

---

**SEPTEMBER 22, 2022**

# Market Renewal Energy Project Implementation | Engagement Days

# 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 facilitator will let you know when to unmute
  - **Enter a written question/comment in the chat.** The facilitator will read it out for you
- **Microphones should be muted at all times,** unless the facilitator has called on you to unmute yourself



# Market Renewal Program: Revised Schedule

# Market Renewal Program Schedule

- As indicated previously, the projected Market Renewal Program go-live date of November 2023 is no longer feasible
- With the project schedule now informed by detailed requirements and a full set of vendor timelines, IESO has established a revised in-service date of May 2025, and a forecast budget of \$233 million
- Business case for MRP remains sound – delivering at least \$700 million in net financial benefits to Ontario consumers over the first ten years

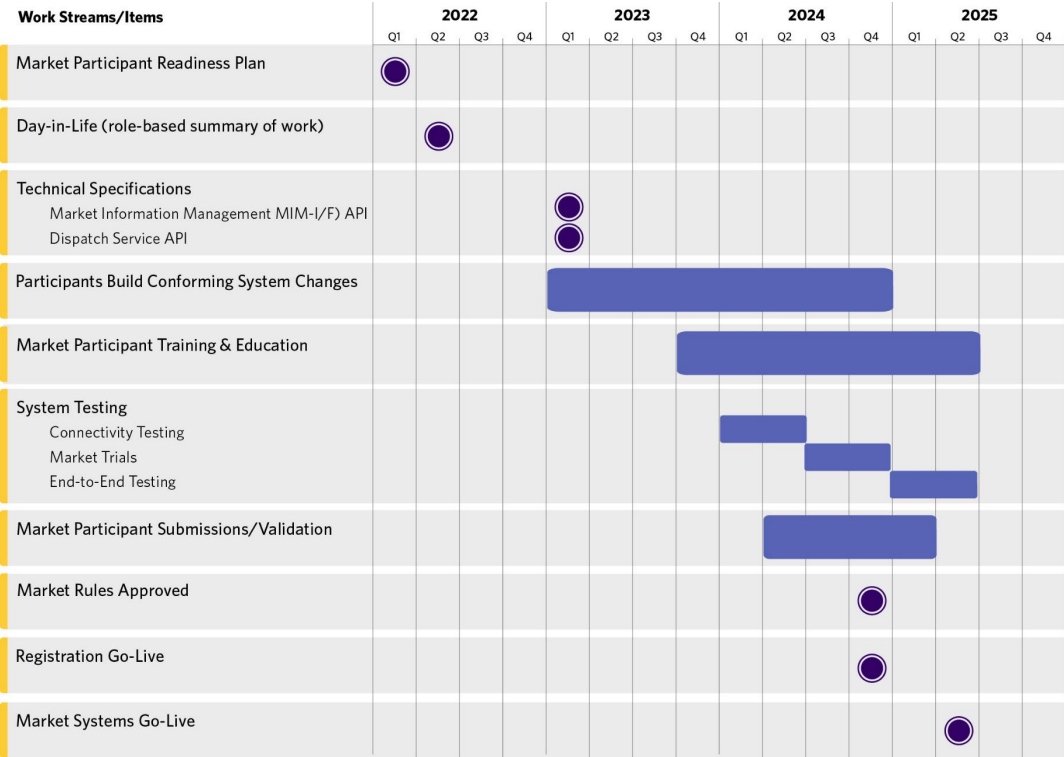
# Why is the Market Renewal Program a priority?

- MRP is imperative for the transformation of Ontario's electricity system and will deliver significant ratepayer savings by:
  - Enabling effective integration of new resource types (storage, hybrids and DER) through foundational improvements to the electricity market systems
  - Ensuring efficient operation of Ontario's existing resources, and
  - Addressing recommendations from the Market Surveillance Panel and Auditor General to remove existing wholesale energy market inefficiencies that are costly to ratepayers

# Market Renewal Program Scope and Budget

- Project scope remains intact
- Budget increase of \$55M, including contingency, reflects increased IT vendor costs and IESO labour costs from longer project duration
- MRP schedule revision is not expected to impact other key IESO initiatives such as Resource Adequacy and the Enabling Resources Program
- Revised schedule provides more time for market participant readiness activities, including an extended period for participants to develop system changes
- Launching a program status webpage to report quarterly on project progress and milestones - demonstrating accountability and increasing transparency

# Program Schedule: Market Participant Readiness Activities



**Legend**

- Phase of Work [Blue Bar]
- Key Milestones [Purple Circle]

# MRP: Business Case Validation

- In light of project schedule and budget changes, the IESO reviewed the 2019 MRP Business Case to validate the assumptions and benefits
- Validation effort confirmed that the Business Case remains sound
- Project is expected to deliver at least \$700 million in net financial benefits to Ontario consumers over the first 10 years of operation
- Efficient operation of Ontario's existing resources and effective integration of new resource types is dependent on the foundational improvements MRP will deliver



# Business Case Validation Process

- Review of inputs into original business case
- Assessment of whether expected benefits, costs, and underlying assumptions have materially changed
- Updated view of demand and supply projections over the assessment period
- Review the potential for changing market conditions in the intervening period

# Business Case Validation: Benefits

- Quantifiable Benefits: Estimated benefits of \$975 million from market efficiencies and avoiding unnecessary payments remain the same
- Market efficiency benefits are not affected by schedule/budget changes as design has remained the same
- Benefits from more efficient unit commitment sustained as resource mix continued to have start-up costs and operational requirements

Market Efficiency	10 Years of Efficiency Benefits (\$M)
More Efficient Unit Commitment	\$190
Improved Intertie Pricing	\$285
Increased Resource Competition	\$50
<b>Total Efficiency Benefits</b>	<b>\$525</b>

## Business Case Validation: Benefits (con't)

- Renewed market would avoid \$450 million of congestion management settlement credits
- Design unaffected by schedule/budget changes
- Level of avoided payment is consistent with results in 2021 market activity

## Business Case Validation: Costs

- Forecast project costs have risen since previous analysis
- More detail is known about ongoing operation costs following in-service to operate the renewed market, and included in this validation
- Total implementation and operation cost combined estimate increases total by \$92 million

# Business Case Validation: Non-Quantified Benefits

- Benefits from improved price signals and resource optimization are expected to be even larger and of increased importance as Ontario adds more distributed and diverse resource types
- Key MRP design elements such as multi-hour optimization and locational pricing are essential foundations for IESO initiatives on storage integration and enabling new resources

---

# MRP Consolidated Drafts: Overview

## Market Rules and Market Manuals

# Meeting Purpose and Agenda

## **Purpose :**

Educate participants on the purpose and need for the set of changes included in the MRP Consolidated Draft and the Interim Alignment batch

## **Agenda :**

- MRP Consolidated Draft Overview
- Interim Alignment Batch Overview
- Market Rules / Market Manuals Batch Summary
- Overview of Key Changes:
  - Per Market Rule Amendment Package
  - For the set of Market Manuals
- Next Steps

# What is the MRP Consolidated Draft?

A reference resource consisting of a set of full market rule chapters and supporting market manuals, exhibiting the most up-to-date provisionally approved amendments related to market renewal.



# Purpose of the MRP Consolidated Draft market rules

## **To track and represent the evolving set of provisionally approved MRP Market Rule amendments:**

- MRP related market rule amendment proposals from each provisionally approved batch will be compiled into a consolidated restatement

## **To aid market participants in their review of MRP related Market Rule amendments:**

- The consolidated provisionally approved amendments will be redlined against entire market rule chapters and market manuals
- Will serve as a baseline against which subsequent batches of MRP amendment proposals may be compared

# Example: How to Read the MRP Consolidated Draft

## Initial Amendment:

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* shall submit a single form

## First subsequent amendment:

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* shall ~~submit~~ may submit a single form

## Second subsequent amendment:

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* may submit a single form along with any supporting information



Once  
amendment  
receives  
provisional  
approval

## MRP Consolidated Draft (version 1):

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* shall submit a single form

## MRP Consolidated Draft (version 2):

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* may submit a single form

## MRP Consolidated Draft (version 3):

1.1.1 the *IESO* shall.....

1.1.2 the *market participant* may submit a single form along with any supporting information

# Example 2: Defined Term 'Resource'

## Market Entry and Prudentials batch:

*Resource* means an IESO-modelled representation of one or more *generation units* or *loads*, existing within the IESO's systems, which is used for the secure operations of the IESO control area, or to participate in the IESO-administered markets, or a *boundary entity resource*.

## Interim Alignment batch:

*Resource* means an IESO-modelled representation of one or more *generation units*, *electricity storage units*, or ~~loads~~-sets of *load equipment*, existing within the IESO's systems, which is used for the secure operations of the IESO control area, or to participate in the IESO-administrated markets, or a *boundary entity resource*



## MRP Consolidated draft (initial):

*Resource* means an IESO-modelled representation of one or more *generation units* or *loads*, existing within the IESO's systems, which is used for the secure operations of the IESO control area, or to participate in the IESO-administered markets, or a *boundary entity resource*.

## MRP Consolidated draft (post provisional approval for Interim Alignment):

*Resource* means an IESO-modelled representation of one or more *generation units*, *electricity storage units*, or sets of *load equipment*, existing within the IESO's systems, which is used for the secure operations of the IESO control area, or to participate in the IESO-administrated markets, or a *boundary entity resource*

# Where can the MRP Consolidated drafts be found?

## 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 IESO webpage under Market Renewal Implementation Phase Documents



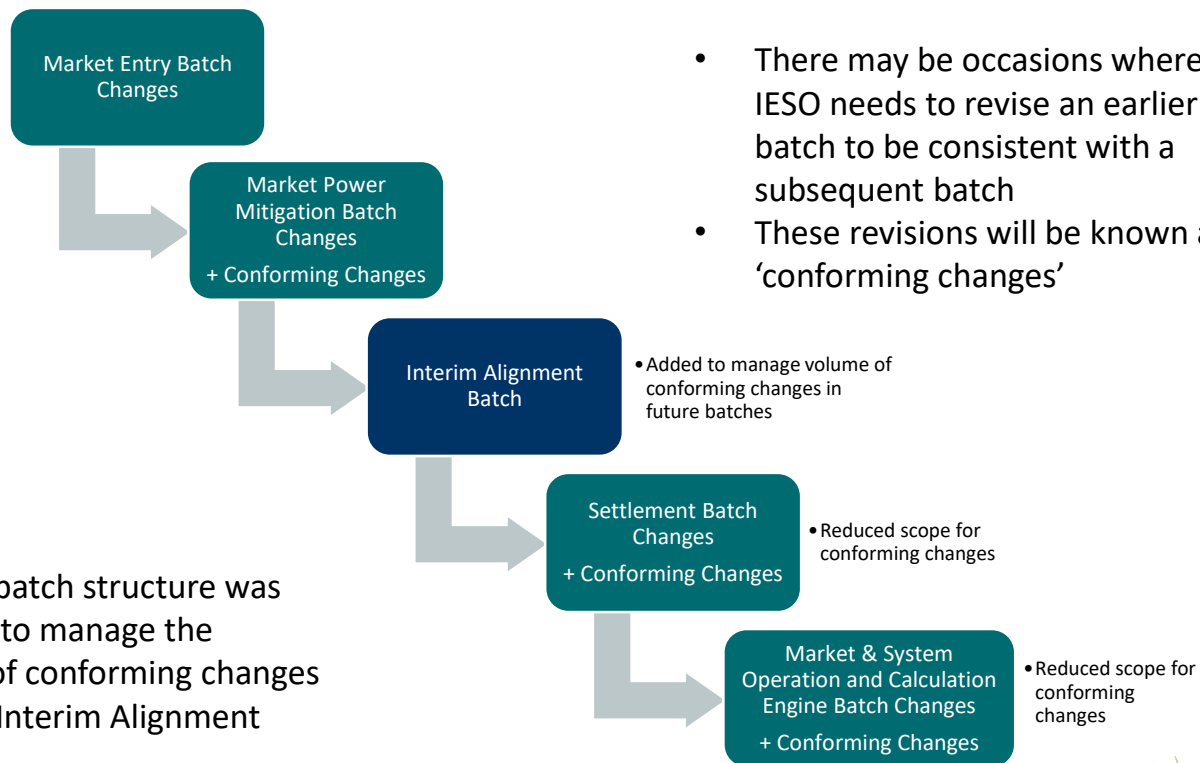
# **Interim Alignment Batch: Overview**

## Market Rules and Market Manuals

# What are the 'Interim Alignment' Market Rules?

- As the IESO is drafting the Market Renewal Project (MRP) Market Rules and Market Manuals, there are times when revisions are needed to previous rules sets, known as 'Conforming Changes'
- The IESO is being transparent and purposeful with stakeholders by bringing forward a set of changes within this 'Interim Alignment' batch, which will reduce the volume of conforming changes required in future batches, and will allow stakeholders to focus on key Settlement and Market Operations content during the review cycles for those batches

# Background: Conforming Changes



- There may be occasions where the IESO needs to revise an earlier batch to be consistent with a subsequent batch
- These revisions will be known as 'conforming changes'

Original batch structure was updated to manage the volume of conforming changes through Interim Alignment

# Audience

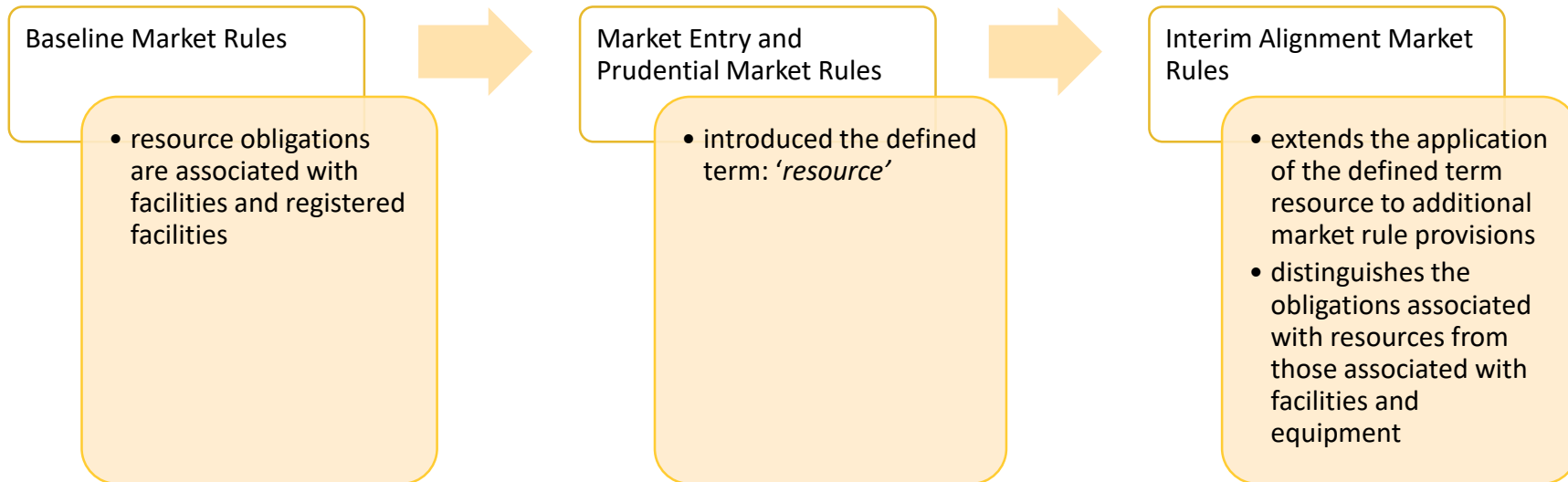
While all stakeholders are invited to review, this material has greater relevance to electricity storage participants, and potential PRL participants (loads and storage)



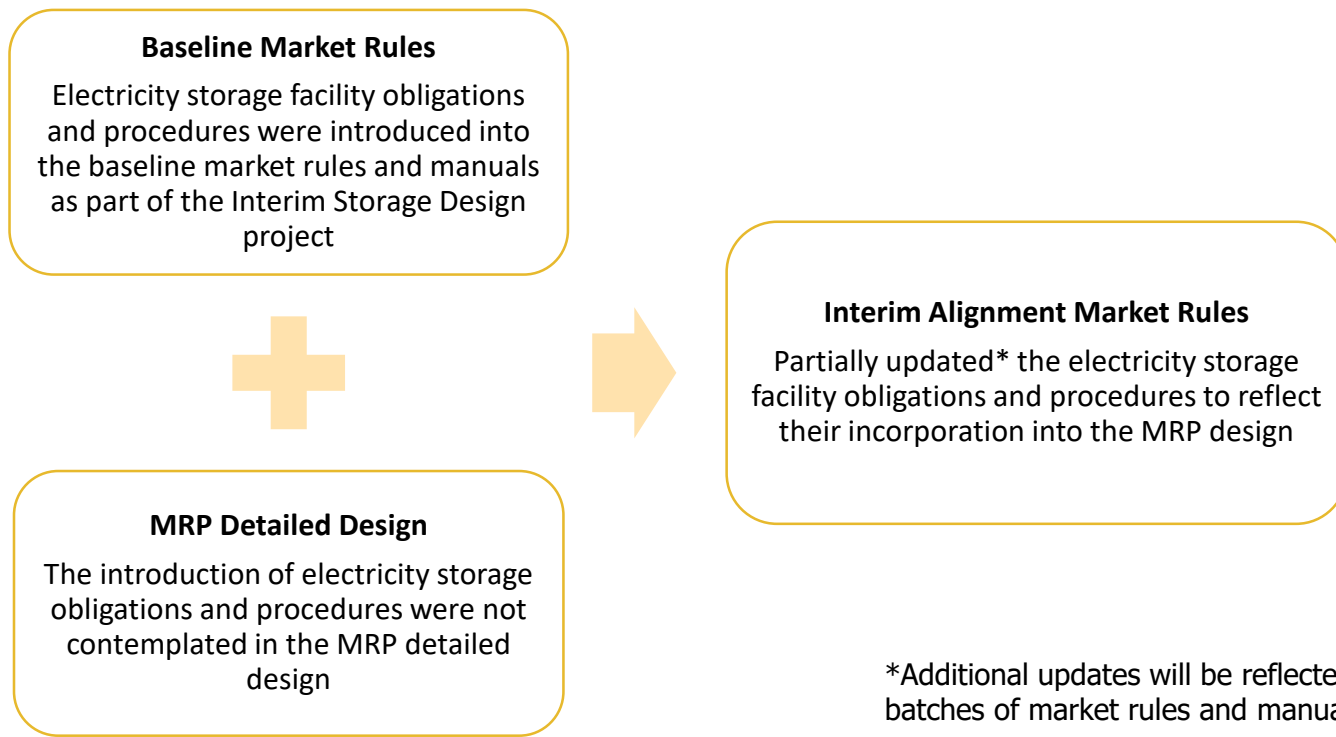
# Scope

- This batch will build on three concepts introduced in prior batches:
  - Resource as a defined term
  - Electricity storage facilities within MRP
  - Price responsive load (PRL) as a distinct load resource type
- Additionally, this batch will:
  - add a defined term for combined cycle plant to clarify registration procedures and facilitate future batch amendments, and
  - remove CMSC monitoring terminology for consistency with the MRP design

# Background: Resource

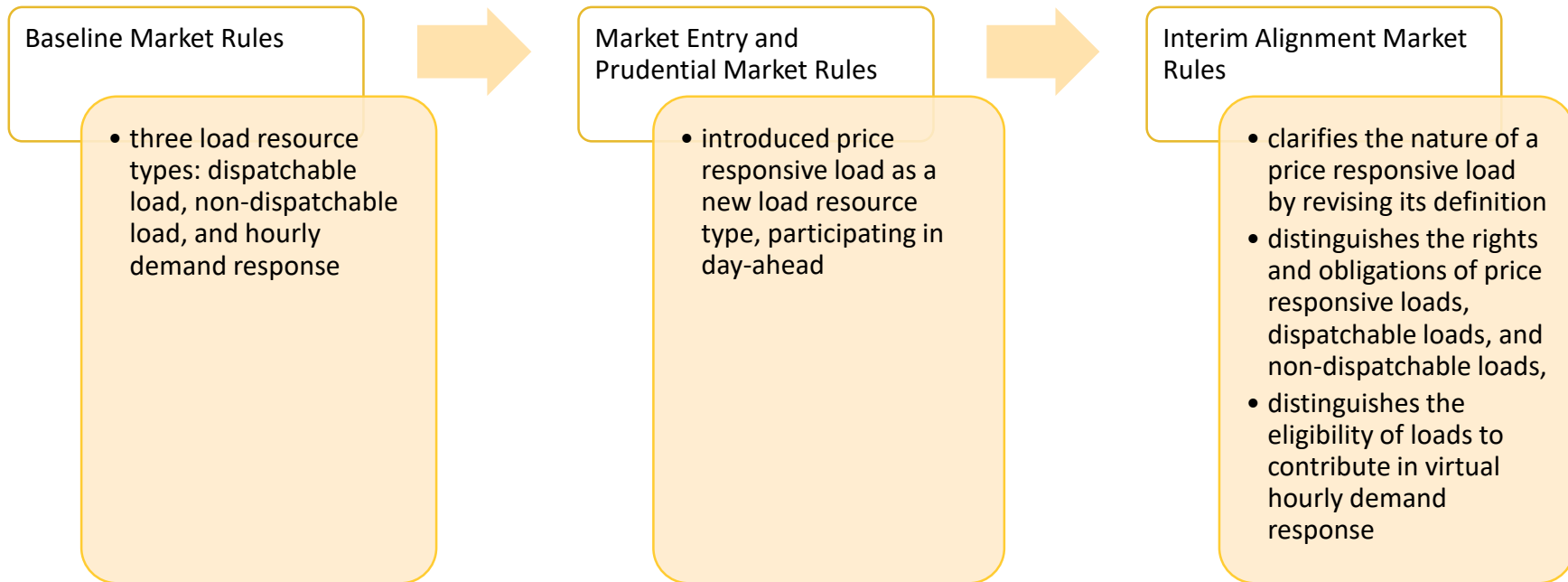


# Background: Electricity Storage



\*Additional updates will be reflected in subsequent batches of market rules and manuals

# Background: Price Responsive Load





# **Interim Alignment: Batch Summary**

## Market Rules and Market Manuals

# Impacted Market Rules and Manuals

## Market Rules

- Chapter 1: Introduction and Interpretations
- Chapter 2 & 2Appx: Participation
- Chapter 3: Administration, Supervision, Enforcement
- Chapter 4 & 4Appx: Grid Connection Requirements
- Chapter 5: Power System Reliability
- Chapter 6 & 6Appx: Wholesale Metering
- Chapter 7: System Operations and Physical Markets
- Chapter 10: Transmission Service and Planning
- Chapter 11: Definitions

Market rule provisions that describe the obligations and authorities regarding authorization, prudential, facility and resource registration – including the connection, meter requirements, and the MPM framework

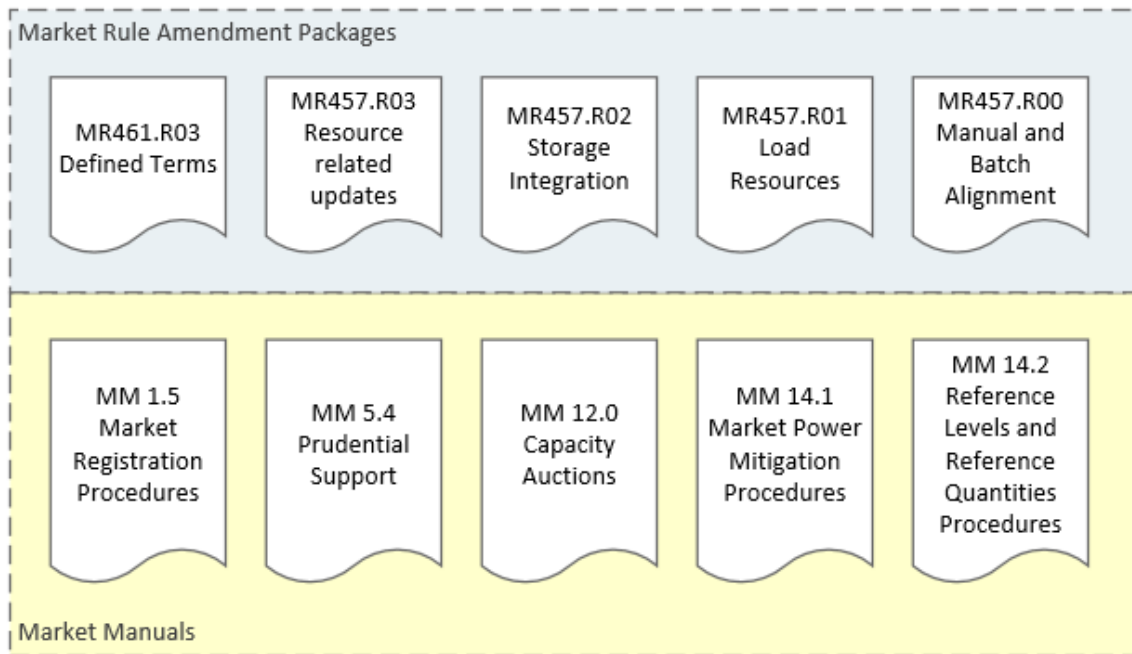
# Impacted Market Rules and Manuals

## Market Manuals

- Market Manual 1.5 Market Registration Procedures
- Market Manual 5.4 Prudential Support
- Market Manual 12.0 Capacity Auctions
- Market Manual 14.1 Market Power Mitigation Procedures
- Market Manual 14.2 Reference Level and Reference Quantity Procedures

Market manuals that describe the processes regarding authorization, prudential, facility and resource registration – including the capacity obligation requirements, and the MPM framework

# Structure of the Batch







# Interim Alignment: Key Changes

## Resource-Related Updates

# Amendment Package

## Scope

Describes the conforming changes required to align and clarify existing market rules based on the new defined term resource



## Impacted Market Rules

Chapter 1:  
Introduction  
and  
Interpretations

Chapter 2 &  
2Appx:  
Participation

Chapter 3:  
Administration  
, Supervision,  
Enforcement

Chapter 4 &  
4Appx: Grid  
Connection  
Requirements

Chapter 5:  
Power System  
Reliability

Chapter 6 &  
6Appx:  
Wholesale  
Metering

Chapter 7: System  
Operations and  
Physical Markets

Chapter 10:  
Transmission  
Service and  
Planning

# Key Changes

- Clarify whether the following obligation types are applicable to a facility or a resource:
  - registration activities such as certification, testing, inspection, ownership transfers, retiring, deregistration, and commissioning
  - sizing considerations
  - voice communication and monitoring protocols
  - ancillary service obligations
  - planned outages for wholesale consumers and distributors
  - segregated mode of operation
  - meter installations

# Key Changes

- Remove sections on transitional scheduling generator – this was a temporary obligation for the original market opening that is no longer required nor relevant
- Update to use new MRP defined terms for intermittent generation resource and boundary entity resource



# Interim Alignment: Key Changes

## Storage Integration

# Amendment Package

## Scope

Alignment of the electricity storage facility rules with the new resource terminology and updates the obligations for prudential support and registration of electricity storage resources required by the MRP



## Impacted Market Rules

Chapter 2 & 2Appx: Participation

Chapter 7: System Operations and Physical Markets

# Key Changes

- Incorporate the electricity storage resource into the calculations for prudential support obligations
- Incorporate the dispatchable electricity storage resource into the market control entity for physical withholding, and reference quantity obligations
- Clarify the electricity storage obligations of a participant, facility, resource, and unit
- Update storage withdrawing registration obligations from a non-dispatchable load resource to a price responsive load resource

# Key Changes

- Remove redundancy between resource registration and storage registration rules by referring to Ch. 7 section 2
- Merge day-ahead and real-time energy offer and bid requirements for improved clarity of obligations
- Remove reference to eligibility for Congestion Management Settlement Credit
- Improve clarity on operating reserve offer requirements for electricity storage injections and withdrawals





# Interim Alignment: Key Changes

## Load Resources

# Amendment Package

## Scope

Describes supplementary market entry obligations for the price responsive load (PRL) resource type, including data monitoring, communication, wholesale metering, and eligibility for delivering on a capacity obligation



## Impacted Market Rules

Chapter 2 & 2Appx:  
Participation

Chapter 4 & 4Appx: Grid  
Connection  
Requirements

Chapter 5: Power  
System Reliability

Chapter 6 & 6Appx:  
Wholesale Metering

Chapter 7: System  
Operations and Physical  
Markets

# Key Changes

- Clarify the monitoring and control obligations of load facility, load resource, and load equipment
- Incorporate the price responsive load resource type into the applicable registration, metering, and power system reliability obligations for consistently with the non-dispatchable load resource type
- Remove load resource characteristics of dispatchable and non-dispatchable from load facilities

# Key Changes

- Clarify the hourly demand response contributor obligations of a wholesale consumer, load facility, load resource, and load equipment
- Add a restriction with respect to the ability of dispatchable loads and price responsive loads to participate as demand response contributors



# **Interim Alignment: Key Changes**

## Market Manual and Batch Alignment

# Amendment Package

## Scope

Drafting improvements, alignment of defined terms, and corrections of typographical errors



## Impacted Market Rules

Chapter 2 & 2Appx: Participation

Chapter 7: System Operations and Physical Markets

# Key Changes

- Simplify the structure of Authorization rules and merge common obligations
- Italicize defined terms
- Update typographical errors and section references
- Move the obligation to complete the applicable registration procedures before the IESO authorizes participation in the IESO administered market from Market Manual 1.5 into the Market Rules
- Update to reflect the change of the registration term 'maximum registered dispatchable load' to 'maximum load-active power'



# Interim Alignment: Key Changes

## Market Manuals



# Market Manual Updates

## Scope

Drafting improvements, alignment of defined terms, and corrections of typographical errors  
Updated procedural obligations for electricity storage and PRL resources



## Impacted Market Manuals

Market Manual 1.5  
Market Registration  
Procedures

Market Manual 5.4  
Prudential Support

Market Manual 12.0  
Capacity Auctions

Market Manual 14.1  
Market Power  
Mitigation Procedures

Market Manual 14.2  
Reference Levels and  
Reference Quantities  
Procedures

# Key Changes

## Market Manual 1.5 Market Registration Procedures

- Update alignment with defined terms introduced in the Market Entry and MPM Batches
- Update to align and clarify existing process requirements based on the new defined term resource and the new PRL resource type
- Update the obligations for registration of electricity storage resources
- Improve drafting to clarify the authorization and registration process and to remove redundancy with the market rules

## Market Manual 5.4 Prudential Support

- Improve drafting to clarify the prudential support process and to remove redundancy with the market rules

# Key Changes

## Market Manual 12.0 Capacity Auctions

- Update alignment with defined terms introduced in the Market Entry and MPM Batches
- Update the obligations regarding PRL resource eligibility for delivering on a Virtual Hourly Demand Response (HDR) capacity obligation using the contributor management process

## Market Manual 14.1 Market Power Mitigation Procedures

- Update alignment with defined terms introduced in the Market Entry and MPM Batches

## Market Manual 14.2 Reference Levels and Reference Quantities Procedures

- Update alignment with defined terms introduced in the Market Entry and MPM Batches
- Update the obligations for electricity storage resources



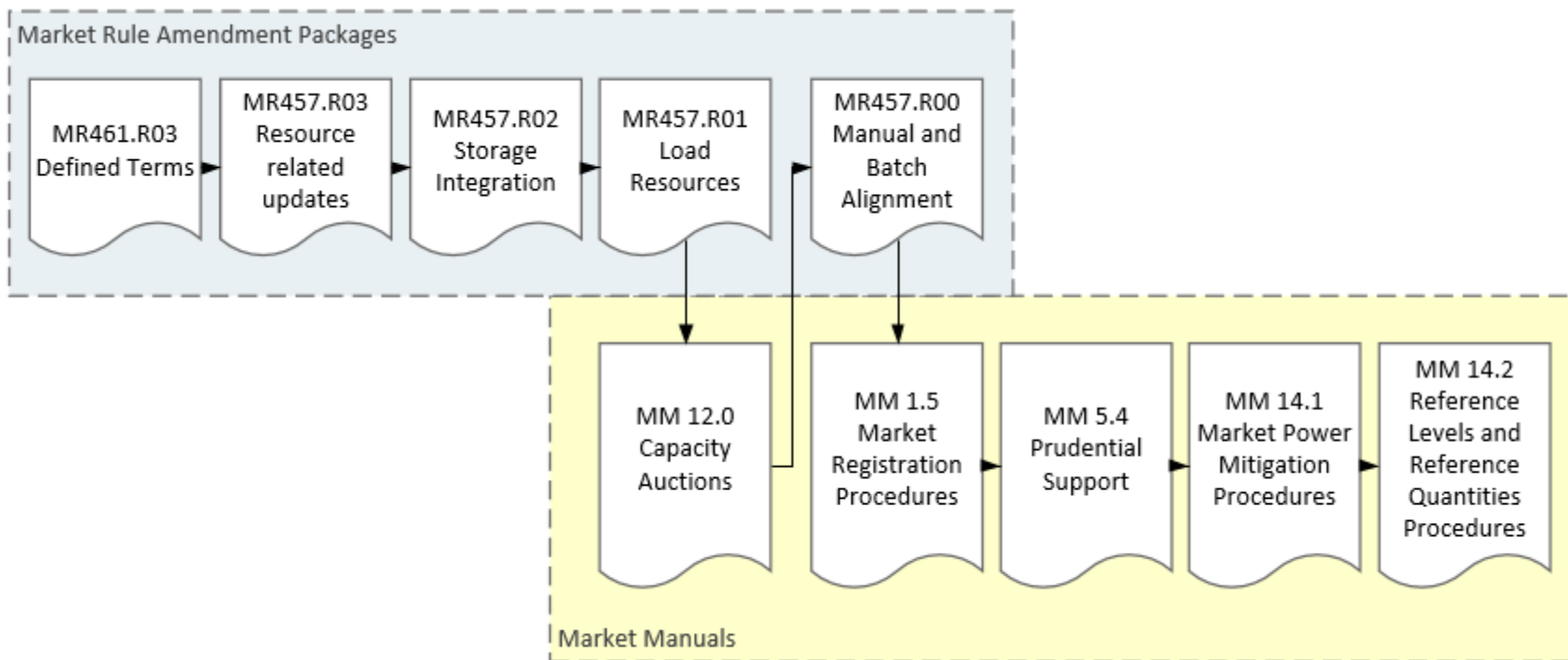
# **Interim Alignment: Next Steps**

## Reading the Batch and Providing Feedback






## How to Read the Batch

- The Interim Alignment amendment proposal has been organized into documents containing a common theme with the intention of facilitating a simplified review
- Due to the incremental nature of most of the amendments in this proposal, there is a relative lack of interaction between the amendment documents and the Market Manuals
- Readers should be aware that there are market rule sections that present different proposals in different documents based on the thematic focus of the respective document

# How to Read the Batch: Suggested Sequence



# Similar Topics in Future Batches

-  Market Entry and Prudential Security
-  Market Power Mitigation
-  Interim Alignment
-  Settlement, Metering, and Billing
-  Market and System Operations, and Calculation Engines

Distinctions of resource level Settlement calculations will be provided within the Settlements batch

Distinctions of facility and resource level operational procedures will be provided within the Market and System Operations batch

## Next Steps

- Deadline for feedback: November 8, 2022
- Settlements batch posting date: December 1, 2022



**SEPTEMBER 22, 2022**

# Update on Implementation for the Replacement of the Settlement System Project

# Purpose

- Update on implementation progress on the Replacement of the IESO's Settlement System (RSS)
- Reminder of Market Participant impacts
- Outline next steps and implementation timelines



# RSS Project Implementation

# Communications Update

- Direct outreach to all settlement contact in late August, highlighting the key tasks and how to get involved in Market Trials
- Dedicated webpage: [www.ieso.ca/en/Market-Renewal/Energy-Stream-Designs/Replacement-of-the-Settlement-System](http://www.ieso.ca/en/Market-Renewal/Energy-Stream-Designs/Replacement-of-the-Settlement-System)
  - Includes links to market rule / manual content
  - Format specifications for data files
  - Draft Settlement Calendars

# Market Trials Update

- Representatives from almost 30 market participants are currently performing tests
- Mixed results so far, with some opportunities for slight tweaks and improvements in the tool
- Testing continues until Sept 26



# Reminder: Market Participant Impacts

# Recap: What's Changing for Market Participants?

- RSS will implement a number of changes for Market Participants as listed below:
  - Enhancements to Online Settlement Form submissions
  - Enhancements to Notice of Disagreement System
  - Amendments to the Settlements Disagreement and Resettlements Process
  - NEW – Recalculated Settlement Statements (RCSS) will be introduced
  - Amended Settlement Charge Types and Equations

# Market Participant Actions Needed

- MPs should review their business processes to: incorporate the new limitation period; incorporate the new extended NoD Window; address the ability to file NoDs on RCSS; and access the new file upload capability for forms, where applicable
- MPs should review the documents posted to understand the frequency and format of the RCSS, the format specifications for the settlement statement changes



# RSS Implementation - Documentation

- Format Specifications for Settlement Statement Files and Data Files (IMP\_SPEC\_0005)
  - Introducing the concept of Recalculated Settlement Statements (RCSS), a new type of statement that will be issued for the Physical and Financial markets as part of the implementation of MR-00472
  - Highlighting changes to the content and structure of existing Preliminary and Final Settlement Statements
  - Output specifications for planned new charge types related to OR accessibility and energy breakout
- Draft Physical and Financial calendars for 2022 and 2023
  - Highlighting the addition of new RCSS statements and other related changes under MR-00472
- NOD Workflow Diagram



# Next Steps and Implementation Timelines

# RSS Implementation Timelines

- Market Trials continuing until September 26
- IESO finalizing plans to have optional training sessions in late October
  - Details will be shared with all settlement contacts directly via e-mail
- In-service for trade date of Nov 1

# RSS Implementation Timelines

<b>Timing</b>	<b>Activity</b>
October 31, 2022	Final Trade Date for use of existing Settlement System and Market Rules
November 1, 2022	RSS In-Service date (new formats will take effect for any Settlement Statements related to the Nov 1 Trade Date and beyond)  RSS Market Rule revisions take effect
November 16, 2022	First PSS Statements issued in new RSS format (for Nov 1 Trade Date)
November 30, 2022	First FSS Statements issued in new RSS format (for Nov 1 Trade Date)

---

# Thank You

[ieso.ca](http://ieso.ca)

1.888.448.7777

[customer.relations@ieso.ca](mailto:customer.relations@ieso.ca)

[engagement@ieso.ca](mailto:engagement@ieso.ca)



[@IESO Tweets](https://twitter.com/IESO)



[facebook.com/OntarioIESO](https://facebook.com/OntarioIESO)



[linkedin.com/company/IESO](https://linkedin.com/company/IESO)