

Memorandum

To: Technical Panel

From: Josh Duru

Date: March 26, 2024

Re: Market Renewal – Energy Project Implementation: Market and System Operations: MR-00454-R00, MR-00454-R01, MR-00454-R02, MR-00454-R03, MR-00461-R05
Day-Ahead Market, Pre-Dispatch & Real-Time Calculation Engines: MR-00458-R00, MR-00459-R00, MR-00460-R00

Background

Attached for Technical Panel review and consideration are the market rule amendment proposals related to the Market Renewal Program (MRP):

- Market and System Operations; and
- Day-Ahead Market, Pre-Dispatch and Real-Time Calculation Engines.

Market and System Operations:

The IESO proposes to amend the market rules to codify MRP's market & system operations framework, which includes the following:

Chapter 7

- Consequential amendments to section 1 – Introductory Rules and section 2 – Registration for Physical Operations in the Day-Ahead Market and Real-Time Market;
- Extensive amendments and re-writes of section 3 – Data Submissions for the Day-Ahead Market and the Real-Time Market;
- New sections 4 – The Day-Ahead Market, 5 – The Pre-Dispatch Process, and 6 – The Real-Time Market;
- Amendments to section 7 – IESO Dispatch Instructions, section 8 – Determining Market Prices and Economic Operating Points, section 8.4A – Administrative Pricing, and section 9 IESO Procurement Markets;

- New section 10 – Instructions for Generator Offer Guarantee Eligible Resources which includes detail on start-up notices, notices of decommitments and rules specific to resources with operational commitments;
- Extensive amendments to section 11 – Generation Resources and Electricity Storage Resource Synchronization Procedures;
- Consequential amendments to section 12 – Status Reports, Advisories, and Protocols, section 13 – Suspension of Market Operations, section 18 - 20 – Capacity Auctions & Capacity Exports, and section 21 Electricity Storage in the IESO-Administered Markets.

Appendices 7.1 – 7.3 & 7.4

- Appendix 7.1: Energy Offer, Schedule or Forecast Information, Appendix 7.2: Energy Bid Information, and Appendix 7.3: Operating Reserve Offer Information – amendments to identify additional submission requirements where applicable, minor edits for clarity, and addition of resource specific submission requirements;
- Appendix 7.4: Transmission Information Required for Scheduling and Dispatching – minor edits to include reference to the applicable calculation engines as part of the transmission system information submitted to the IESO; and
- Appendix 7.7: Radial Intertie Transactions – amendments incorporate the defined term “resource” and modifications related to segregated mode of operations.

Appendix 7.8: The proposed introduction of Appendix 7.8: Economic Operating Point defines the variables and calculations used for economic operating point, describing the process used to determine the following:

- Section 2 – Day-Ahead Market Lost Cost Economic Operating Point;
- Section 3 – Real-Time Market Lost Cost Economic Operation Point; and
- Section 4 – Real-Time Market Lost Opportunity Cost Economic Operating Point.

Chapter 5

- Section 4: Operating Reserve – amendments to the utilization of control action operating reserve in the real-time market;
- Section 6 & 7: Outage Coordination – minor edits to align daily assessment timelines and amendments to the submission and approval timelines for outages seeking one-day advance approval;
- Section 8: Responsibilities of Market Participants Whose Facilities Form Part of a Remedial Action Scheme (RAS) – amendments to include conditions for compensation for non-quick-start resources that form part of a RAS; and
- Section 10: Demand Control – minor edits to the demand control provisions.

Chapter 11

- Amendments to chapter 11 defined terms.

The IESO provided two overview sessions at the October 10, 2023 and February 13, 2024 Technical Panel meetings.

On March 13th, the IESO posted responses to stakeholder comments received as part of stakeholder engagement on the market and systems operations batch of market rules and market manuals, along with posting the revised market rule amendments and market manuals. As a recap, feedback received as part of the stakeholder engagement were mostly clarification questions that were addressed with explanation or confirmation in the IESO responses. Revisions made to the market rules in response to stakeholder comments were incremental or editorial in nature. The IESO provided an overview of the changes to the market rules at the February 13, 2024 Technical Panel meeting. There has been one additional change to the market rules since the last Panel meeting in response to stakeholder feedback. The change relates to the timelines for changing load participation types and detail has been included in the attached presentation. The stakeholder feedback with IESO responses can be found at – [Stakeholder Feedback and IESO Responses for MRP: Market & System Operations Market Rule and Market Manuals](#).

Day-Ahead Market, Pre-Dispatch and Real-Time Calculation Engines:

The IESO proposes to introduce three new appendices to Chapter 7 of the market rules to incorporate the MRP calculation engine designs, which include the following:

Appendix 7.5

- The Day-Ahead Market Calculation Engine Process describes the process used by the day-ahead market calculation engine to determine commitments, schedules and prices for the day-ahead market.

Appendix 7.5A

- The Pre-Dispatch Calculation Engine Process describes the process used by the pre-dispatch calculation engine to determine commitments, schedules and prices for the pre-dispatch look-ahead period.

Appendix 7.6

- The Real-Time Calculation Engine Process describes the process used by the real-time calculation engine to determine schedules and prices for the real-time market and the real-time look-ahead period.

The IESO provided a calculation engine overview session at the July 12, 2022 Technical Panel meeting.

On October 4, 2022, the IESO posted responses to stakeholder comments received as part of stakeholder engagement on the calculation engine batch of market rules. As a recap, feedback received as part of the stakeholder engagement were clarifying questions on terms and equations and grammatical corrections/suggestions. The feedback did not result in changes to the equations. The stakeholder feedback from 2022 with IESO responses can be found at – [IESO Response to Stakeholder Feedback](#).

On March 13, 2024, the IESO posted revised versions of the calculation engine appendices that include minor changes that were identified by the IESO. All of the required changes were applied consistently across the three calculation appendices. The changes are identified in the

accompanying "[Summary of Changes to the Calculation Engine Appendices](#)" readers guide which provides a summary of the market rule amendments to Appendices 7.5, 7.5A and 7.6.

Included as part the materials for the April 9th Technical Panel, the IESO has proposed further revisions to both the day-ahead market and pre-dispatch calculation engine appendices (Apps 7.5 and 7.5a) as follows:

- revisions to sections 11 and 14 to add an absolute value operator to certain equations to address outcomes caused by negative prices; and
- Correction of a typographical error in section 11.5.1.1.5 to replace *P10NDG* with the correct variable *P10NDL*.

These revisions which were identified by IESO staff have been highlighted (as red font) for Technical Panel review and are described in the attached presentation.

Third Party Review:

The IESO had a third-party review the calculation engine appendices to ensure that tool functionality matches the content of the appendices. The results of the review have been included in the presentation for the Technical Panel during the April 9th meeting, and the final reports from the third-party have been made available on the IESO website.

Recommendation - Priority

The IESO recommends that the Technical Panel assign a regular priority to the development of these market rule amendment proposals.

Panel Action and Next Steps

The IESO recommends that during the April 9th meeting the Technical Panel vote to post the proposed market rule amendments MR-00454-R00-R03, MR-00461-R05, MR-00458-R00, MR-00459-R00 and MR-00460-R00 for stakeholder review and comment for a period of approximately one and a half weeks, ending on April 19, 2024. At the May 14, 2024 Technical Panel meeting, pending the nature of any stakeholder comments received during the posting period, the IESO will request a Technical Panel vote to provisionally recommend the draft market rule amendments.

The target for provisional IESO Board approval is June 7, 2024.

Accompanying Materials

- Presentation to Technical Panel dated April 2, 2024
- Market Rule Amendment Proposals:
 - MR-00454-R00: Market & System Operations – Chapter 7
 - MR-00454-R01: Market & System Operations – Appendix 7.1 – 7.4 & 7.7
 - MR-00454-R02: Market & System Operations – Chapter 5
 - MR-00454-R03: Market & System Operations – Appendix 7.8
 - MR-00461-R05: Market & System Operations – Definitions
 - MR-00458-R00: The Day-Ahead Market Calculation Engine – Appendix 7.5
 - MR-00459-R00: The Pre-Dispatch Calculation Engine – Appendix 7.5A
 - MR-00460-R00: The Real-Time Calculation Engine – Appendix 7.6