

## Market Rule Amendment Proposal Form

### Part 1 - Market Rule Information

Identification No.:	MR-00461-R01
Subject:	Market Renewal Program – Market Power Mitigation: Batch 2 Definitions
Title:	Market Power Mitigation: Batch 2 Definitions
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration <input checked="" type="checkbox"/> Deletion <input checked="" type="checkbox"/> Addition
Chapter:	11
Appendix:	
Sections:	
Sub-sections proposed for amending:	
Current Market Rules Baseline:	December 1, 2021

### Part 2 - Proposal History

Version	Reason for Issuing	Version Date
1.0	Draft for Stakeholder Review	August 12, 2021
2.0	Draft for Stakeholder Review	December 17, 2021
3.0	Draft for Technical Panel Review	January 4, 2022
4.0	Publish for Stakeholder Review and Comment Re-Published for Stakeholder Review and Comment	January 20, 2022 February 15, 2022

Approved Amendment Publication Date:

Approved Amendment Effective Date:

## Part 3 - Explanation for Proposed Amendment

### Summary

The IESO proposes to amend Chapter 11 definitions in the market rules related to the Market Renewal Program (MRP) Batch 2 market rule packages (MR-00455). The proposed amendments:

1. Support changes related to MR-00455 Market Power Mitigation;
2. Include other miscellaneous amendments to defined terms;
3. Include changes to Batch 1 provisionally approved definitions.

This proposal is based on input from various stakeholder engagement initiatives for the Market Renewal Program (MRP).

Further information on MRP can be found on the [IESO's Market Renewal webpage](#).

### Background

Please refer to MRP backgrounder in [MR-00455-R00](#).

### Discussion

The following amendments to Chapter 11 market rule definitions are proposed to accompany the Batch 2 MRP market rule amendment package:

#### 1. Support changes related to MR-00455: Market Power Mitigation

The following new and amended defined terms are required to support the market power mitigation framework:

New:

- alternative intertie reference level value;
- alternative reference quantity value;
- dynamic constrained area;
- economic withholding;
- energy bid intertie reference level;
- energy offer intertie reference level;
- energy offer reference level;
- financial dispatch data parameters;
- global market power reference intertie zone;
- instance of intertie economic withholding;
- instance of physical withholding;
- intertie economic withholding;
- intertie reference level;
- intertie reference level value;
- market control entity;
- market control entity for physical withholding

- narrow constrained area;
- non-financial dispatch data parameters;
- operating reserve offer intertie reference level;
- operating reserve offer reference level;
- physical withholding;
- potential constrained area;
- preliminary view;
- reference level;
- reference level value;
- reference quantity;
- reference quantity value;
- short-run marginal benefit;
- short-run marginal cost;
- simulated as-offered energy locational marginal price;
- simulated as-offered operating reserve locational marginal price;
- simulated intertie reference level energy locational marginal price;
- simulated intertie reference level operating reserve locational marginal price;
- simulated reference quantity energy locational marginal price;
- simulated reference quantity operating reserve locational marginal price;
- speed no-load offer;
- speed no-load offer reference level;
- start-up offer;
- start-up offer reference level;
- unrestricted competition.

Non-financial dispatch data parameters:

New:

- energy per ramp hour;
- energy ramp rate reference level;
- operating reserve ramp rate reference level;
- lead time;
- thermal state;
- maximum number of starts per day;
- ramp hours to minimum loading point.

Deleted:

- Delete existing definitions of 'speed-no-load cost' and 'start-up cost' – definitions are no longer required.

Amended:

- Amend the definition of 'minimum generation block down-time' to specify that this parameter is applicable for each thermal state, and replace references to 'facility' with 'resource.'

2. Other Miscellaneous Terms

New:

- generation offer guarantee eligible resource;
- intertie border price;
- locational marginal price
- maximum daily energy limit;
- non-dispatchable generation resource;
- real-time generation offer guarantee;
- variable generation;
- variable generation resource;
- mandatory window;
- pre-dispatch calculation engine;
- real-time calculation engine.

Amended:

- Amend the definitions for 'energy market' and 'physical market' to include the day-ahead market;
- Amend the definition of 'notice of disagreement' to include a reference to section 6.6 of Chapter 9;
- Amend the definition of 'offer' to include the day-ahead market and specify that it includes dispatch data parameters that are submitted in accordance with section 3 of chapter 7;
- Amend the definition of 'pre-dispatch schedule' to specify it may include all hours of the next dispatch day as determined by the pre-dispatch calculation engine.

### 3. Changes to Batch 1 Provisionally Approved Definitions:

- Amend the definition of 'day-ahead schedule' to fix a grammatical error and to replace reference to the 'dispatch algorithm' to the new defined term 'DAM calculation engine;'
- Amend the definition of 'minimum generation block run-time' to fix a minor grammatical error and to delete 'of the associated facility' – this text is unnecessary as the parameter for minimum generation block run-time is specific to a resource.

## Part 4 - Proposed Amendment

# Definitions

*alternative intertie reference level value means the intertie reference level value determined by the IESO pursuant to section 22.19.3 of Chapter 7 to re-run the conduct test and impact test on the offers or bids that failed an impact test;*

alternative reference quantity value means the reference quantity value determined by the IESO pursuant to section 22.15.21 of Chapter 7 to re-run the conduct test and impact test on the offers that failed an impact test;

dynamic constrained area or DCA means a potential constrained area designated as a DCA pursuant to section 22.10.3 of Chapter 7;

economic withholding means exercising market power by submitting financial dispatch data parameters or non-financial dispatch data parameters outside a resource's reference level values by more than the applicable threshold;

energy bid inertia reference level means an inertia reference level for an energy bid;

energy offer inertia reference level means an inertia reference level for an energy offer;

energy offer reference level means a reference level for an energy offer;

energy market means the day-ahead market and real-time market for energy administered by the IESO pursuant to Chapter 7, in which energy offers and energy bids are cleared and a market price for energy is determined;

energy per ramp hour means the average amount of energy in MWh that a generation resource is expected to produce in each hour that is part of the ramp hours to minimum loading point;

energy ramp rate reference level means a reference level for a resource's ramp rate for energy;

financial dispatch data parameters means a subset of dispatch data that are represented as financial values and for which the IESO must determine reference levels;

generation offer guarantee eligible resource or GOG eligible resource means a generation resource that is eligible for a real-time generation offer guarantee or day-ahead market generation offer guarantee in accordance with Chapter 9;

global market power reference inertia zone means an inertia zone designated pursuant to sections 22.11.1 and 22.11.2 of Chapter 7;

instance of inertia economic withholding means a dispatch day on which at least one of a market participant's bids or offers on a boundary entity resource failed a conduct test and associated impact test used to assess inertia economic withholding in an uncompetitive inertia zone in either the day-ahead market or real-time market;

instance of physical withholding means a dispatch day on which at least one of a market participant's offers for a resource failed a conduct test and associated impact test used to assess physical withholding in either the day-ahead market or real-time market;

inertia border price or IBP means, in respect of an inertia zone, the price of energy or operating

reserve determined in the real-time market or day-ahead market in accordance with the provisions of Chapter 7. For greater clarity, the *intertie border price* does not include the *intertie congestion price*;

*intertie economic withholding* means exercising market power by submitting *offers* or *bids* on a *boundary entity resource* that are outside a *boundary entity resource's* *intertie reference level values* by more than the applicable threshold;

*intertie reference level* means an IESO-determined formula to calculate an *intertie reference level value*;

*intertie reference level value* means an IESO-determined estimate of a *dispatch data* parameter that a *market participant* would have submitted for a *boundary entity resource* if such *boundary entity resource* were subject to *unrestricted competition*;

*lead time* means the amount of time, in hours, required for a *generation resource* to complete its start-up procedures and reach its *minimum loading point* from the applicable *thermal state*;

*locational marginal price* or *LMP* means, in respect of a *pricing node*, the price of *energy* or *operating reserve* determined in the *real-time market* or in the *day-ahead market* in accordance with the provisions of Chapter 7;

*mandatory window* means the period time on a *dispatch day* that begins following the *real-time market unrestricted window* and that ends 10 minutes before the *dispatch hour*, or in the case of a *boundary entity resource*, that ends an hour and 10 minutes before the *dispatch hour*;

*market control entity* means a person or entity disclosed by a *market participant* to the IESO pursuant to section 22.9.1 of Chapter 7 of the *market rules*;

*market control entity for physical withholding* means the *market control entity* that a *market participant* has designated pursuant to sections 22.9.2-22.9.7 of Chapter 7 of the *market rules*;

*maximum daily energy limit* means a maximum amount of *energy* in MWh that may be scheduled for a *resource* within a *dispatch day*;

*maximum number of starts per day* means the number of times that a *resource* can be started within a *dispatch day*;

*minimum generation block down-time* ~~is~~ means, for each *thermal state*, the minimum time, in hours, between the time a *generation facility resource* was last at its *minimum loading point* before de-synchronization and the time the *generation facility resource* reaches its *minimum loading point* again after synchronization;

*narrow constrained area* or *NCA* means a *potential constrained area* designated as a *NCA* pursuant to section 22.10.2 of Chapter 7;

non-dispatchable generation resource means a generation resource within the IESO control area that is not subject to dispatch by the IESO and which is a self-scheduling generation resource, transitional scheduling generation resource or intermittent generation resource.

non-financial dispatch data parameters means a subset of dispatch data that are not represented as financial values and for which the IESO must determine reference levels;

notice of disagreement means a notice provided by a market participant in accordance with section 6.6 of Chapter 9 to the IESO in regard to a disagreement over a preliminary settlement statement;

offer means a statement of the quantities of a commodity that a seller will provide at different market prices for that commodity in the real-time market, the day-ahead market or the procurement market, and includes dispatch data parameters that are submitted in accordance with section 3 of Chapter 7;

operating reserve offer inertia reference level means an inertia reference level for an offer to provide operating reserve;

operating reserve offer reference level means a reference level for an offer to provide operating reserve;

operating reserve ramp rate reference level means a reference level for a resource's ramp rate for operating reserve;

physical market means a day-ahead market, real-time market and/or a procurement market administered by the IESO pursuant to Chapter 7;

physical withholding means exercising market power by submitting offer quantities of energy or operating reserve less than a resource's reference quantity value by more than the applicable threshold;

potential constrained area means an electrical area of the IESO-controlled grid that can be created when a single or multiple transmission constraints bind, leaving a reduced set of resources that can meet the load behind the transmission constraints;

pre-dispatch calculation engine means an algorithm that consists of a sequence of optimization problems solved by the IESO to determine schedules and prices over the pre-dispatch look-ahead period in accordance with Chapter 7 to meet the needs of the pre-dispatch timeframe;

pre-dispatch schedule means an hourly schedule for the remaining hours of a dispatch day and may include all hours of the next dispatch day as determined by the dispatch algorithm pre-dispatch calculation engine;

preliminary view means a statement from the IESO of the reference levels and reference

quantities that the IESO intends to register for a resource;

ramp hours to minimum loading point means a reference level for a resource's ramp hours to minimum loading point;

real-time calculation engine means an algorithm that consists of a sequence of optimization problems solved by the IESO to determine schedules and prices for the dispatch interval and the subsequent ten 5-minute intervals in accordance with Chapter 7 to meet the needs of the real-time market;

real-time generation offer guarantee means an arrangement that meets the requirements of Chapter 9;

reference level means an IESO-determined formula to calculate a reference level value;

reference level value means an IESO-determined estimate of a dispatch data parameter that a resource would have submitted if it were subject to unrestricted competition;

reference quantity means an IESO-determined formula to calculate a reference quantity value;

reference quantity value means an IESO-determined estimate for the quantity of energy or operating reserve that a market participant would have submitted for a resource if it were subject to unrestricted competition;

short-run marginal benefit means a financial benefit that accrues to a market participant with respect to a boundary entity resource that only accrues if that boundary entity resource offtakes energy and does not accrue otherwise;

short-run marginal cost means a financial cost incurred by a market participant with respect to its resource that is only incurred if that resource provides energy or operating reserve and is not incurred otherwise;

simulated as-offered energy locational marginal price (LMP) means the energy locational marginal price produced by simulating the day-ahead market or real-time market, as applicable, using the inputs used by the relevant calculation engines for the dispatch day for a resource;

simulated as-offered operating reserve locational marginal price (LMP) means the operating reserve locational marginal price produced by simulating the day-ahead market or real-time market, as applicable;

simulated inertia reference level energy location marginal price (LMP) means the energy locational marginal price at an uncompetitive inertia zone produced by simulating the day-ahead market or real-time market, as applicable;



simulated inertia reference level operating reserve locational marginal price (LMP) means the operating reserve locational marginal price at an uncompetitive inertia zone produced by simulating the day-ahead market or real-time market, as applicable;

simulated reference quantity energy locational marginal price (LMP) means the energy locational marginal price produced by simulating the day-ahead market or real-time market, as applicable, using the inputs used by the relevant calculation engines by replacing the submitted dispatch data that failed the conduct test with the applicable reference quantities and reference levels for the dispatch day for a resource;

simulated reference quantity operating reserve locational marginal price (LMP) means the operating reserve locational marginal price produced by simulating the day-ahead market or real-time market, as applicable;

speed no-load cost is the hourly value offered by the registered market participant to maintain a generation resource synchronized with zero net energy injected into the IESO-controlled grid;

speed no-load offer means the hourly dollar amount to operate a generation unit in a synchronized status while injecting no energy to the IESO-controlled grid as offered by the registered market participant.

speed no-load offer reference level means a reference level for a speed no-load offer;

start-up cost is the dollar amount offered by the registered market participant to bring an off-line resource to its minimum loading point based on the resource's thermal state;

start-up offer is the dollar amount offered by the registered market participant to bring an off-line resource to its minimum loading point based on the resource's thermal state;

start-up offer reference level means a reference level for a start-up offer;

thermal state means the state of a dispatchable generation resource, other than a quick-start resource or a nuclear generation resource, that is either a hot, warm or cold state, as the case may be, relative to the last dispatch hour at which the resource was at its minimum loading point;

unrestricted competition means a counterfactual market absent any conditions that would require testing for market power pursuant to the market rules;

variable generation means all energy that is supplied by a variable generation resource;

variable generation resource means a generation resource associated with a generation facility with a fuel type of wind or solar photovoltaic that (i) has an installed capacity of 5MW or greater, or (ii) that is directly connected to the IESO-controlled grid;

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**Changes to Definitions Provisionally Approved by the IESO Board in MR-00461-R00:  
Batch 1 Definitions:**

Provisionally approved version:

*day-ahead schedule means the hourly schedule for the 24-hour period of a next dispatch day as determined by the dispatch algorithm during the day-ahead market;*

Revised (proposed changes to the provisionally approved version shown in highlights):

*day-ahead schedule means the hourly schedule for the 24-hour period of the next dispatch day as determined by the DAM calculation engine during the day-ahead market;*

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Provisionally approved version:

*minimum generation block run-time means the number of hours, ~~specified by the market participant,~~ that a generation ~~facility resource~~ must be operating at minimum loading point; in accordance with the technical requirements of the associated facility;*

Revised:

*minimum generation block run-time means the number of hours, ~~specified by the market participant,~~ that a generation ~~facility resource~~ must be operating at minimum loading point; in accordance with its technical requirements ~~of the associated facility~~;*