Deliverability Test Methodology for the IESO's Long Lead-Time Request for Proposals

Capacity and Energy Streams

Version 2

November 9, 2026

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Document Change History

Version	Reason For Change	Date
1	Deliverability Test Methodology for the IESO's Long Lead- Time Request for Proposals	April 13, 2026
2	Update to Section 3.2 System Congestion Assessment: Clarification on intake form and proposal workbook values used for pre-deliverability and evaluation stage deliverability testing.	November 9, 2026

1. Introduction

The Pre-Deliverability Test and Evaluation Stage Deliverability Test described in this document (together the "Deliverability Tests") apply to projects being considered for submission or which have been submitted, respectively, into the IESO Long Lead-Time Capacity Services Request for Proposals ("LLT(c) RFP") and the IESO Long Lead-Time Energy Supply Request for Proposals ("LLT(e) RFP"), together the "LLT RFP".

This document describes the processes, methodologies, inputs, assumptions, roles and responsibilities associated with the Deliverability Tests, as well as an explanation of possible outcomes of the Deliverability Tests. It is intended to inform participants of how the Deliverability Tests will be performed, and to maintain the fairness and integrity of the associated procurement process.

The Pre-Deliverability Test is intended to provide developers with project-specific deliverability guidance ahead of submitting Proposals. Prospective Proponents should note that:

- the Pre-Deliverability Test is not a requirement to participate in the LLT RFP;
- Pre-Deliverability Test results will not be used in evaluation of the LLT RFP; and
- a test result of 'Deliverable' in the Pre-Deliverability Testing does not guarantee that a project will achieve the same result in the Evaluation Stage Deliverability Test, since the test assumptions, scope of testing and list of committed projects may be different for the evaluation stage test.

There is no requirement for the information submitted in the Pre-Deliverability Intake Form to be consistent with the information submitted in the LLT Proposal Workbook; however, any differences in the information submitted may produce a different result.

The Evaluation Stage Deliverability Test will be conducted as part of the evaluation stage of the procurement and will consider other projects that have already been added to the Preliminary List.

Terms in *italics* are defined in the *Market Rules*. Capitalized terms which are not defined in this document have the meaning ascribed in the LLT(c) RFP and/or LLT(e) RFP, as applicable.

1.1 Scope of the Deliverability Tests

As this procurement is focused on meeting reliability needs, the IESO aims to ensure projects awarded contracts can operate with minimized risk of curtailment and congestion on the system.

The Deliverability Tests assess the ability of a project, as an energy or capacity resource, to deliver the intended energy or capacity during the contract term. It will not consider system or

market conditions outside those conditions defined in this document. Thus, a project that receives a result of "Deliverable" under the Deliverability Tests may still encounter situations where their output is curtailed or otherwise constrained in real-time due to specific system conditions.

Projects proposed to connect directly to circuits which are classified as "Not Allowed", as described in Appendix C, will not be tested and will receive a result of "Not Deliverable".

Deliverability Tests do not replace or impact any of the connection assessments that are necessary for project connection and required under applicable regulations. The Connection Assessment and Approval process is outlined in Market Manual 1: Connecting to Ontario's Power System - Part 1.4: Connection Assessment and Approval. (See Appendix B)

Receiving a result of "Deliverable" in a Deliverability Test does not imply that the project will pass the *connection assessment* and approval process, or that connection costs or connection in-service dates will be within any specific range or estimate, or otherwise affect a *Market Participant*'s obligations under the *Market Rules*.

For clarity, a Pre-Deliverability Test does not evaluate the technical solution to connect a proposed project. Applicants are encouraged to discuss that aspect with applicable *transmitters* and Local Distribution Companies (LDCs) prior to submitting a proposal into the LLT RFP.

2. Deliverability Tests

In the Pre-Deliverability Test, the IESO will test up to three intake forms, across all Pre-Deliverability submission deadlines, per prospective Proponent, for each of the LLT(e) and LLT(c), with each form corresponding to one connection arrangement and project size. Where more than three intake forms (for each of the LLT(e) or the LLT(c)) are submitted by a prospective Proponent, these will be tested at the discretion of the IESO, based on priority indicated by the prospective Proponent, which the IESO will endeavor to apply equally to all prospective Proponents. Projects will be tested for deliverability individually, without due regard for other projects submitted for pre-deliverability testing.

In the Evaluation Stage Deliverability Test, only Proposals (including any associated Proposal PQ Alternates) that are on the ranked Preliminary List, as defined and determined in Stage 4 of the LLT RFP proposal evaluation process, will have their deliverability assessed under Stage 5. These proposals will be tested for deliverability sequentially, based on their ranking within the Preliminary List, until the procurement target is met, or there are no more eligible proposals left to test.

2.1 Roles and Responsibilities

Deliverability Tests will be led by the IESO in collaboration with *transmitters* and Local Distribution Companies (LDCs). The following is an overview of roles and responsibilities of these parties in this process:

- LDCs are responsible for assessing if a project connecting to a distribution system is deliverable to the point of connection with transmitter owned equipment. This assessment may include performing congestion and short circuit tests for the distribution network;
    - LDCs will not perform this assessment as part of the Pre-Deliverability Test; therefore, for projects looking to connect within an LDC's system, a "Deliverable" in the Pre-Deliverability Test does not indicate that the project is deliverable to the point of connection with the transmitter.
    - Prospective Proponents are encouraged to collaborate directly with LDCs to request distribution network guidance.

- *Transmitters* are responsible for assessing deliverability from the point of connection with the distributor to the point of connection with the transmission system (including load transformers) if applicable, and completing the short-circuit tests for the transmission network;

- The IESO is responsible for assessing if there is sufficient capacity on the transmission system to deliver the energy or capacity to meet Ontario's forecasted demand. This assessment applies to both transmission and distribution connected LLT RFP projects.
- The IESO is responsible for providing Deliverability Test results for each eligible project under consideration.

2.2 Deliverability Test Results Explanation

For a project to obtain a "Deliverable" result, it must pass all applicable tests included in the Roles and Responsibilities section above. A project will be deemed "Not Deliverable" if it fails any of the tests.

If the test result for a given project is "Not Deliverable", the IESO will identify one of the following reasons for this status:

- Distribution system limitations (e.g. congestion, short-circuit) – Evaluation Stage test Only;
- Transmission system limitations (e.g. congestion, short-circuit);
- Project connecting to a circuit that is "Not Allowed" under Appendix C.

If a Proposal is identified to be "Not Deliverable" during the Pre-Deliverability Test, the IESO may identify potential alternative connection circuits located within the same transmission corridor that could make the project "Deliverable".

For the Evaluation Stage Deliverability Test, the results are considered final, consistent with subsections 4.5(c) and (d) of the RFPs.

3. Deliverability Test Methodology, Criteria, and Assumptions

The following sets out the primary test methodologies, assessment criteria, and assumptions to be used by the IESO in carrying out the Deliverability Tests for the LLT RFP. The IESO is responsible for establishing the methods and assumptions used in the parts of the Deliverability Test under its purview, subject to any applicable standards, codes or other regulatory instruments.

3.1 Test Methodology

The Deliverability Tests will include the following:

- System congestion assessment, including a charging test for LLT Capacity Projects;
- Transmission short-circuit assessment; and
- Distribution system assessment for the Evaluation Stage Deliverability Test only.

As per Ministerial Directive, the IESO will reduce the capacity available for LLT projects proposing to connect to the 230 kV circuits that connect to Nanticoke Transformer Station (TS) and/or the Niagara Reinforcement Line between Allanburg TS and Middleport TS1 by the remaining balance of the 300 MW set aside, if any, established under the May 3, 2018 agreement between Ontario, Six Nations of the Grand River and Six Nations of the Grand River Development Corporation, that is posted to the website of Six Nations Future. Further, this remaining balance will be set aside for any renewable energy projects that are owned by, or have majority equity interest from, Six Nations of the Grand River Development Corporation ("SNGRDC Projects"), as applicable under the agreement.

When performing the Pre-Deliverability Test, all proposed projects will be tested for deliverability individually in order to evaluate each project impact on the system when connected.

For the Evaluation Stage Deliverability Test, Proposals will be incorporated into the base case one at the time, in the same order in which they appear on the Preliminary List, with each Proposal evaluated in combination with the previously added Proposals. All Proposals that are

[1] these circuits include: K40M, N20K, N21J, N22J, N37S, N5M, N6M, Q26M, Q35M and S39M

deemed "Deliverable" in previous tests will be maintained in the basecase for the assessment of proposals lower on the Preliminary List. This sequential testing will continue until the procurement target is met, or there are no eligible proposals left on the Preliminary List to test.

During the Evaluation Stage Deliverability test, the IESO will coordinate with the Transmitters to ensure the transmission short circuit assessment considers projects from the Preliminary List in their order of ranking.

For distribution system assessments, the IESO will coordinate with the LDCs during the Evaluation Stage Deliverability test, to ensure that projects are considered from the Preliminary List in their order of ranking.

3.2 System Congestion Assessment

The goal of this assessment is to determine which projects can be accommodated without causing thermal overloads of transmission equipment in order to minimize the risk of curtailment.

Each LLT(c) project will be tested at their Project maximum summer/winter injection capability, while each LLT(e) project will be tested at their Project Nameplate Capacity as indicated in the respective LLT(c)/LLT(e) RFP Pre-deliverability Test Intake Form. For the Evaluation Stage Deliverability Test, each LLT(c) project will be tested at their Contract Capacity (Summer/Winter), while each LLT(e) project will be tested at their Project Nameplate Capacity indicated in the respective LLT(c)/LLT(e) Proposal workbook. For LLT(c), the charging value being tested is derived from the maximum summer/winter injection capability for the Pre-Deliverability assessment and Contract Capacity for the Evaluation Stage Deliverability Test. Details on this calculation are explained in section 3.2.2.1 below.

Each project proposal will also be tested for its impact on pre-contingency and post-contingency system performance by monitoring power flows and system voltages. The contingencies to be applied are outlined in Section 2.3 of the Ontario Resource and Transmission Assessment Criteria (ORTAC).

All contracted resources will be assumed in service, and all major transmission projects committed to come into service by 2035 are considered (see Appendix A).

3.2.1 LLT Energy Resource Study Criteria and Assumptions

For a project to pass the system congestion assessment for energy resources, the grid needs to meet the thermal and applicable voltage performance criteria. The performance criteria are described in Section 2.4 of ORTAC.

Study Criteria:

With **all transmission elements in service**, flows must be within the equipment continuous ratings. Following single-event contingencies, post-contingency flows must be within the Long-Term Emergency (LTE) ratings.

The use of Remedial Action Schemes (RASs), for the purpose of accommodating new resources, is not considered in the Energy assessments to avoid reliance on RASs with all transmission elements in-service.

Assumptions:

For the system congestion assessment, the IESO will use three main basecases for three larger sub systems of focus:

• Northern Ontario sub-system – includes the Northwest and Northeast electrical zones;

• West of Toronto sub-system – includes the Southwest, West, Bruce and Niagara electrical zones; and

• East of Toronto sub-system – includes the Essa, East and Ottawa electrical zones.

Each of these basecases is adjusted to deliver energy towards Toronto, and includes the following scenario assumptions:

- **Scenario 1**

    • 50th percentile demand forecast from the normal weather scenario for each sub-system of focus, as per the 2026 Annual Planning Outlook (APO) for year 2035;

    • Gas generators dispatched to their maximum operating output; apart from quick-starting gas fired generators and two Lennox units, which will be assumed out-of-service;

- **Scenario 2**

    • Minimum coincident normal weather demand forecast for each sub-system of focus, as per the 2026 APO for year 2035;

    • Gas generators dispatched to 50th percentile output; apart from quick-starting gas fired generators and two Lennox units, which will be assumed out-of-service;

- **Common considerations between Scenarios 1 and 2**

    • Non-energy-limited resources, such as nuclear generators and run-of the river hydro, will be assumed in service at their maximum or normal operating output; with the exception of one Bruce generating unit, which will be assumed out-of-service;

    • Dispatchable energy-limited resources, such as hydroelectric plants, will be assumed at their minimum output, which is in general 50th percentile MW production, because they are considered able to generate around the intermittent resources and maximize the use of the transmission system;

• Existing wind and solar resources will be assumed at 90% of their installed capacity;

• Storage resources charging at 50% capacity,

• LLT Energy Projects will be dispatched to their proposed installed capacity as indicated by the Proponent in their Pre-Deliverability Intake Form, or in their Proposal;

• LLT Energy Projects with parallel circuit connections will be modeled without a low-voltage side connection;

• Summer thermal ratings will be used for transmission circuits;

3.2.2 LLT Capacity Resource Study Criteria and Assumptions

For a project to pass the system congestion assessment for capacity resources, the grid needs to meet the thermal and applicable voltage performance criteria when the resource is assumed to be in-service. The performance criteria are described in Section 2.4 of ORTAC.

Study Criteria:

With **all transmission elements in service**, flows must be within the equipment continuous ratings. Following single-element contingencies, post-contingency flows must be within the Short-Term Emergency (STE) ratings before re-dispatch of resources, and within the Long-Term Emergency (LTE) ratings after re-dispatching. Up to 700 MW of resources following a single-element contingency, and up to 900 MW of resources are allowed to be re-dispatched (or rejected) after double element contingencies to bring flows within the LTE ratings.

With **one transmission element on outage**, up to 700 MW of internal resource are allowed to be re-dispatched to re-prepare the system. After the re-dispatch, flows must be within the LTE ratings. Following a subsequent contingency, loadings could exceed the STE ratings, but need to be reduced below the LTE ratings by re-dispatching or rejecting up to:

• 900 MW of resources for a single contingency

• 2,700 MW of resources for a double contingency

The Capacity assessment relies on existing and new RASs, provided that the maximum amount of resources rejected does not exceed 2,700 MW in total. LLT RFP projects may be required to participate in new or existing RASs.

Assumptions:

For the area and circuit congestion assessments, the IESO will develop three main basecases for three larger sub-systems of focus:

- Northern Ontario sub-system – includes the Northwest and Northeast electrical zones;

- West of Toronto sub-system – includes the Southwest, West, Bruce and Niagara electrical zones; and
- East of Toronto sub-system – includes the Essa, East and Ottawa electrical zones.

Each of these cases is adjusted to deliver energy towards Toronto, and includes the following assumptions:

- Summer normal weather coincident system peak load for year 2035, as per the 2026 Annual Planning Outlook (APO) forecast;
- Scheduled long-term generation outages and refurbishments are accounted for. The following generation units (largest in their respective sub-system) are additionally considered out of service in each basecase:
    - Northern Ontario sub-system - Atikokan GS;
    - West of Toronto sub-system - one Bruce generating unit;
    - East of Toronto sub-system - one Lennox unit;
- Non-energy-limited resources, such as nuclear generators and gas generators, are assumed in service at their maximum or normal operating output;
- Hydroelectric plants, are assumed at their historic 90th percentile MW production over the Ontario summer peak period[2]; and
- Wind and solar resources are assumed at their historic 90th percentile MW production over the Ontario summer peak period.[3]
- Storage resources are assumed to be injecting at 100% of rated capacity.

3.2.2.1 Storage Facility Charging Test

For LLT Capacity Projects, a charging test will be conducted using the following assumptions:

- It is assumed that charging can occur during the 16-hour period outside the 8-hour peak demand periods;
- Nuclear generators will be assumed in service at their maximum or normal operating output;
- Gas generators will be assumed in service at 50% of their maximum operating output as a baseline, to be dispatched higher or lower than 50% to meet demand for charging scenario;

[2] The 90th percentile of Hydro Output during the five peak Ontario demand hours for each of June, July and August for years 2022-2025

[3] The 90th percentile of Wind and Solar Output during the Ontario peak demand hours (hours 13-20) in July for years 2011-2025

- Hydroelectric plants will be assumed at their average output for the sixteen off-peak hours during Ontario's summer peak demand days (Average hydro output for the 16 lowest demand hours (Hours 1-12, 21-24) for each Ontario system peak day for months June, July and August for the last 10 years);
- Solar generation will be assumed at zero output, with an assumption that the majority of charging will occur overnight;
- Wind generation will be assumed at a level available 90% of the sixteen off-peak hours during Ontario's summer peak demand days (Historic 90th percentile output for the 16 lowest demand hours (Hours 1-12, 21-24) during the month of July for the last 10 years);
- Electricity storage facilities will be assumed at 50% of the maximum continuous charging rating level; and
- The charging load, used for the charging test, will be a function of the project maximum injection capability as indicated in the LLT(c) RFP Pre-Deliverability Test Intake Form for the Pre-Deliverability assessment, or a function of Contract capacity as indicated in the LLT(c) Proposal workbook for the Evaluation Stage Deliverability test, and minimum round trip efficiency, according to the below formula. For example, project with a minimum round trip efficiency of 50% , will be tested at 100% ÷ [2*50%] = 100% of its maximum capability rating or Contract capacity, while a project with a minimum round trip efficiency of 60% will be tested at 100% ÷ [2*60%] = 83.3% of its maximum capability rating or Contract Capacity.

$$\mathrm{Pc} = \mathrm{Pmax}/(2 * \mathrm{Eff\ min\ p.u.})$$

Where:

Pc: The charging load used for the charging test, expressed in

MW; Pmax: The maximum injection capability (Pre-

Deliverability) or Contract capacity (Evaluation Stage

Deliverability), expressed in MW;

Eff min p.u: The minimum round trip efficiency, expressed in per-unit.

3.3 Transmission Short-Circuit Assessment

This assessment will be performed by the *transmitters*, who will be responsible for assessing deliverability at the point of connection by completing a short-circuit test.

3.4 Distribution System Assessment

LDCs are responsible for performing the *distribution system* assessment for the Evaluation Stage Deliverability test. LDCs will check if a project connecting to a distribution system is deliverable to the point of connection with transmitter owned equipment, which includes congestion and short-circuit tests for the distribution network.

3.5 System Changes During Deliverability Test

The electricity system is dynamic and subject to change during the Deliverability Test process. For fairness and consistency, final test assumptions will be established directly prior to the IESO commencing the Pre-Deliverability Tests and then again prior to the Evaluation Stage Deliverability Tests. These assumptions will remain unchanged throughout each test. If the test assumptions presented in this document need to be updated prior to any of the Deliverability Tests being initiated, the changes will be publicly communicated.

4. Validation of Pre-Deliverability Intake forms

Prospective Proponents who seek to obtain a Pre-Deliverability Test results should note that they will be responsible for providing valid information as part of the Pre-Deliverability Test Intake Form. As the first step in the Pre-Deliverability Test process, the IESO, will review the information provided by prospective Proponents in the Pre-Deliverability Test Intake Form. If errors or omissions in the data are identified, the IESO will make best efforts to offer a single opportunity for corrections/clarifications from the Proponent to correct the information provided before proceeding with the Pre-Deliverability Test. The IESO will also work with the applicable *transmitter* for short circuit studies and otherwise to complete the Pre-Deliverability Test process. Considering the volume of tests that the IESO and transmitters will be responsible for, prospective Proponents are strongly advised to validate all data before submitting a Pre-Deliverability Test Intake Form, in order to ensure they receive a meaningful result.

Appendix A: Transmission Projects Considered

Table 1 | Transmission Projects Considered in LLT RFP

Transmission Projects	Zone	Target I/S Date
New 2-CCT 230 kV Transmission Line between Lakehead and MacKenzie (Waasigan Phase 1)	Northwest	2026
New 1-CCT 230 kV Transmission Line between MacKenzie and Dryden (Waasigan Phase 2)	Northwest	2027
New 2-CCT 230 kV Transmission Line from Dryden to Ear Falls	Northwest	2032[4]
New 2-CCT 230 kV Transmission Line from Ear Falls to Red Lake	Northwest	2033[1]
New 1-CCT 230 kV Transmission Line from Longlac to Nipigon (Greenstone Transmission Line)	Northwest	2032[1]
New 1-CCT 500 kV Transmission Line from Mississagi to Hanmer	Northeast	2029
New 2-CCT 230 kV Transmission Line from Mississagi to Third Line	Northeast	2029
New 1-CCT 230 kV Transmission Line (built to 500 kV standard) from Porcupine to Wawa	Northeast	2030
New 1-CCT 500kV Transmission Line from Hanmer to Essa	Essa	2032[1]
New 2-CCT 230 kV Transmission Line from the Clarington to Dobbin	East	2029
Richview to Manby Transmission Reinforcement Phase 2	Toronto	2030
New 1-CCT 500 kV Radial Transmission Line from Claireville to Kleinburg with three 500/230 kV autotransformers at Kleinburg	Toronto	2032[1]
New 2-CCT 230 kV Transmission Line from Kleinburg to Kirby (north of Vaughan MTS #4)	Toronto	2032[1]
Bowmanville B - New 500 kV station to connect Small Modular Reactors	Toronto	2032[1]
New 2-CCT 500 kV Transmission Line from Bowmanville towards Toronto bypassing Cherrywood	Toronto	2032[1]
Welland Thorold Power Line	Niagara	2028
Essa to Orangeville 230 kV Conductor Upgrade	Southwest	2029[1]
Wellington - New 500/230 kV autotransformer station in Puslinch that will sectionalize and re-terminate 500 kV circuit M585M, from Middleport to Milton and V586M, from Middleport to Claireville.	Southwest	2031[1]
New 2-CCT 230 kV Transmission Line from Wellington to Preston	Southwest	2031[1]
New Milton 230 kV station with two 500/230 kV autotransformers that will connect into two existing Trafalgar to Burlington 230 kV circuits, T38B and T39B	Southwest	2032[1]
Buchanan to Middleport 230 kV Conductor Upgrade	West	2026[1]
New 2-CCT 230 kV Transmission Line from Lambton to Chatham	West	2028
New 1-CCT 500 kV Transmission Line from Longwood to Lakeshore	West	2029
New 2-CCT 230 kV Transmission Line from Lakeshore to Lauzon	West	2032[1]
New 230 kV switching station in Kanata North area connected to Merivale through a new 2-CCT 230 kV Transmission Line	Ottawa	2033[1]
New 900-MW underwater HVDC transmission line from Bowmanville A to Hearn	Toronto	2034-2037[1]

[4] These projects were not considered as part of LT2-w1 Deliverability assessment.

Appendix B: Connection Process Considerations

All projects proposing to connect to the Ontario electricity grid must apply for a connection assessment as part of the connection assessment and approval process. Transmission connection assessments will include a System Impact Assessment (SIA) carried out by the IESO and a Connection Impact Assessment (CIA-TX) carried out by a transmitter. Distribution connection assessments will include a CIA-DX carried out by an LDC. A distribution connected project that is ≥ 10 MW also requires an SIA and a CIA-TX. These assessments examine the equipment that is proposed to be connected and verify that it will meet the requirements of the Market Rules, Transmission System Code and/or Distribution System Code, and that the manner in which the facility is connected would not result in an adverse impact on system reliability or to connected customers.

On the transmission side, an SIA does not assess whether or not the electricity moving to/from the proposed project can be delivered, because when it can't be delivered, the assumption in an SIA is that the facility will be constrained off. This is the reason that a project which may have already obtained an SIA and/or a CIA-TX cannot be deemed to be "Deliverable" for the purposes of IESO procurements, without first undergoing a Deliverability Test. In addition, a completed SIA does not reserve connection capacity.

Before deciding on siting a project, prospective Proponents should have preliminary discussions with their transmitters or LDC. Similarly, on the distribution side, a project that has already obtained a CIA-DX will not be deemed to be "Deliverable" without going through the Deliverability Test. Prospective Proponents are precluded from applying for a CIA-DX for distribution system connected projects until the conclusion of the LLT RFP. For clarity, prospective Proponents must rescind any CIA DXs that have already been issued related to their proposed project in accordance with Section 2.1(f) of the LLT RFP. Should this requirement not be met, those projects will not be eligible for the LLT RFP. After the Deliverability Test for the LLT RFP is concluded, projects that obtained "Deliverable" results, and are the subject of a contract with the IESO, and that propose to connect to a distribution system, may apply for a CIA DX.https://www.ieso.ca/Sector-Participants/Resource-Acquisition-and-Contracts/Long-Lead-Time-RFP

The IESO strongly recommends that prospective Proponents proposing transmission system projects or ≥ 10 MW distribution system projects delay their SIA applications until the results of the LLT RFP are announced. If a proponent chooses to apply for an SIA, it is important to note that the SIA may need to be updated or restarted after the results of the LLT RFP are announced, as an SIA completed earlier would not have included all successful projects as firm projects (and as noted above, a completed SIA does not reserve connection capacity).

Appendix C: Not Allowed Transmission Circuits

The following tables list the circuits where Deliverability Tests will not be conducted, as described in Section 1.1.

- A circuit is classified as "Not Allowed" if the circuit is:
  - In an area with existing stability issues;
  - Part of an intertie connected to a neighboring transmission system;
  - Identified to be on the weak path of an internal interface; and
  - A new circuit with an in-service date of December 31, 2034 or later. This is to minimize the risk of procuring new resources that may not be able to connect due to potential delays with the new transmission projects.

Table 2 | Transmission Circuit Capacities and Limitations for Northern Ontario

Circuit	Voltage [kV]	Zone	Notes
15M1	115	Northwest	Existing stability issues[5]
56M1	115	Northwest	Existing stability issues[6]
57M1	115	Northwest	Existing stability issues
A4L	115	Northwest	Existing stability issues[2]
A6P	115	Northwest	Existing stability issues[2]
A7L	115	Northwest	Existing stability issues[2]
A7V	115	Northeast	Existing stability issues[7]
A8L	115	Northwest	Existing stability issues
C1A	115	Northwest	Existing stability issues[2]
C1C	115	Northeast	Existing stability issues[3]
C2A	115	Northwest	Existing stability issues[2]
C3A	115	Northwest	Existing stability issues[2]
D23G	230	Northeast	Existing stability issues[3]
D2H	115	Northeast	Existing stability issues[3]
D3H	115	Northeast	Existing stability issues[3]
D3K	115	Northeast	Weak path of an interface

[5] 115 kV system North of Kenora TS

[6] 115 kV system North of Lakehead TS

[7] North or West of Pinard TS

D4	115	Northeast	Existing stability issues[3]
D4Z	115	Northeast	Intertie Circuit
D6T	115	Northeast	Existing stability issues[3]
F1E	115	Northeast	Existing stability issues[3]
H22D	230	Northeast	Existing stability issues[3]
H2N	115	Northeast	Existing stability issues[3]
H4Z	115	Northeast	Intertie Circuit
H9K	115	Northeast	Existing stability issues[3]
K21W	230	Northwest	Intertie Circuit
K22W	230	Northwest	Intertie Circuit
K2M	115	Northwest	Existing stability issues[8]
K38S	230	Northeast	Existing stability issues[3]
K4W	115	Northwest	Existing stability issues[1]
K5A	115	Northeast	Existing stability issues[3]
K5W	115	Northwest	Existing stability issues[3]
L20D	230	Northeast	Existing stability issues[3]
L21S	230	Northeast	Existing stability issues[3]
M3K	115	Northeast	Existing stability issues[3]
M9K	115	Northeast	Existing stability issues[3]
R1LB	115	Northwest	Existing stability issues[9]
R21D	230	Northeast	Existing stability issues[3]
R2LB	115	Northwest	Existing stability issues[2]
R9A	115	Northwest	Existing stability issues[2]
SK1	115	Northwest	Intertie Circuit
T7M	115	Northeast	Existing stability issues[3]
T8M	115	Northeast	Existing stability issues[3]
W3C	115	Northwest	Existing stability issues[1]
F3M	115	Northwest	Intertie Circuit

[8] 115 kV system North of Kenora TS

[2] 115 kV system North of Lakehead TS

[3] North or West of Pinard TS

Table 3 | Transmission Circuit Capacities and Limitations for East of Toronto

Circuit	Voltage (kV)	Zone	Notes
79M1	115	Ottawa	Intertie Circuit
A41T	230	Ottawa	Intertie Circuit
A42T	230	Ottawa	Intertie Circuit
B1S	115	East	Existing stability issues[10]
B31L	230	East	Intertie Circuit
B5D	230	Ottawa	Intertie Circuit
B5QK	115	East	Existing stability issues[1]
C7BM	115	East	Existing stability issues[1]
D5A	230	Ottawa	Intertie Circuit
D5H	230	Essa	Weak path of an interface
E8V	230	Essa	Weak path of an interface
E9V	230	Essa	Weak path of an interface
H9A	115	Ottawa	Intertie Circuit
L33P	230	East	Intertie Circuit
L34P	230	East	Intertie Circuit
L5C	115	East	Intertie Circuit
W3B	115	East	Existing stability issues[1]
W6CS	115	East	Existing stability issues[1]
X1P	230	East	Existing stability issues[11]
X2Y	115	Ottawa	Intertie Circuit
X6	115	East	Existing stability issues[2]

[10] 115 kV system bounded by Barrett Chute, Merivale, and Cataraqui stations.

[11] System East of Dobbin. The transmission reinforcement from Dobbin to Clarington identified in Appendix A is expected to alleviate the stability issues on these circuits; however, the extent of the relief is still under investigation.

Table 4 | Transmission Circuit Capacities and Limitations for West of Toronto

Circuit	Voltage (kV)	Zone	Notes
B3N	230	West	Intertie Circuit
BP76	230	Niagara	Intertie Circuit
J5D	230	West	Intertie Circuit
L4D	230	West	Intertie Circuit
L51D	230	West	Intertie Circuit
PA27	230	Niagara	Intertie Circuit
PA301	230	Niagara	Intertie Circuit
PA302	230	Niagara	Intertie Circuit

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