

# Memorandum



Independent Electricity System Operator  
1600-120 Adelaide Street West  
Toronto, ON M5H 1T1  
t 416.967.7474  
www.ieso.ca

**To:** The Markets Committee

**Presenter:** Michael Lyle, Vice President, Legal Resources and Corporate Governance and  
Chair, IESO Technical Panel

**Date:** June 6, 2024

**Re:** MRP Market Rule Amendments – Provisional Approval of Market and System Operations and Calculation Engines  
(Market and System Operations: MR-00454-R00-R03, MR-00461-R05)  
(Calculation Engines: MR-00458-R00, MR-00459-R00, MR-00460-R00)

**Purpose of Item:** Recommendation for Provisional Approval to the Board

## **Executive Summary:**

The IESO is seeking a provisional approval from the IESO Board on proposed market rule amendments to codify the Market Renewal Program’s (MRP’s) Market & System Operations framework and Calculation Engine designs. At the May 14, 2024 Technical Panel meeting, the Technical Panel voted unanimously in favour of provisionally recommending the amendment proposals to the IESO Board.

## **Significant Issues, Risks and Opportunities:**

The extensive nature of changes to the obligations, authorities and processes related to the day-to-day operation of the renewed IESO-administered markets and IESO-controlled grid as part of the Market and System Operations (MSO) batch, and related calculation engines, necessitated a significant stakeholder engagement effort by the IESO. The IESO began stakeholder engagement for these batches by presenting an in-depth review of the Calculation Engine market rules to stakeholders and the Technical Panel in 2022, followed by a commitment to have a third-party conduct a review to confirm alignment of the implemented tools with the Calculation Engine rules. This approach allowed the Technical Panel to consider the Calculation Engine market rules alongside the MSO batch with the benefit of the third-party review, validating that the new engines had been developed consistently with the rules. With respect to the MSO batch, the IESO presented an in-depth review of the market rules and market manuals to stakeholders via two engagement webinars on July 27 and 28, 2023, giving stakeholders until November 2023 to review and submit written comments. The IESO held six stakeholder engagement sessions for specific resource-types to provide market participants with detailed information on how those resource types would participate in the new market, from submission of dispatch data in the day-ahead market to the operation of resources in the real-time market. In addition, eLearning modules accompanied by question and answer sessions with IESO experts were offered to provide an integrated view of the processes in the renewed market, from registration through operations and settlement for each different participant type.

Notable feedback received at the stakeholder engagement level included comments on dispatch data revision restrictions, scheduling of GOG-eligible non-quick start resources returning from grid isolation, a concern from the Association of Major Power Consumers of Ontario (AMPCO) on the \$100/MWh bid price threshold in the day-ahead market, and questions on the ability of a market participant to validate economic operating point calculations. In response to this feedback, the IESO made changes to the MSO batch to amend the revision restriction rules to permit market participants greater flexibility to revise certain daily dispatch data parameters, made tool changes to avoid infeasible commitments when resources return from grid isolation, removed the obligation for capacity market participants with hourly demand response resources or capacity dispatchable load resources to offer into the day-ahead market at or above the \$100/MWh bid price threshold, and provided details on how participants could independently calculate their economic operating point.

During the Technical Panel review process, Panel members raised limited, specific concerns related to the MSO batch of market rule amendments. The Market Participant Consumers representative on the Technical Panel raised a concern from AMPCO about loads having to wait 12 months before they could change load participation types from a non-dispatchable load, back to a dispatchable load or a price responsive load; and was of the view the timeline could impair a load's efficient participation in the capacity auction. In light of AMPCO's concern, the IESO reduced the constraint from 12 months to 180 days in the market rules. The Energy Storage representative on the Technical Panel raised a concern regarding an electricity storage resource's inability to submit an energy bid and offer in the same hour the resource has offered operating reserve, and the inability for storage to act in a way to maximize flexibility. The IESO responded that this topic was outside of the scope of MRP, and that currently the IESO is not considering changes to the interim storage solution. The IESO intends on reviewing this item as part of a single resource model for storage that will be developed as part of the Enabling Resources Program, where MRP is creating the foundation needed to efficiently integrate emerging resources.

**Background:**

MSO introduces a day-ahead market for physical energy, operating reserve and virtual energy transactions, and implements enhanced optimization and unit commitment to more efficiently schedule resources within operating constraints. An improved dispatch data submission process, including new dispatch data parameters will facilitate these new features, providing for more efficient resource scheduling. The new market will utilize a new mechanism, the economic operating point, to facilitate make-whole payments for out-of-merit dispatch. The Calculation Engine market rules define the mathematical terms and algorithms that will optimize dispatch data submitted by market participants to meet the power system needs.

The Market & System Operations and Calculation Engine market rule amendments are the sixth of seven market rule batches required to implement MRP. A formal recommendation to the IESO Board with respect to the content in all of the batches will be requested as part of the Final Alignment batch of rule amendments.

## **Proposal and Analysis**

The IESO received 160 comments from stakeholders in total on the proposed Market & System Operations and Calculation Engine market rule amendments, with 30 of those comments coming from the Technical Panel's request for additional written comments.

Seven sets of written comments were received at the stakeholder engagement phase from Atura Power, Evolgen by Brookfield Renewable, Capital Power, the Association of Major Power Consumers of Ontario (AMPCO), the Electricity Distributors Association (EDA), Ontario Power Generation (OPG) and Workbench. Written comments were received from Vlad Urukov (OPG), and Jennifer Jayapalan (Workbench) in response to the Technical Panel's call for stakeholder comments.

Specific to the proposed Calculation Engine market rule amendments, the IESO received written comments from OPG during the stakeholder engagement phase. As noted above, the IESO procured a third-party (PricewaterhouseCoopers LLP) to conduct a review of the implementation of the Calculation Engine rules in the IESO's tools (i.e., Dispatch Scheduling & Optimization). Of the three exceptions observed, none were significant and the IESO worked with the DSO vendor to remediate them. The IESO provided a summary of the findings to the Technical Panel during the April 2024 meeting.

The majority of comments were requests for clarification (113), followed by editorial (17), modifications (35), additions (1), market rule interpretation requests (2), and updates to defined terms (4). No significant concerns on the Market & System Operations and Calculation Engine market rule amendments have been received to date.

### **Next Steps / Implementation:**

I recommend that the Board accept the unanimous vote and provisional recommendation of the Technical Panel to provisionally approve market rule amendments MR-00454-R00-R03 and MR-00461-R05: Market Renewal Program: Market and System Operations and MR-00458-R00, MR-00459-R00, and MR-00460-R00: Market Renewal Program: Calculation Engines.

### **Requested Committee Resolution:**

The Committee is asked to pass the following resolution:

**CONCERNING** MR-00454-R00-R03 and MR-00461-R05: Market Renewal Program: Market and System Operations and MR-00458-R00, MR-00459-R00, and MR-00460-R00: Market Renewal Program: Calculation Engines which are market rule amendments that will enable the Market and System Operations framework and Calculation Engine designs for the Market Renewal Program:

- a) **WHEREAS** these proposals, as part of the broader Market Renewal Program, are intended to increase the efficiency of Ontario's electricity markets;
- b) **WHEREAS** the IESO engaged with the Technical Panel and incorporated their suggestions into the proposal; and
- c) **WHEREAS** the Technical Panel voted to provisionally recommend MR-00454-R00-R03, MR-00461-R05, MR-00458-R00, MR-00459-R00 and MR-00460-R00

**BE IT RESOLVED THAT** the Markets Committee of the IESO Board recommends that the IESO Board of Directors provisionally approve MR-00454-R00-R03, MR-00461-R05, MR-00458-R00, MR-00459-R00 and MR-00460-R00.

**BE IT FURTHER RESOLVED THAT** the Markets Committee of the IESO Board reserve its formal recommendation of MR-00454-R00-R03, MR-00461-R05, MR-00458-R00, MR-00459-R00 and MR-00460-R00, pending its review of the full set of Market Renewal Program market rule amendments and receipt of formal recommendations from the Technical Panel.

Michael Lyle

Cc: IESO Records

Encls.

a. Market Rule Amendment Proposal forms

- 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

b. Technical Panel Materials

i. Memo to Technical Panel from IESO staff, dated May 7, 2024

ii. TP member Rationale, dated May 14, 2024

c. Stakeholder feedback summary, stakeholder engagement and Technical Panel

d. Consumer Impact Assessment

e. Draft Board Resolution