size combinations will be modelled as a separate sub-project. It is important to note if such arrangement is submitted into the LT1 RFP, it will form part of the contract, if successful.
- If the reason for considering connecting to up to 4 circuits is due to a large project size, we strongly encourage the proponents to discuss the connection solution with the applicable transmitter before submitting the application. Selecting a 4-circuit connection is not intended to imply a new switching station involving 4 circuits.
- **Deliverability Test is to test the normal operation mode. There could be provisions in the final project implementation to allow an alternate point of power injection during outage conditions, for example.**

Applications for the LT1 RFP Deliverability Test

- Valid information is critical in carrying out the Deliverability Test. If errors or omissions in the data are identified, the IESO will issue clarifications requests to applicants to correct the information provided before proceeding with the Deliverability Test. Applications will be disqualified if the errors or omissions cannot be corrected within the opportunities described in the Guidance Document.
- The IESO will only issue two clarifications requests to each project, in order to maintain timelines. This means that applicants that require more than two rounds of clarifications for a particular project, or those that do not respond to request for clarifications in the time allotted, will see their project removed from further deliverability testing and as such will not be able to submit a Proposal for said project into the LT1 RFP.
- The IESO is not responsible for correcting information during the clarification process. Thus, early consultation with transmitters and LDCs is strongly encouraged.



Ontario System Base Cases and Transmission Circuit Maps

Base cases and single line diagram

- As described in the previous webinar and in the recent FAQ, power system model base cases can be obtained through IESO Customer Relations subject to the applicant meeting the pre-conditions set out in the Market Rules and entering into a Non-Disclosure Agreement
- They provide electrical connectivity information but they do not have geographical information.
- The base case provides complete information related to Ontario's transmission system.

Transmission System Maps

- Ontario transmission system maps are publically available.
- The following slides show examples of what is available at the Ontario government website and from the IESO website.
- They do not provide circuit names. The Ontario system is somewhat unique with many multiple circuit transmission lines and multiple lines in a corridor.
- The IESO has recommended applicants contact transmitters for the information required for the Deliverability Test.
- Hydro One has been providing helpful information beyond the circuit names. The IESO encourages applicants to contact Hydro One for the information required to complete the Deliverability Test Input Data Form.
- Similarly, the IESO encourages applicants to contact LDCs for the information required.

Transmission Lines in Southern Ontario



<https://www.publications.gov.on.ca/transmission-lines-in-southern-ontario>





<https://www.ieso.ca/localContent/ontarioenergymap/index.html>

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