

Appendix A - Market Renewal Program: Summary of Market Rule Amendment Batches

Batch	Description	TP Vote to Recommend	Stakeholder and TP Feedback	Resolution
1- Market Entry and Prudential Security	<ul style="list-style-type: none"> Incorporates participation in the day-ahead market into participant authorization requirements Specifies the registration requirements for Market Participants (MP) for Day-Ahead Market (DAM) and Real-Time Market (RTM) physical transactions Incorporates day-ahead physical transactions into the existing prudential support provisions, creates new sections governing virtual transactions in the DAM, and creates a consolidated monitoring regime for participants conducting both physical and virtual transactions Amendments to defined terms, including the addition of two new participation types 'price responsive loads' and 'virtual traders' 	<p>Provisional vote April 20, 2021 - Unanimously in favour</p> <p>Draft market rules and manuals published for stakeholder review: October 13, 2020</p>	<ul style="list-style-type: none"> No significant issues were raised with the proposed amendments Technical Panel (TP) members noted the need to assess any potential impacts, discrepancies or misalignments between market rule amendments and any OEB codes or instruments TP members also requested that the IESO maintain a 'parking lot' of open issues to be addressed in subsequent batches 	<ul style="list-style-type: none"> Ongoing work between the IESO, Electricity Distributors Association (EDA), and Ontario Energy Board (OEB) to assist Local Distribution Companies (LDCs) in their preparation for MRP Go-Live A 'Parking lot' list of two issues related to: (i) the definition of resource and how it related to energy storage – item closed with the integration of storage resources as part of the Interim Alignment batch; and (ii) the definition of a shared daily energy limit which was replaced with 'forebay' as part of the Settlements batch – item closed following TP review of the Market and System Operations batch
2- Market Power Mitigation (MPM)	<ul style="list-style-type: none"> Determination of reference levels and quantities for dispatchable resources Designation of constrained areas, uncompetitive intertie zones and global market power reference intertie zones Ex-post mitigation for physical withholding Ex-post mitigation for economic withholding on uncompetitive interties Ex-post mitigation for make-whole payment impact on uncompetitive interties Amendments to defined terms 	<p>Provisional vote March 22, 2022 - Nine in favour, five abstentions from TP members representing suppliers</p>	<ul style="list-style-type: none"> 269 comments received from stakeholders and the TP Majority of comments were requests for clarification (175), followed by editorial (41), modifications (2), additions (17), requests on forthcoming market manual content (11), and updates to defined terms (5) Five TP members representing suppliers abstained citing the following rationale: <ul style="list-style-type: none"> Uncertainty to how MPM rules will interact with future batches Belief that the independent review process (IRP) was insufficient and need to 	<ul style="list-style-type: none"> In response to the IESO Board's direction, the IESO worked with stakeholders as follows: <ul style="list-style-type: none"> July 2022 – IESO introduced incremental updates to MPM market manuals and reference level workbooks and example workbooks Sept 2022 – IESO published the interim alignment batch, which included minor editorial changes to MPM market manuals Mar 2023 – IESO introduced incremental updates to MPM market rules, manuals,

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		<p>Draft market rules and manuals published for stakeholder review: August 12, 2021</p>	<p>supplement market manual content of how the IRP will be operationalized</p> <ul style="list-style-type: none"> - Concerns regarding significant effort and burden required on market participants to determine reference levels and quantities • In advance of the IESO Board provisional approval, TP and Markets Committee held an in-camera session to discuss TP feedback • IESO Board acknowledged IESO’s commitment to: <ul style="list-style-type: none"> - Continue working with suppliers to address concerns about the process for determining reference levels and reference quantities, in particular for hydroelectric resources - Review the circumstances under which an independent reviewer’s finding will not be accepted through the IRP, with the intent to limit such instances, and - Seek stakeholder comments on the criteria used to procure independent reviewers 	<p>reference level workbooks and example workbooks</p> <ul style="list-style-type: none"> - Dec 2023 – IESO introduced incremental refinements to the market rules, manuals, reference level workbooks and blank and example workbooks • IESO had more than five discussions with the Ontario Waterpower Association (OWA) to respond to concerns regarding the MPM framework – IESO modified eligible costs for hydro resources in response to concerns. IESO and OWA agreed to monitor MPM post-go live to better understand the impact of their remaining concerns • Feb 2024 TP meeting – TP members recommended reserving time for additional TP meetings to review any outstanding batch interdependency considerations – a series of placeholder dates were proposed by the IESO • Two TP members identified potential topics related to the application of MPM, and the IESO held five additional MPM sessions before the formal vote to recommend the Final Alignment batch
3- Calculation Engines	<ul style="list-style-type: none"> • Defines the mathematical terms and algorithms that optimize dispatch data from market participants to meet power system needs • Provides transparency for how the IESO meets its Chapter 7 obligations to schedule and price the renewed market 	N/A – Presented at the Stakeholder Engagement level in Feb	<ul style="list-style-type: none"> • Stakeholder feedback included clarifying questions on terms and equations; no changes to equations themselves • Grammatical corrections and suggestions 	N/A - included with the Market and System Operations batch for TP review – see Batch 6 below

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	<ul style="list-style-type: none"> Codifies the highly technical content reviewed by stakeholders during detailed design 	2022 only; Included with the Market and System Operations batch for TP Review	<ul style="list-style-type: none"> Clarifying questions about dispatch data submissions that were addressed in the MSO batch A third party (PwC) was retained to independently assess that the implementation of the new calculation engines was compliant with the new rules. Three minor exceptions were noted that were each addressed 	
4- Interim Alignment	<ul style="list-style-type: none"> Simplification of the structure of the participant authorization rules by further eliminating redundant content and better aligning market rules and market manuals Clarification of participation options for price responsive loads (PRLs) and further integration of load definitions – Market Entry and Prudentials Introduction of electricity storage resources into previous MRP amendments Further integration of the new defined term ‘resource’ into the market rules Amendments to defined terms 	Provisional vote April 18, 2023 - Unanimously in favour Draft market rules and manuals published for stakeholder review: September 9, 2022	<ul style="list-style-type: none"> Limited written feedback was received during the stakeholder and TP review periods and where appropriate, changes have been integrated into the batch TP members representing market participant Consumers and Demand Response expressed concerns about PRLs being ineligible to participate as contributors to virtual hourly demand response (HDR) portfolios 	<ul style="list-style-type: none"> In order to facilitate PRL participation as contributors to virtual HDR portfolios, it would be necessary to develop a new load participation model that would involve changes to the existing capacity auction processes and to IESO software. These changes are outside the scope of MRP PRLs were introduced as an optional participation type for Non-dispatchable loads (NDL) and their introduction increases the options available to NDLs, who can continue to participate as they do in today’s market The IESO is willing to revisit the PRL participation model, after MRP, if and when the demand response community identify it as a priority
5- Settlements, Metering and Billing	<ul style="list-style-type: none"> Extensive rewrites of Hourly Settlement Amounts, including the calculation of day-ahead market settlement and real-time balancing settlement Extensive rewrites of Non-Hourly Settlement Amounts 	Provisional vote June 13, 2023 - Unanimously in favour	Stakeholder (91 comments) and TP (51 comments) member feedback: <ul style="list-style-type: none"> No significant concerns were raised Stakeholders indicated that additional questions may arise following the MSO batch 	<ul style="list-style-type: none"> In the Final Alignment batch an extension to the notice of disagreement timelines was provided The MRP implementation working group continues to provide advice on market

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	<ul style="list-style-type: none"> New section 5 – MPM Settlement which specifies the settlement mitigation process applicable to specific settlement amounts and adding new settlement amounts related to market mitigation processes Consequential amendments to the remainder of Chapter 9 New Chapter Appendices to specify data inputs and variables, pseudo-unit translation, and settlement mitigation Amendments to defined terms 	Draft market rules and manuals published for stakeholder review: December 1, 2022	<ul style="list-style-type: none"> Some comments related to the Replacement of Settlement System project and the potential need to increase the notice of disagreement timelines as part of the MRP transition Stakeholders requested further details on MP readiness/testing plans The Distributor representative expressed general concerns with the time required for LDCs to implement changes to their settlement systems and processes 	participant readiness and has been used to coordinate testing
6- Market and Systems Operations and Calculation Engines	<ul style="list-style-type: none"> Define new or modified obligations, authorities, and processes related to the day-to-day operation of the renewed IESO-administered markets and IESO-controlled grid, as well as technical appendices that describe the operation of the IESO calculation engines used to determine market prices and schedule and dispatch resources, including the application of the ex-ante MPM conduct and impact tests 	Provisional vote May 14, 2024 - Unanimously in favour Draft market rules and manuals published for stakeholder review: July 14, 2023	<ul style="list-style-type: none"> No significant stakeholder concerns with either the MSO rules or manuals, or with the calculation engine appendices TP members indicated that additional questions may arise in light of subsequent amendments that will be presented as part of Final Alignment, and that issues discovered through market participant testing activities could necessitate further amendments to the market rules and manuals The Electricity Storage representative expressed the view that the IESO should prioritize the implementation of an enhanced storage participation model given that the MRP design does not yet take full advantage of storage resources' capabilities 	<ul style="list-style-type: none"> The IESO presented the outcome of an independent third-party assessment of the calculation engine's compliance with the draft market rules. All three engines passed all automated and scenario tests performed, the co-optimization of energy and operating reserves, cascading hydroelectric generation, tie-breaking mechanism, penalty factor violations, and inertia limit tests all passed. Only three minor exceptions were observed overall and were subsequently remediated Concerns raised regarding electricity storage relate to design considerations beyond the scope of MRP, but within the scope of future, planned initiatives
7 – Final Alignment	<ul style="list-style-type: none"> The Final Alignment (FA) batch is a restatement of the market rule amendment proposals from all previous provisionally approved batches, and 	Formal vote September 10, 2024 - Unanimously in favour	<ul style="list-style-type: none"> 219 comments received from written submissions Majority of comments were requests for clarification (153), followed by editorial (43), 	<ul style="list-style-type: none"> In response to concerns on MPM, the IESO held five additional sessions with the TP In addition to market participants' ability to leverage the existing recourse options, the IESO committed to take the following

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	<p>comprise the entire set of MRP market rule amendments required to implement MRP</p> <ul style="list-style-type: none"> • The contents of the FA batch have been further supplemented to include: <ul style="list-style-type: none"> - Updates to earlier batches resulting from the ongoing implementation and engagement processes - Transitional market rules required to facilitate the mechanics of transitioning from the current market to the renewed market - Administrative “conforming changes” made to improve alignment between the various impacted chapters (e.g. updates to internal references and defined terms) 	<p>Draft market rules and manuals published for stakeholder review: June 7, 2024</p>	<p>modification of a market rule (10), and modification of a market manual (13)</p> <ul style="list-style-type: none"> • No significant concerns on the market rules language • Concerns raised in relation to the MPM framework related to the potential for unintended outcomes and risks to suppliers, and sufficiency of recourse mechanisms were the main substantive comments 	<p>actions to the satisfaction of stakeholder and Panel member concerns:</p> <ul style="list-style-type: none"> - Further delay designation of constrained areas - Enhance end-to-end testing of the MPM framework - Apply discretion to not issue ex-post mitigation assessments if warranted - Establish an MPM working group, with codification of the IESO’s obligation to establish such working group in the market rules