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Market Renewal Program

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Webinar Participation

- Ways to interact in today's webinar:
 - **Raise your hand** (click the "Raise hand" button in the top right corner) to let the host know you'd like to verbally ask a question or make a comment. The host will let you know when to unmute
 - **Enter a written question/comment in the chat.** The host will read it out for you
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Agenda

- Update on the Consolidated Draft of market rules and market manuals
- Proposed categories for qualifying Independent Review Process experts
- Design Implementation Solutions
 - 1-Day Advance Approval Process Timeline
 - Market Facing Reports



MRP Consolidated Draft Update

MRP Consolidated Draft Background

- MRP Consolidated Draft is a reference tool that reflects the provisional market rule and market manual amendments posted for stakeholder review up to the forthcoming MSO Batch
- The provisional market rule and manual amendments are shown as tracked against the baseline that the IESO anticipates will be in effect in advance of go-live.
- The MRP Consolidated Draft will serve as an accessible reference tool that can be used when reviewing the forthcoming MSO batch of market rule and manual amendments.

Included in this MRP Consolidated Draft update

Calculation Engines

- Reviewed with stakeholders in July 2022
- To be reviewed by Technical Panel with MSO batch

MPM Update

- Reviewed with stakeholders in March 2023

Settlements Batch

- Currently in the provisional review process

Interim Alignment

- Provisional approval - IESO Board, June 2023

Non-MRP Amendments also included in this update

Improving Accessibility of
Operating Reserve (MR.00467)

- Effective date: May 1, 2023
- In the current baseline

Enabling co-located Hybrid
Resources (MR.00474)

- Effective date: June 7, 2023
- In the current baseline

Updates to Synchrophasor
Monitoring Requirements
(MR.00471)

- Effective date: December 31, 2024
- Will be in effect at MRP Go Live

Replacement of the IESO
Settlement System (MR.00475)

- Effective date: May 1, 2023
- In the current baseline

Where is the MRP Consolidated Draft?

Energy Stream Designs

The Market Renewal Program (MRP) is modernizing Ontario's electricity markets to address inefficiencies and will be a building block to embrace the continued transition to new and diverse resources. After extensive engagement, the IESO released high-level designs and detailed designs, and is now moving into Implementation.

IN THIS SECTION...

Detailed Design

High-Level Design

Implementation

Market Participant Readiness

Replacement of the Settlement System

Implementation Phase Documents

This phase will establish the Market Renewal Program (MRP) designs into rules, manuals, processes and tools to implement the renewed energy markets.

Visit the [implementation engagement page](#) to find out about upcoming sessions.

Market Rules and Market Manuals

Here you'll find draft amendments to the market rules and market manuals, proposed as part of MRP.

+ Market Entry and Prudentials (Updated March 2021)

+ Market Power Mitigation (Updated July 2022)

+ Calculation Engines (Updated July 2022)

+ Market and System Operations

+ Market Settlement, Metering and Billing

+ MRP Consolidated Draft (Updated September 2022)

MRP Consolidated Draft
market rules and manuals can
be found on the
[Implementation Phase Documents](#) webpage.



Independent Review Process Categories

IRP Background

- The Independent Review Process (IRP) allows participants who are dissatisfied with the reference levels and reference quantities the IESO establishes for their resources to secure alternate determinations from an independent reviewer
 - The IESO will be required to adopt the independent assessment of the reviewer, subject only to limited exceptions set out in the market rules
- The IRP was introduced in response to expressed stakeholder concern that the dispute resolution process under the market rules is too slow and costly to effectively address objections market participants may have with respect to MPM

IRP Background Cont'd

- The IRP offers participants a new, discretionary mechanism for addressing specific potential objections with respect to reference levels and quantities
- The IRP does not preclude or detract from the existing rights or avenues for recourse available to market participants, i.e., dispute resolution

IRP Process

- **Prior to MRP go live:** The IESO will qualify potential experts to provide IRP services through a vendor of record arrangement
- **During a reference level consultation:** Market Participants can request use of the IRP after receiving a preliminary view report from the IESO. The Market Participant will identify the technology type, as well as the reference level or reference quantity type that relates to the issue at hand
- **After receiving a request:** The IESO will then issue a Request for Services (RFS) for the qualified experts in that category

IRP Categories – Qualification

- The IESO will qualify experts segmented according to the **technology type** and the **type of reference level or reference quantity**
- Experts will be qualified for each combination of these dimensions (referred to as the 'category')
 - For example, an expert might qualify for the category 'nuclear - non-financial reference levels'
- The qualification of potential experts is expected to be an ongoing activity
- There will be technical minimum thresholds which will assess relevant factors such as: experience of staff, depth of bench strength, quality and relevance of experience, etc.

IRP Categories – Technology Types

- The segments that the IESO has identified for **technology type** are:
 - Wind
 - Solar
 - Nuclear
 - Storage – Battery
 - Storage – Non-battery
 - Thermal – Biomass
 - Thermal – Cogeneration Gas
 - Thermal – Combined Cycle Gas
 - Thermal – Simple Cycle Gas
 - Hydroelectric
 - Hydroelectric – Cascade
 - Hydroelectric – Pumped Storage

IRP Categories – Type of Reference Level/Quantity

- The segments that the IESO has identified for **type of reference level or reference quantity** are:
 - **Financial Reference Levels (FRL)**: this segment includes all reference levels for which the units of measurement involve currency, e.g., "energy offer reference level (\$/MWh)"
 - **Non-Financial Reference Levels (NFRL)**: this segment includes all reference levels for which the units of measurement do not involve currency, e.g., "energy ramp rate reference level (MW/min)"
 - **Reference Quantities (RQ)**: this segment includes all reference quantities, e.g., "energy reference quantity (MW)"

IRP Categories – Financial Reference Levels

- Expertise regarding **financial reference levels** will be required in the following areas:
 - Understanding of and experience with day-to-day operations including decisions used to optimize revenues
 - Understanding of and experience in determining the levelized cost of energy (LCOE)
 - Understanding of and experience in assessing the standby costs
 - Understanding of and experience with procurement, pricing, transportation and handling of fuel (where applicable)

IRP Categories – Non-Financial Reference Levels

- Expertise regarding **non-financial reference levels** will be required in the following areas:
 - Understanding of and experience with day-to-day operations from technical perspectives
 - Understanding of and experience with technical and operational performance
 - Understanding of and experience with scheduling including maneuverability and constraints on unit operations

IRP Categories – Reference Quantities

- Expertise regarding **reference quantities** will be required in the following areas:
 - Understanding of and experience with scheduling, including maneuverability and constraints on unit operations
 - Understanding of and experience with the technical and operational performance

IRP Categories – Grid

Category	FRL	NFRL	RQ
Solar			
Wind			
Nuclear			
Energy Storage - Battery			
Energy Storage – Non-Battery			

Category	FRL	NFRL	RQ
Thermal – Biomass			
Thermal – Combined Cycle Gas			
Thermal – Simple Cycle Gas			
Thermal – Cogeneration			
Hydroelectric			
Hydroelectric – Cascade			
Hydroelectric – Pumped Storage			

IRP Next Steps

- Stakeholders are invited to review the proposed categories for the IRP procurement and provide comment on:
 - Technology Type Segments
 - Reference Level and Reference Quantity Type Segments
- Written comments related to these topics to be submitted prior to **July 13, 2023**

IRP Next Steps (Cont'd)

- After making any necessary updates, the IESO intends to begin the process to qualify potential experts in Q3, 2023
- This qualification posting is anticipated to remain active on an ongoing basis to allow potential new proponents to apply going forward
- The IRP process is anticipated to be available to market participants prior to MRP go-live (May 2025) to resolve any potential outstanding issues
- Further details regarding timing of IRP availability will be provided as the process advances



Design Implementation Solutions

Background

- Currently, the IESO is drafting the full set of Market Rules and Market Manuals for stakeholder review
- Alongside, the IESO is working on solution development, technical specifications, among other efforts to support IESO and Market Participant readiness
- Within this process of implementing the design, there are issues and opportunities that may need to be resolved, and the IESO wants to be proactive and transparent about how these items are resolved

Background (Cont'd)

- One of the goals of MRP Engagement is to use stakeholder time and effort wisely, to focus and draw attention to areas of change and to build on the principles of transparency
 - Example of this approach used in detailed design were the technical sessions to gain stakeholder advice prior to full review of the detailed design

Market Renewal Principles



Approach

- Update stakeholders quarterly if any design integration issues exist, show how they were resolved, and the rationale behind decisions
- Stakeholders are open to provide advice on the solutions, ask questions, or recommend alternatives to resolve these challenges

Design Implementation Solutions

1-Day Advance Approval Process Timeline

Certainty – Moving up the 1-Day Advance Approval Process Timeline

Issue: The current process for submitting and assessing planned outages submitted under the 1-day advance approval process is not aligned with the timing of the day-ahead market (DAM), creating the potential for material scheduling and pricing differences between the DAM and the real-time market.

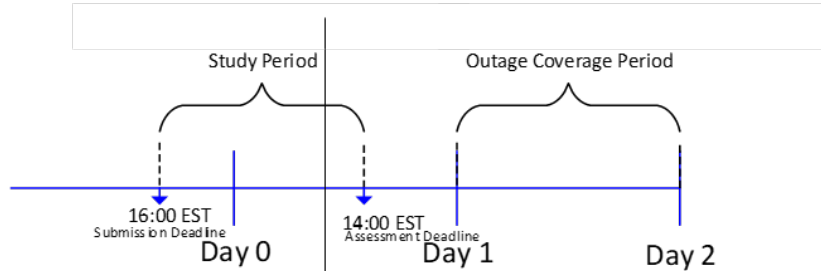
Proposal:

Existing Design	New Design
Market participant submission deadline: 16:00 EST two business days before the start of the outage; IESO Assessment deadline: 14:00 EST one business day before the start of the outage.	Advances the submission and assessment deadlines by at least 6 hours: Market participant submission deadline: 10:00 EST two business days before the start of the outage; IESO Assessment deadline: 08:00 EST one business day before the start of the outage.

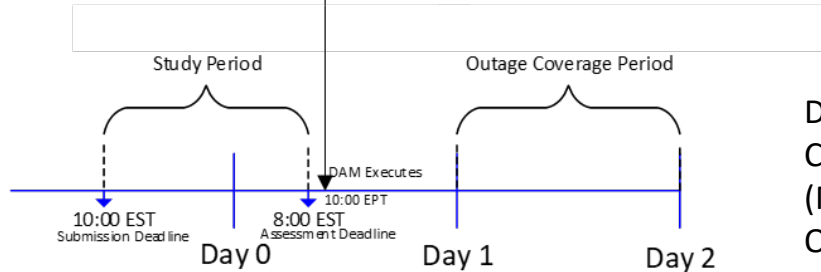
Rationale: Expected real-time outage conditions are reflected in the DAM, supporting price and scheduling certainty for market participants and the IESO.

Illustration: Current vs. Future 1-Day Advance Approval Timelines

Current 1-Day Advance Approval Process Timeline



Future 1-Day Advance Approval Process Timeline



Documented in Market Rules Chapter 5 and Market Manual 7.3 (Market and System Operations batch)



Design Implementation Solutions

Market Facing Reports

Issue

- As Market Renewal is going through the implementation process, it will necessitate creating and updating certain reports – this content will provide details on a list of reports that have been updated during the process of implementing the detailed design

External Reports: Updated Summary

Change Type	Detailed Design	Implementation
Update Content	28	23
New	53	54
Update Timing Only	10	9
Total	91	86
Retire	31	32

List of Revised Reports

Reports that have been updated since detailed design:

1. System Adequacy Report
2. Pseudo-Unit (PSU) Generator Data Computed Values Report
3. Day-Ahead Schedule Report
4. Notice of Mitigation of a Resource for a Price Impact Report
5. ADE Expansion Request Approval Report
6. Pre-Dispatch Binding and Advisory Schedules Report
7. Pre-Dispatch Demand Response Schedules Report
8. Real-Time Operating Reserve in Market Report
9. Load Forecast Deviation
10. Reports published via website data

1. System Adequacy Report

Existing Design (Table 3-1, P&R)	New Design
Revise for Timing and Content Add new market participant types (price responsive loads and virtual traders).	Revise for Timing only Report will not include new market participant types.

Rationale:

Price responsive loads and virtual traders are not required in the adequacy calculation; their Day-Ahead Market (DAM) schedule data will be available in the 'Day-Ahead Totals Report'.

2. PSU Generator Data Computed Values Report

Existing Design (Table 3-3, P&R)	New Design
<p>Revise for Timing and Content Initial publication of the PSU generator data computed values report to be aligned with future day-ahead market timelines. Report will be issued at approximately 10:00 Eastern Prevailing Time.</p> <p>Additional revisions to pseudo-unit data computed values will be published hourly.</p>	<p>Revise for Timing and Content Report will be issued after the successful completion of the DAM calculation engine.</p> <p>Additional revisions to pseudo-unit data computed values will be published hourly and every 5-minutes.</p>

Rationale: The computed PSU operational values will not be available until after the successful completion of each calculation engine. Outages and derates are impactful to these computed values in all timeframes.

3. Day-Ahead Schedule Report

Existing Design (Table 3-5, P&R)	New Design
<p>Revise for Timing and Content Include DAM quantity of energy scheduled for withdrawal at every delivery point for settlement of non-dispatchable loads (NDL).</p>	<p>Revise for Timing and Content Report will not include DAM quantity of energy scheduled for withdrawal at every delivery point for settlement of non-dispatchable loads.</p> <p>Report will provide information per dispatch hour identifying mitigation conditions which are met during price impact test failures for ex-ante mitigation.</p>

Rationale: DAM quantity of energy scheduled for withdrawal is not applicable to NDL delivery points. DAM forecast quantity for NDL delivery points will be covered under Load Forecast Deviation Report.

3. Day-Ahead Schedule Report (Cont'd)

Existing Design (Table 3-5, P&R)	New Design
<p>Revise for Timing and Content Include DAM quantity of energy scheduled for withdrawal at every delivery point for settlement of non-dispatchable loads (NDL).</p>	<p>Revise for Timing and Content Report will not include DAM quantity of energy scheduled for withdrawal at every delivery point for settlement of non-dispatchable loads.</p> <p>Report will provide information per dispatch hour identifying mitigation conditions which are met during price impact test failures for ex-ante mitigation.</p>

Rationale: Merging 'Notice of Mitigation of a Resource for a Price Impact Report' into the 'Day-Ahead Schedule Report' to improve user readability and report efficiency.

4. Notice of Mitigation of a Resource for a Price Impact

Existing Design (Table 3-22, P&R)	New Design
New Market participant confidential, event-specific report in the event that the conduct and impact test is failed for price impact.	Removed Market Participants will be notified in the 'Day-Ahead Schedule Report' and the 'Pre-Dispatch Schedules Report' per dispatch hour when a resource fails conduct and impact tests, as well as the ex-ante mitigation condition

Rationale:

Reports combined to improve user readability and reporting efficiency.

5. ADE Expansion Request Approval Report

Existing Design (Table 3-5, P&R)	New Design
New Confidential notification for approval of ADE expansion request.	Removed Maintaining the current process of verbal communication between the IESO and the market participant.

Rationale:

The current process is sufficient given the risk and impact of tracking ADE expansion request decisions.

6. Pre-Dispatch Binding and Advisory Schedules Report

Existing Design (Table 3-6, P&R)	New Design
<p>New</p> <p>Notify a market participant of their new NQS resource commitments (binding start-up instruction and operational constraints), and provide advisory schedules (energy and operating reserve) and advisory prices for all resources.</p>	<p>Revise Content and New</p> <p>Splitting into two new reports:</p> <ol style="list-style-type: none">1. Pre-Dispatch (PD) Schedules Report: Existing market report revised to show advisory schedules (energy and operating reserve) from the PD calculation engine. Report will provide information per dispatch hour identifying mitigation conditions which are met during price impact test failures for ex-ante mitigation.2. PD Commitments Report: New report to show day-ahead and PD commitments as confirmed in the PD timeframe. Report to also indicate which hour the start-up notification was issued for the commitments.

Rationale: Splitting the 'PD Binding and Advisory Schedules Report' into two and merging 'Notice of Mitigation of a Resource for a Price Impact Report' into the 'PD Schedules Report' will improve user readability and report efficiency.

6. Pre-Dispatch Advisory and Binding Schedules Report (Cont'd)

Existing Design (Table 3-6, P&R)	New Design – Cont'd
Notify market participants of their new NQS resources commitments (binding start-up instruction and operational constraints), and provide advisory schedules (energy and operating reserve) and advisory prices for all resources.	Content Change Report will not include advisory prices.

Rationale:

Removing advisory prices to improve user readability and reduce duplication. Price information will be available in the 'Pre-Dispatch Pricing Report' (P&R Table 3-9).

7. Pre-Dispatch Demand Response Schedules Report

Existing Design (Table 3-6, P&R)	New Design – Cont'd
Revise for Timing Reporting timelines to be aligned with pre-dispatch schedule.	Retire

Rationale:

Report publishes information on the pre-dispatch constrained schedules of Ontario's Demand Response 3 (DR3) resources for all hours of the current and next day. The DR3 program does not exist in today's market and will not be part of the future market.

8. Real-Time Operating Reserve in Market Report

Existing Design (Table 3-14, P&R)	New Design
Revise for Content Remove unconstrained market information.	Retire

Rationale:

Control Action Operating Reserve is no longer a market feature under MRP.

9. Load Forecast Deviation

Existing Design (Table N/A)	New Design
Not identified	New Non-dispatchable load forecast deviation between day-ahead and real-time will be reported for settlement purposes

Rationale:

Report was added for transparency and reconciliation of settlement outcomes for non-dispatchable loads in response to stakeholder feedback.

10. Reports Published via Website Content

Report	Existing Design	New Design
Weekly Market Summary Report	Existing market report that is being updated under market renewal to capture such changes as replacing the <i>hourly Ontario energy price</i> with locational marginal prices and an Ontario zonal price.	Information to be published through ieso.ca data pages and not through a report
Monthly Market Report		
Uncompetitive Interties Report	New market power mitigation report to communicate identified uncompetitive intertie designations	

Rationale:

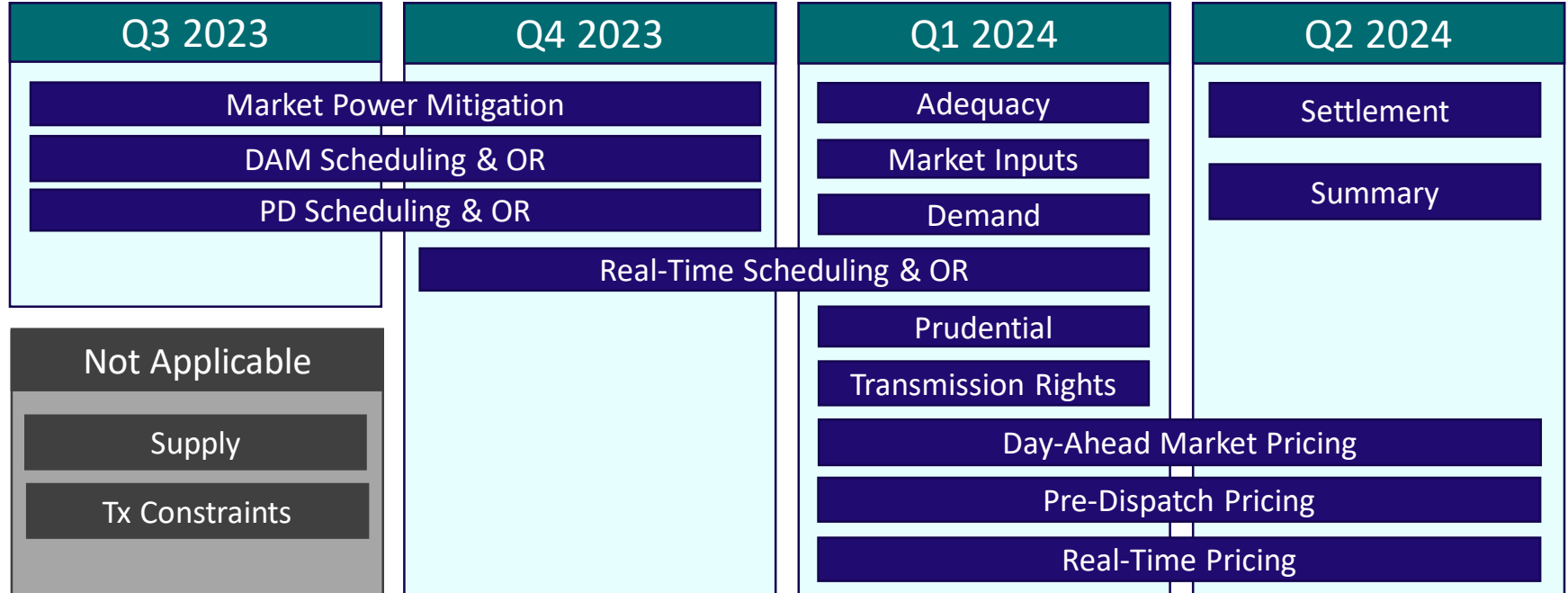
The existing market summary reports have been transitioned to website content. MRP will continue this new approach.

The MPM intertie designations will be updated infrequently. A website posting will better align with the nature of the information.

Approach & Timeline

- Schema & sample files will be published for all “revised for content” and “new” reports in 4 batches: Q3 2023, Q4 2023, Q1 2024, and Q2 2024
- Reports that will be “revised for timing” will not require a change to schema or sample files; new timing will be communicated to MPs by Dec 2023 to update API schedules
- Reports that will be “retired” will not require a change to schema or sample files; a transition plan to ensure appropriate availability of data through MRP go-live will be shared in Q2 2024

Schema & Sample File Timeline by Group



Report & Schema File Quantities by Group

Report Group	# Reports	# Schema	Target Schema Posting
MPM	12	12	Q3/Q4 2023
DAM Scheduling & OR	12	7	Q3/Q4 2023
Pre-Dispatch Scheduling & OR	5	5	Q3/Q4 2023
Real-Time Scheduling & OR	10	10	Q4 2023/Q1 2024
Adequacy	1	1	Q1 2024
Market Inputs	5	5	Q1 2024
Supply	1	0	N/A
Demand	3	3	Q1 2024

Report & Schema File Quantities by Group (Cont'd)

Report Group	# Reports	# Schema	Target Schema Posting
Prudential	2	2	Q1 2024
TX Constraints	3	0	N/A
Transmission Rights	2	2	Q1 2024
DAM Pricing	8	8	Q1/Q2 2024
Pre-Dispatch Pricing	7	7	Q1/Q2 2024
Real-Time Pricing	9	9	Q1/Q2 2024
Settlement	5	5	Q2 2024
Summary	1	1	Q2 2024

Next Steps

- **July 13:** Deadline for stakeholder feedback on the design implementation solutions and proposed categories for IRP procurement
- **July Engagement Days:** walkthrough of the Market and System Operations batch of Market Rules and Market Manuals

Thank You

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