Market Rule Amendment Proposal Form

Part 1 - Market Rule Information

Identification No.:	MR-00455-R00
Subject:	Market Renewal Program: Market Power Mitigation
Title:	Market Renewal Program: Market Power Mitigation
Nature of Proposal:	☒ Alteration ☒ Deletion ☒ Addition
Chapter:	3, 7, Appendix 7.6
Appendix:	Appendix 7.6 – Local Market Power: deleted in its entirety
Sections:	Chapter 3, Section 2.5 Chapter 7, Sections 3.3.9 and 22(new)
Sub-sections proposed for amending:	Chapter 3: 2.5.1A.6 (new) Chapter 7: 3.3.9.1A New: 22.1, 22.2, 22.3, 22.4, 22.5, 22.6, 22.7, 22.8, 22.9, 22.10, 22.11, 22.12, 22.13, 22.14, 22.15, 22.16, 22.17, 22.18, 22.19
Current Market Rules Baseline:	September 13, 2023~~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
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6.0	Provisionally recommended by Technical Panel; submitted for IESO Board Review	March 22, 2022
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Version	Reason for Issuing	Version Date
8.0	Re-Published for Stakeholder Review and Comment	December 2023

Approved Amendment Publication Date:

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Part 3 - Explanation for Proposed Amendment

Summary

The IESO proposes to amend the market rules to codify the Market Renewal Program's (MRP's) market power mitigation framework, which includes the following:

- Determination of reference levels and reference quantities for dispatchable resources;
- Designation of constrained areas, uncompetitive intertie zones and global market power reference intertie zones;
- Ex-ante mitigation for economic withholding;
- Ex-post mitigation for physical withholding;
- Intertie economic withholding on uncompetitive interties; and
- Mitigation for make-whole payment impact on uncompetitive interties.

Other consequential market rule amendments will be required, including the deletion of existing Appendix 7.6 – Local Market Power.

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

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 IESO proposes to include a new section 22 in Chapter 7 of the market rules to codify MRP's market power mitigation framework. The accompanying Market Power Mitigation Reader's Guide - Summary of Changes provides a summary of new section 22. Supplemental information on certain subsections in section 22 is provided below:

Section 22.1 – Reference Levels – General

- Section 22.1.1 specifies that the IESO shall determine and register, in accordance with the applicable market manual, reference levels for each dispatchable resource registered to

submit offers or bids into the energy market or offers for operating reserve into the operating reserve market. Market Manual 14.2: Reference Level and Reference Quantity Procedures specifies the process and methodologies for determining and updating reference levels and quantities.

- Section 22.1.3 obligates a market participant to provide to the IESO information and supporting documentation that the IESO may reasonably require to determine a resource's reference levels, in accordance with the applicable market manual. Market Manual 14.2 describes the documentation that may support a requested reference level.

- Section 22.1.4 obligates the IESO to make available to each market participant the reference levels that are registered and reference level values that are calculated for that market participant's resources, in accordance with the applicable market manual. Market Manual 14.2 provides details on how this information will be made available through Online IESO.

- Section 22.1.7 exempts a dispatchable resource installed pursuant to the Canadian Nuclear Safety Commission's requirement for nuclear power plants to maintain standby and emergency power systems, from the market power mitigation framework. This exempts only back-up generators that have been installed at nuclear facilities to provide standby or emergency power in order to comply with section 8.9.1 of the Canadian Nuclear Safety Commission's REGDOC-2.5.2, Design of Reactor Facilities: Nuclear Power Plants.

Section 22.2 – Reference Levels for Financial Dispatch Data Parameters

- Section 22.2.2 obligates the IESO to determine the reference levels in section 22.2.1 based on a resource's short-run marginal costs, except as set out in the applicable market manual. Market Manual 14.2 describes limited situations where certain related resources require reference levels that do not reflect their short-run marginal costs in order to be dispatched in the proper order, such as hydroelectric resources in a cascade system and steam turbines at thermal facilities where the facility does not use pseudo-unit modeling.

Section 22.3 – Reference Levels for Non-Financial Dispatch Data Parameters

- Section 22.3.2 obligates the IESO to determine the reference levels in section 22.3.1 based on a resource's operating characteristics in unrestricted competition, except as may be set out in the applicable market manual. Market Manual 14.2 describes limited situations where certain related resources require reference levels that do not reflect their operational characteristics in order to be dispatched in the proper order.

Section 22.4 – Resources with Multiple Sets of Reference Levels

- Section 22.4.2 obligates the IESO to determine two energy offer reference levels for a thermal resource (primarily fueled by natural gas, oil, steam or biomass) that is not eligible to submit start-up offers and speed-no-load offers as hourly dispatch data into the day-ahead market and real-time market, in accordance with the applicable market manual. Market Manual 14.2 specifies the methodology that the IESO uses to determine primary and secondary reference levels.

- Section 22.4.3 specifies that, for a resource that does not have multiple sets of reference levels determined pursuant to section 22.4.1 (pseudo-units) or 22.4.2 (thermal resources) and which has indicated to the IESO that is can operate according to two distinct cost profiles, the IESO shall determine a set of reference levels for each profile in accordance with the applicable market manual. Each set of reference levels shall include all reference levels applicable to the resource. Market Manual 14.2 provides how the lower-cost profile will be determined.

- Section 22.4.5 obligates the IESO to determine one operating reserve offer reference level to be used when an energy storage resource proposes to inject, and a separate operating reserve offer reference level for when it proposes to withdraw, in accordance with the applicable market manual. Market Manual 14.2 describes the methodologies the IESO uses to determine reference levels for energy storage resources.

Section 22.5 – Changes to Reference Levels

- Section 22.5.6 specifies that a market participant that has more than one set of reference levels determined for a resource pursuant to section 22.4.3 may request, in accordance with the applicable market manual, that the IESO temporarily use the set of reference levels with the highest costs for specific dispatch hours if the resource is expected to operate in a manner consistent with those reference levels for those dispatch hours. Market Manual 14.2 specifies the required timing of the request and documentation that may substantiate such a request.

Section 22.6 – Reference Quantities

- Section 22.6.1 obligates the IESO to determine and register day-ahead and real-time reference quantities for each dispatchable resource registered to submit offers into the energy or operating reserve markets, in accordance with the applicable market manual. Market Manual 14.2 describes the methodologies the IESO uses to determine reference quantities.

- Section 22.6.3 obligates market participants to provide the IESO with all information and supporting documentation that may be reasonably required to determine a resource's reference quantities, in accordance with the applicable market manual. Market Manual 14.2 describes the documentation that may support a requested reference quantity.

- Section 22.6.4 obligates the IESO to make available to each market participant the reference quantities and reference quantity values registered for that market participant's resources, in accordance with the applicable market manual. Market Manual 14.2 provides details on how this information will be made available through Online IESO.

- Section 22.6.5 allows a market participant to request that the IESO modify a resource's reference quantities, in accordance with the applicable market manual. Market Manual 14.2 specifies the supporting documentation that may support these requests.

Section 22.8 – Independent Review

- Section 22.8 specifies the process whereby a market participant may request that the IESO engage an independent expert to determine a value upon which the IESO and market participant disagree and which the IESO relied upon for the purpose of determining its preliminary view of a reference level or reference quantity. Market Manual 14.2 specifies the timelines governing an independent review.

Section 22.9 – Market Control Entities

- Section 22.9.3 obligates a market participant to designate market control entities and the market control entity for physical withholding for a resource in accordance with the applicable market manual. Market Manual 1.5: Market Registration Procedures specifies the types of market participant for which market control entities must be disclosed, and the corresponding resource types for which market control entities for physical withholding must be disclosed.

Section 22.10.1 Potential Constrained Areas (PCAs):

- Section 22.10.1.1 specifies that the IESO may designate an area as a PCA following or in advance of relevant configuration changes on the IESO-controlled grid, in accordance with the applicable market manual. Market Manual 14.1: Market Power Mitigation Procedures lists examples of the types of configuration changes to the grid that may result in the identification or revision to PCA designations.

Section 22.10.2 Narrow Constrained Areas (NCAs)

- Section 22.10.2.2 specifies that the conditions under which the IESO shall designate a PCA as an NCA. Market Manual 14.1 specifies details on when multiple transmission facilities or operating security limits (OSLs) in a PCA are binding in the same hour, that a single hour will be counted toward the conditions for NCA designation. In addition, Market Manual 14.1 provides details on NCA designations in the real-time market and updating NCA reports.

Section 22.10.3 Dynamic Constrained Areas (DCAs)

- Section 22.10.3.1 specifies the conditions under which the IESO shall designate a PCA as a DCA. Market Manual 14.1 provides details on when multiple transmission facilities or operating security limits (OSLs) in a PCA are binding in the same hour, that a single hour will be counted toward the 4% condition for DCA designation. Market Manual 14.1 also provides details on DCA designations in the real-time market.

Section 22.11 Global Market Power Reference Intertie Zones

- Section 22.11.2 obligates the IESO to designate an intertie zone as a global market power reference intertie zone, in accordance with the applicable market manual. Market Manual 14.1 specifies conditions under which the IESO may modify and evaluate the designation of global market power reference intertie zones.

Section 22.15 Ex-Post Mitigation of Physical Withholding

- Section 22.15.1 specifies that the IESO may apply conduct and impact tests in order to assess physical withholding of energy and operating reserve, as further specified in the applicable market manual. Market Manual 14.1 provides details on this process.

Section 22.17 Intertie Economic Withholding on an Uncompetitive Intertie Zone:

- Section 22.17.1 specifies that the IESO may apply conduct and impact tests in order to assess intertie economic withholding, as further specified in the applicable market manual. Market Manual 14.1 provides details on this process.

Section 22.18 Mitigation for Make-Whole Payment Impact in Uncompetitive Intertie Zones:

- Section 22.18.1 specifies that the IESO may apply conduct and impact tests to assess mitigation for make-whole payment impact on an uncompetitive intertie zone, in accordance with the applicable market manual. Market Manual 14.1 details the settlement amounts that are subject to a make-whole payment adjustment.

Section 22.19 Intertie Economic Withholding – Procedural Steps and Timelines:

- Section 22.19.8.1 specifies that a settlement charge related to an instance of intertie economic withholding shall be applied in accordance with the applicable market manual. Market Manual 14.1 details how the settlement charge will be determined.

Other Consequential Changes:

Standing Dispatch Data:

- Amend section 3.3.9.1A to specify that standing dispatch data shall be deemed to be initial dispatch data for the purposes of the market power mitigation market rules in section 22 of Chapter 7.

Notice of Dispute:

Section 2.5.1A of Chapter 3 limits the service period for disputes related to an independent review:

- Add section 2.5.1A.6 (new), Chapter 3 to specify that a notice of dispute related to an independent review conducted pursuant to section 22.8 of Chapter 7, must be served within 22 business days following the day on which the IESO registers reference levels and reference quantities for the relevant resource, following completion of the independent review process.

Appendix 7.6 – Local Market Power:

- Delete Appendix 7.6 – Local Market Power in its entirety, as it will be replaced with the market power mitigation framework in section 22 of Chapter 7.

Part 4 - Proposed Amendment

Chapter 7
22. Market Power Mitigation

22.1 Reference Levels - General

22.1.1 The *IESO* shall determine and register, in accordance with the applicable *market manual,* *reference levels* for each *dispatchable resource* registered to submit *offers* or *bids* into the *energy market* or *offers* for *operating reserve* into the *operating reserve market*.

22.1.1.1 The *IESO* shall determine a *resource's* initial *reference levels* at the request of the *market participant* that is registered as the owner of the *resource.*

22.1.1.2 The *IESO* shall determine a *resource's reference levels* in accordance with the applicable *market manual.*

22.1.2 No *registered market participant* for a *resource* that meets the requirements in section 22.1.1 shall submit *offers* or *bids* for that *resource* unless the *IESO* has determined and registered *reference levels* for that *resource*.

22.1.3 A *market participant* shall provide to the *IESO* all information and supporting documentation that the *IESO* may reasonably require to determine a *resource*'s *reference levels*, in accordance with the applicable *market manual*.

22.1.4 The *IESO* shall make available to each *market participant* the *reference levels* that are registered and *reference level values* that are calculated for that *market participant's resources,* in accordance with the applicable *market manual*.

22.1.5 The *reference level values* of each *energy offer reference level* shall be consistent with the requirements for *energy offers* in section 3.5.3.

22.1.6 The *reference level values* of each *operating reserve offer reference level* shall be consistent with the requirements for *offers* to provide *operating reserve* in section 3.6.2.

22.1.7 A *dispatchable resource* installed pursuant to the Canadian Nuclear Safety Commission's requirement for nuclear power plants to maintain standby and emergency power systems is exempt from the requirements in, and market power mitigation framework established by, this section 22.

22.2 Reference Levels for Financial Dispatch Data Parameters

22.2.1 The *IESO* shall determine the following *reference levels* for *financial dispatch data parameters,* by month or season if applicable, for each *resource* that meets the requirements in section 22.1.1:

22.2.1.1 *energy offer reference level*;

22.2.1.2   one *speed no-load offer reference level*;

22.2.1.3   one *start-up offer reference level* per *thermal state*; and

22.2.1.4   one *operating reserve offer reference level* for each class of *operating reserve* that the *resource* is registered to provide.

22.2.2   The *IESO* shall determine the *reference levels* in section 22.2.1 based on a *resource*'s *short-run marginal costs,* except as set out in the applicable *market manual.*

22.2.3   Despite section 22.2.2:

22.2.3.1   the *IESO* shall not register an *energy offer reference level* or an *operating reserve offer reference level* that produces *reference level values* that do not monotonically increase in quantity, regardless of a *resource's short-run marginal costs*; and

22.2.3.2   the *IESO* may register a *reference level* that produces *reference level values* below a *resource's short-run marginal costs* at the request of the relevant *market participant*.

22.3   Reference Levels for Non-Financial Dispatch Data Parameters

22.3.1   The *IESO* shall determine the following *reference levels* for *non-financial dispatch data parameters* in accordance with the applicable *market manual*, by month or season if applicable, for each *resource* that meets the requirements in section 22.1.1:

22.3.1.1   *energy ramp rate reference level*;

22.3.1.2   *operating reserve ramp rate reference level*;

22.3.1.3   *lead time reference levels* for each *thermal state*;

22.3.1.4   *minimum loading point reference level*;

22.3.1.5   *minimum generation block run-time reference level*;

22.3.1.6   *minimum generation block down-time reference levels* for each *thermal state*;

22.3.1.7   *maximum number of starts per day reference level*;

22.3.1.8   *ramp hours to minimum loading point reference levels* for each *thermal state*; and

22.3.1.9   minimum and maximum *energy per ramp hour reference levels* for each *thermal state*.

22.3.2   The *IESO* shall determine the *reference levels* in section 22.3.1 based on a *resource's* operating characteristics in *unrestricted competition*, except as may be set out in the applicable *market manual*.

22.3.3   If a *market participant* fails to provide the information or supporting documentation required by the *IESO* pursuant to section 22.1.3, the *IESO* may register the following values for a *reference level* determined pursuant to section 22.3.1:

    22.3.3.1   *energy ramp rate reference level*: 0.1 MW/min;

    22.3.3.2   *operating reserve ramp rate reference level*: 0.1 MW/min;

    22.3.3.3   *lead time reference levels* for each *thermal state*: 24 hours;

    22.3.3.4   *minimum loading point reference level*: the maximum installed capacity of the relevant *resource*;

    22.3.3.5   *minimum generation block run-time reference level*: 24 hours;

    22.3.3.6   *minimum generation block down-time reference level for each thermal state*: 24 hours;

    22.3.3.7   *maximum number of starts per day reference level*: 10,000 starts per day;

    22.3.3.8   *ramp hours to minimum loading point reference levels* for each *thermal state*: 24 hours;

    22.3.3.9   minimum *energy per ramp hour reference levels* for each *thermal state*: 0 MWh; and

    22.3.3.10   maximum *energy per ramp hour reference levels* for *each thermal state*: 1 MWh multiplied by the *resource's minimum loading point reference level*.

22.4   Resources with Multiple Sets of Reference Levels

22.4.1   For each *resource* that is registered as a *pseudo-unit*, the *IESO* shall determine one set of *reference levels* for the combined-cycle mode of operation and one set of *reference levels* for the single-cycle mode of operation, as applicable to that *resource*.

22.4.2   For a *resource* that has registered a primary fuel type of gas, oil, steam, or biomass, and which is not eligible to submit *start-up offers* and *speed-no-load offers* as hourly *dispatch data* into the *day-ahead market* and *real-time market*, the *IESO* shall determine two *energy offer reference levels* for that *resource* in accordance with the applicable *market manual*.

22.4.3   For a *resource* that does not have multiple sets of *reference levels* determined pursuant to section 22.4.1 or 22.4.2 and which has indicated to the *IESO* that it can operate according to two distinct cost profiles, the *IESO* shall determine a set of *reference levels* for each profile in accordance with the applicable *market manual*.

Each set of *reference levels* shall include all *reference levels* applicable to the *resource*.

22.4.4   For a *resource* with *reference levels* determined pursuant to section 22.4.3, the *IESO* shall use the set of *reference levels* associated with the profile with the lowest costs, unless the *market participant* requests otherwise pursuant to section 22.5.5 and the *IESO* has accepted the request.

22.4.5   The *IESO* shall determine one *operating reserve offer reference level* to be used when an ~~*energy*~~*electricity* storage resource proposes to inject and a separate *operating reserve offer reference level* for when it proposes to withdraw, in accordance with the applicable *market manual*.

22.5   Changes to Reference Levels

22.5.1   Once the *IESO* has registered a *reference level* for a *resource*, the *IESO* shall not change that *reference level* unless:

22.5.1.1   the *IESO* has modified the *market rules* or the applicable *market manual* such that the *reference level* determined following such modification differs from the registered *reference level*;

22.5.1.2   the *IESO* identifies a need in accordance with section 22.5.2;

22.5.1.3   the *IESO* registered that *reference level* pursuant to section ~~22.1.1 or~~ 22.3.3;

22.5.1.4   the *IESO* is required to do so pursuant to section 22.5.3;

22.5.1.5   the *market participant* for the *resource* ~~notifies~~requests the *IESO* ~~of a change to the *resource's short-run marginal costs* or operational characteristics~~review that *reference level* pursuant to section 22.5.4 and the *IESO* has accepted the ~~change~~request;

22.5.1.6   the *market participant* for the *resource* requests a temporary revision to the fuel cost component of one of the *resource*'s *reference levels* pursuant to section 22.5.5 and the *IESO* has accepted the temporary revision; or

22.5.1.7   more than two years have passed since the *reference level* was established or last updated, whichever is later.

22.5.2   The *IESO* may, at any time, review a *resource's* registered information or the supporting documentation submitted pursuant to section 22.1.3 to verify that the *resource's* reference level~~s~~ ~~determined is~~are consistent with the registered information or supporting documentation. If, as a result of such review, the *IESO* determines that the *reference level* needs to be amended to be consistent with the registered information or supporting documentation, the *IESO* shall ~~update that~~determine a revised *reference level* on a go-forward basis from a date specified by the *IESO*.

22.5.3   The *IESO* shall include *energy* and *speed no-load* costs in a *resource's start-up offer reference level* for every hour that the *resource's minimum generation block run-time* extends into the next *dispatch day* after HE 24 of the current *dispatch day*, if that *resource* is eligible to submit *start-up offers* and *speed-no-load offers* as hourly *dispatch data* into the *day-ahead market* and *real-time market*.

22.5.4   A *market participant* may, in accordance with the applicable *market manual*, request that the *IESO* review one of its *resources' reference levels* if the *market participant*:

22.5.4.1   believes the *reference level* does not accurately describe the *short-run marginal cost*s or operational characteristics of that *resource*; or

22.5.4.2   reasonably expects the *reference level* will not accurately describe the *short-run marginal costs* or operational characteristics of that *resource*.

22.5.5   A *market participant* may, in accordance with the applicable *market manual*, request a temporary revision to the fuel cost component of a *reference level* for specific *dispatch hours* if the fuel cost component in a *resource*'s *energy offer reference level*, *start-up offer reference level*, or *speed no-load offer reference level* will not reflect the *resource's short-run marginal costs* for fuel in those *dispatch hours*. Such request must include supporting documentation showing that the fuel cost component will not reflect the *resource's short-run marginal costs* for fuel in those *dispatch hours*.

22.5.6   A *market participant* that has more than one set of *reference levels* determined for a *resource* pursuant to section 22.4.3 may request, in accordance with the applicable *market manual*, that the *IESO* temporarily use the set of *reference levels* with the highest costs for specific *dispatch hours* if the *resource* is expected to operate in a manner consistent with those *reference levels* for those *dispatch hours,* and shall submit to the *IESO* documentation to substantiate the need to use those *reference levels* at the time of the request. The form and content of such documentation shall be set by the *IESO* and the *market participant* at the time a *resource's reference levels* are determined and may be amended with the agreement of the *IESO* and the *market participant*.

22.5.7   A request made pursuant to section 22.5.5 or 22.5.6 must be submitted:

22.5.7.1   for the *day-ahead market*, between the opening of and up to 30 minutes before the close of the *day-ahead market submission window*;

22.5.7.2   for the *real-time market*, no later than 150 minutes before the first *dispatch hour* in the request.

22.5.8   The *IESO* shall temporarily revise the *reference level* for the *dispatch hours* that were the subject of a request made pursuant to section 22.5.5 or 22.5.6 if the request met the applicable deadline specified in section 22.5.7.

22.5.9   The *IESO* may use the *reference level value* in force at the time of a request made pursuant to section 22.5.5 or 22.5.6 despite section 22.5.8 if, upon review, the *IESO* is not satisfied that the supporting documentation submitted demonstrates that the fuel

cost component will not reflect the *resource's short-run marginal costs* for fuel in one or more hours of a *dispatch day* or that the *resource* needed to use the set of *reference levels* associated with the profile with the highest costs. The *IESO* may also assess whether a *settlement* charge is required in accordance with MR Ch.9.

22.5.10 If the *IESO* is not satisfied that the fuel cost component will not reflect the *resource's short-run marginal costs* for fuel in one or more hours of a *dispatch day* or that the *resource* needed to use the set of *reference levels* associated with the profile with the highest costs then, despite section 22.5.8, the *IESO* may:

22.5.10.1 use the *reference level value* in force at the time of a request;

22.5.10.2 assess whether a *settlement* charge is required in accordance with MR Ch.9;

22.5.10.3 reject subsequent requests for the *resource* made outside of 8:00 to 16:00 ~~EDT~~EPT on *business days* for 20 *business* days following the *dispatch day* that was the subject of the initial request without reviewing such subsequent requests; and

22.5.10.4 reject subsequent requests for the *resource* that the *IESO* has not reviewed before:

22.5.10.4.1 the close of the *day-ahead market submission window*, for the *day-ahead market;* or

22.5.10.4.2 no later than 130 minutes before the requested *dispatch hour*, for the *real-time market*.

22.5.11 For a request made pursuant to section 22.5.6 that has been accepted by the *IESO*, the *IESO* may require that the *market participant* provide additional supporting documentation showing that the set of *reference levels* associated with the profile with the highest costs represented the relevant *resource*'s *short-run marginal costs* during the requested *dispatch hour*s within two *business days* after the *dispatch day* for which use of those *reference levels* was requested. The form and content of such documentation shall be set by the *IESO* and the *market participant* at the time the *resource's reference levels* are determined and may be amended with the agreement of the *IESO* and the *market participant*. If the *market participant* fails to provide the documentation within the specified time or if the *IESO* is not satisfied that the documentation provided shows that those *reference levels* represented the *resource's short-run marginal costs* during the requested *dispatch hours*, the *IESO* shall assess whether a *settlement* charge is required in accordance with MR Ch.9.

22.5.12 The requirement in section 22.8.1 to communicate a *preliminary view* to the relevant *market participant* prior to registering a *reference level* shall not apply to a *reference level* registered pursuant to sections 22.5.1.4 or 22.5.1.6.

22.6   Reference Quantities

22.6.1   The *IESO* shall determine and register, ~~in accordance with the applicable *market manual, day-ahead market* and *real-time market*~~ *reference quantities* for each *dispatchable resource* registered to submit *offers* into the *energy* or *operating reserve* markets.

22.6.1.1   The *IESO* shall determine a *resource*'s initial *reference quantities* at the request of the *market participant* that is registered as the owner of the *resource*.

22.6.1.2   The *IESO* shall determine a *resource's reference quantities* in accordance with the applicable *market manual*.

22.6.2   No *registered market participant* for a *resource* that meets the requirements in section 22.6.1 shall submit *offers* or *bids* for that *resource* unless the *IESO* has determined and registered *reference quantities* for that *resource*.

22.6.3   A *market participant* shall provide to the *IESO* all information and supporting documentation that the *IESO* may reasonably require to determine a *resource*'s *reference quantities*, in accordance with the applicable *market manual*.

22.6.4   The *IESO* shall make available to each *market participant* the *reference quantities* and *reference quantity values* registered for that *market participant's resources* in accordance with the applicable *market manual*.

22.6.5   A *market participant* may request that the *IESO* modify a *reference quantity* for a *resource* registered under that *market participant*, if the *market participant* believes that the *IESO's* methodology for calculating that *reference quantity* will over-estimate the quantity of *energy* or *operating reserve* that the *resource* can provide. Any request to do so must be accompanied by additional data and supporting documentation, as set out in the applicable *market manual*.

22.6.6   If the *IESO* is satisfied that the modified methodology used pursuant to section 22.6.5 more accurately describes the specific operational characteristics of the *resource*, then the *IESO* shall use such modified methodology to determine the *reference quantities* for that *resource*.

22.6.7   If a *market participant* fails to provide the information or supporting documentation required by the *IESO* pursuant to section 22.6.3, the *IESO* may register as the *resource's reference quantity*:

22.6.7.1   the maximum quantity of *operating reserve* that the *resource* is registered to *offer*, if the *resource* is a *dispatchable load* or an *electricity storage resource* that is withdrawing energy, or

22.6.7.2   the sum of the maximum active power capability of all *generation units* or *electricity storage units* associated with the *resource*, for all *resources* other than those described in 22.6.7.1.

22.7   Changes to Reference Quantities

22.7.1   Once the *IESO* has registered a *reference quantity* for a *resource*, the *IESO* shall not change that *reference quantity* unless:

22.7.1.1   the *IESO* has modified the *market rules* or the applicable *market manual* such the *reference quantity* determined following such modification differs from the registered *reference quantity*;

22.7.1.2   the *IESO* identifies a need in accordance with section 22.7.2;

22.7.1.3   the *market participant* for the *resource* notifies the *IESO* of a change to the *resource's* operational characteristics in accordance with section 22.5.4 or section 22.7.3 and the *IESO* has accepted the change; or

22.7.1.4   more than two years have passed since the *reference quantity* was established or last updated, whichever is later.

22.7.2   The *IESO* may, at any time, review the supporting documentation submitted pursuant to section 22.6.3 to verify that the *reference quantity* determined is consistent with the supporting documentation. If, as a result of such review, the *IESO* determines that the *reference quantity* needs to be amended to be consistent with the supporting documentation, the *IESO* shall update that *reference quantity* on a go-forward basis from a date specified by the *IESO*.

22.7.3   A *market participant* may request that the *IESO* review one of its *resources' reference quantities* if the *market participant*:

22.7.3.1   believes the *reference quantity* does not accurately describe the operational characteristics of that *resource*; or

22.7.3.2   reasonably expects the *reference quantity* will not accurately describe the operational characteristics of that *resource*.

22.8   Independent Review

22.8.1   Prior to registering a *reference level* or *reference quantity* for a *resource*, the *IESO* shall communicate a *preliminary view* to the relevant *market participant*.

22.8.1.1   The *IESO* shall register the *reference levels* and *reference quantities* contained in the *preliminary view* on the 11th *business day* after the date of the *preliminary view*, unless the *market participant*:

i.   makes a request pursuant to section 22.8.2;

ii.   requests that the *IESO* delay registration until a date specified by the *market participant* and the *IESO* has approved such request; or

iii.   requests that the *IESO* register the *reference levels* and *reference quantities* in the *preliminary view* at an earlier date, in which case the

22.8.1.2 A *market participant* shall not make a request pursuant to section 22.8.2 if the *IESO* has registered the *reference levels* and *reference quantities* contained in the *preliminary view* pursuant to section 22.8.1.1.

22.8.2 A *market participant* may request that the *IESO* engage an expert independent of the *IESO* and the *market participant* to determine a value upon which the *IESO* and *market participant* disagree and which the *IESO* relied upon for the purpose of determining its *preliminary view* of a *reference level* or *reference quantity*. The *IESO* shall not register a *reference level* or *reference quantity* that is the subject of an expert determination except in accordance with this section 22.8.

22.8.3 The *IESO* shall request proposals to conduct a determination following a request made pursuant to section 22.8.2, as specified in the applicable *market manual*. If no responses to the request for proposals are received, the *IESO* shall register the applicable *reference levels* and *reference quantities* communicated in the *preliminary view*. A *market participant* may request a determination no more frequently than once every 60 days until such time as the *IESO* receives a response to the request for proposals, despite any time to do so specified in the applicable *market manual*.

22.8.4 The *IESO* shall provide the *market participant* with an estimate of the cost of the determination, as specified in the applicable *market manual*. If the *market participant* has not notified the *IESO* that it accepts the cost estimate and wishes to proceed with the determination within five *business days* of the *IESO's* notification, the *IESO* shall terminate the determination and register the applicable *reference levels* and *reference quantities* in the *preliminary view*.

22.8.5 The *IESO* shall, in accordance with and as further prescribed in the applicable *market manual*, provide an expert engaged pursuant to this section 22.8 with the following:

22.8.5.1 a statement of the values that are in dispute between the *IESO* and *market participant* and which the expert is required to determine;

22.8.5.2 the relevant *market rules*, *market manuals* and other documents setting out the values and supporting documents and information required to be submitted by *market participants* for the purpose of the *IESO's* determination of *reference levels* or *reference quantities*;

22.8.5.3 the documents and information relevant to the expert's determination of the disputed values, as prescribed by the applicable *market manual*; and

22.8.5.4 other relevant documents and information as may be agreed upon by the *IESO* and the *market participant*, including any documents or information that may be requested by the expert.

22.8.6 The *IESO* shall provide the *market participant* with a copy of the expert's determination following receipt thereof.

22.8.7   The *IESO* shall, subject to the *IESO*'s and *market participant*'s rights and obligations under sections 22.8.8, 22.8.10, and 22.8.13, register a *reference level* or *reference quantity* that is consistent with the expert's determination and the *market rules*, in accordance with the applicable *market manual*. If an expert has determined multiple values, the *IESO*~~IESO~~ rejecting a value pursuant to section 22.8.10 shall not affect the requirement in this section 22.8.7 that the *IESO*~~IESO~~ register *reference levels* or *reference quantities* consistent with the values that were not rejected.

22.8.8   The *IESO* or *market participant* may request that the expert correct any typographical error, error of calculation or similar error in the expert's determination of any values, or request that the expert reconsider and vary the expert's determination of any values on the grounds that:

    22.8.8.1   the expert did not determine certain values that the expert was requested to determine; or

    22.8.8.2   the expert did not provide reasons, or adequate reasons, for his or her determination of certain values.

22.8.9   A request made pursuant to section 22.8.8 shall be made in accordance with the applicable *market manual*.

22.8.10   The *IESO* shall, within 15 *business day*s of receiving the expert's determination, or within 10 *business days* of receiving the expert's further determination following a request made pursuant to section 22.8.8, if applicable, reject the expert's determination of any value if:

    22.8.10.1   the expert's determination of that value contains a manifest error that materially affected the expert's determination of such value; or

    22.8.10.2   the expert's determination of that value, if accepted and implemented by the *IESO* for the purpose of calculating and registering the applicable *reference level* or *reference quantity*, would require the *IESO*~~IESO~~ to breach the *market rules*.

22.8.11   If the *IESO* rejects any values pursuant to section 22.8.10, the *IESO* shall~~,~~:

    22.8.11.1   notify the relevant *market participant* within 15 *business days* of receiving a determination that it has rejected a determination and specify the reason for the rejection; and

    22.8.11.2   within 10 *business days* of its rejection, take steps pursuant to sections 22.8.3 to 22.8.5 to procure a new expert to determine the rejected values. The *IESO* shall not be required to procure a new expert if it registers *reference levels* or *reference quantities* pursuant to sections 22.8.12 or 22.8.13. A *market participant* disputing the *IESO's* rejection shall not stay the requirement that the *IESO* procure a new expert.

22.8.12   A *market participant* that has requested a determination pursuant to section 22.8.2 may request that the *IESO* discontinue the process with respect to a *reference level* or

reference quantity at any time prior to receiving the expert's determination. In such cases, the *IESO* shall register the relevant *reference level* or *reference quantity* in the *preliminary view*.

22.8.13   Despite sections 22.8.7 and 22.8.10, the *IESO* and a *market participant* may, at any time, agree to discontinue the determination process and register the *reference levels* or *reference quantities* that the *market participant* originally requested.

22.8.14   The *IESO* may apply a *settlement* charge to the *market participant* equal to the amount charged to the *IESO* by the expert. The *IESO* shall not apply a *settlement* charge for subsequent determinations conducted as a result of the *IESO* rejecting a finding pursuant to section 22.8.10.

22.9   Market Control Entities

22.9.1   The obligations in this section 22.9 apply to a *market participant* that is registered with the *IESO* as:

    22.9.1.1   the owner of a:

        22.9.1.1.1 *generation resource*;

        22.9.1.1.2 *dispatchable load*;

        22.9.1.1.3 *load resource* participating as a *price-responsive load*; or

        22.9.1.1.4 *electricity storage resource*;

    22.9.1.2   an *energy trader*; or

    22.9.1.3   a *virtual trader*.,

    and a reference to a *market participant* in sections 22.9.2 and section 22.9.3 includes a person who has filed an *application for authorization to participate* and indicated its intent to register as: (i) the owner of a *resource* type set out in section 22.9.1.1.1, 22.9.1.1.2, or 22.9.1.1.4; (ii) the owner of a *load resource* that will participate as a *price responsive load;* (iii) an *energy trader*; or (iv) a *virtual trader*.

22.9.2   A *market participant* shall disclose to the *IESO* the name, address, relationship to the *market participant*, and, if applicable, jurisdiction of formation, of each person or entity that meets any of the following criteria:

    22.9.2.1   a person or entity that ultimately beneficially owns, directly or indirectly, whether through one or more subsidiaries or otherwise, voting securities carrying more than 10 per cent of the voting rights attached to all voting securities of the *market participant*;

    22.9.2.2   a person or entity that is ultimately able to elect or appoint, directly or

indirectly, whether through one or more subsidiaries or otherwise, at least 10 per cent of the directors of the *market participant*, other than ex officio directors;

22.9.2.3   a person or entity that is a partner in or of the *market participant*;

22.9.2.4   a person or entity that has a substantial beneficial interest in the *market participant* or that serves as a trustee in the *market participant*, if the *market participant* is a trust;

22.9.2.5   a person or entity that is an *affiliate* of the *market participant*, excluding *affiliates* of the *market participant* that are controlled by the *market participant;*

22.9.2.6   a person or entity that ultimately holds, directly or indirectly, whether through one or more subsidiaries or otherwise, an interest in the *market participant* that entitles the entity or individual to receive more than 10 per cent of the profits of the *market participant,* if the *market participant* is an entity other than a corporation; or

22.9.2.7   a person or entity that has any form of agreement with the *market participant* whereby: (i) the *market participant* confers the right or ability to determine a *resource's energy offers* and *bids* or *offers* for *operating reserve* to that person or entity or the ability to follow the *dispatch* instructions given to the *resource*; and (ii) that person or entity is entitled to receive more than 10 per cent of the amounts paid to the *market participant* in respect of all *energy* and *operating reserve* transacted through the *energy* and *operating reserve markets* for a *resource*.

22.9.3   A *market participant* shall designate one of the persons or entities disclosed pursuant to section 22.9.2 as the *market control entity for physical withholding* for each *dispatchable generation resource*, *dispatchable electricity storage resource* and *dispatchable load resource* for which the *market participant* is registered with the *IESO* as the owner, in accordance with sections 22.9.3-22.9.7.

22.9.3.1   A *market participant* shall designate *market control entities* and the *market control entity for physical withholding* for a *resource* in accordance with the applicable *market manual*.

22.9.4   A *market participant* shall designate a *market control entity* as the *market control entity for physical withholding* for a *resource* if the *market participant* has any form of agreement with that *market control entity* whereby: (i) the *market participant* confers the right or ability to determine the *resource's energy offers* and *bids* or *offers* for *operating reserve* to that *market control entity*; and (ii) that *market control entity* is entitled to receive more than 50 per cent of the amounts paid to the *market participant* in respect of all *energy* and *operating reserve* transacted through the *energy* and *operating reserve* markets by the *resource*.

22.9.5   If none of the *market participant's market control entities* meets the criteria in section 22.9.4, the *market participant* shall designate a *market control entity* as the *market control entity for physical withholding* for a *resource* as follows:

22.9.5.1   If the *market participant* is a corporation with share capital, then the *market participant* shall designate as the *resource's market control entity for physical withholding* the person or entity that ultimately holds, directly or indirectly, whether through one or more subsidiaries or otherwise, otherwise than by way of security only, by or for the benefit of that person or entity securities of the *market participant* that are attached to more than 50% of the votes that may be cast to elect directors of the *market participant* and the votes attached to those securities are sufficient, if exercised, to elect a majority of the directors of the *market participant*.

22.9.5.2   If the *market participant* is a corporation without share capital, then the *market participant* shall designate as the *resource's market control entity for physical withholding* the person or entity that ultimately, directly or indirectly, whether through one or more subsidiaries or otherwise, is able to elect or appoint a majority of the directors of the *market participant*, other than ex officio directors.

22.9.5.3   If the *market participant* is an entity other than a corporation, then the *market participant* shall designate as the *resource's market control entity for physical withholding* the person or entity that ultimately holds, directly or indirectly, whether through one or more subsidiaries or otherwise, an interest in the *market participant* that entitles that person or entity to receive more than 50 per cent of the profits of the *market participant*.

22.9.6   If none of the *market participant's market control entities* meets the criteria in sections 22.9.4 to 22.9.5 and the *market participant* is any type of partnership, then the *market participant* shall designate as the *resource's market control entity for physical withholding* the partner that is entitled to the greatest share of the profits of the *market participant*.

22.9.7   If none of the *market participant's market control entities* meets the criteria in sections 22.9.4 to 22.9.6 then the *market participant* shall designate itself as the *resource's market control entity for physical withholding*.

22.10   Designation of Constrained Areas

22.10.1   Potential Constrained Areas

22.10.1.1   The *IESO* may designate an area as a *potential constrained area* following or in advance of relevant configuration changes on the *IESO-controlled grid*, in accordance with the applicable *market manual*.

22.10.1.2   ~~Potential~~The *IESO* shall assess *potential* constrained area designations ~~shall be assessed~~ on at least an annual basis.

22.10.2   Narrow Constrained Areas

22.10.2.1   The *IESO* shall *publish* a list of *narrow constrained areas*, along with each of the *resources* and the transmission constraints within each *narrow constrained area*, at least once per year, in accordance with the applicable *market manual*.

22.10.2.2   The *IESO* shall designate a *potential constrained area* as a *narrow constrained area* if during an *IESO*-determined study period, the *potential constrained area* was import constrained in more than 4% of the hours in the previous 365 days in either the *day-ahead market* or the *real-time market*, as further specified in the applicable *market manual*.

22.10.2.3   The *IESO* may update the list of *resources* or the name of any system element in a *narrow constrained area* in accordance with the applicable *market manual*.

22.10.2.4   Designations made pursuant to section 22.10.2.1 and changes *published* under section 22.10.2.3 shall come into effect in accordance with the applicable *market manual*.

22.10.3   Dynamic Constrained Areas

22.10.3.1   The *IESO* shall designate a *potential constrained area* as a *dynamic constrained area* if the *potential constrained area:* (i) is not currently designated as a *narrow constrained area*; and (ii) was import constrained in more than 15% of the previous 120 hours in either the *day-ahead market* or the *real-time market*, as further specified in the applicable *market manual*. The designation shall come into effect no sooner than four hours following the criteria above being met.

22.10.3.2   The *dynamic constrained area* designation shall remain in effect until: (i) 120 *dispatch hours* have passed since the start of the *dispatch hour* in which the designation came into effect; and (ii) the *potential constrained area* was import constrained in fewer than 15% of the previous 120 hours in both the *day-ahead market* and the *real-time market* from the start of the current hour.

22.10.3.3   The *IESO* shall assess a *dynamic constrained area* designation every day prior to the *dispatch day* for the *day-ahead market* and every hour for the *real-time market*.

22.10.3.4   The *IESO* shall *publish* a list of *dynamic constrained area*s, along with each of the *resources* and the transmission constraints within each *dynamic constrained area*.

22.11   Global Market Power Reference Intertie Zones

22.11.1   The *IESO* may designate an *intertie zone* as a *global market power reference intertie zone* if:

22.11.1.1   the *intertie* associated with that *intertie zone* connects Ontario directly to another wholesale electricity market; and

22.11.1.2   the *intertie zone* is able to provide effective competitive discipline for *market participant* behaviour.

22.11.2   The *IESO* shall designate an *intertie zone* as a *global market power reference intertie zone* in accordance with the applicable *market manual*.

22.11.3   The *IESO* shall *publish* the *intertie zones* designated as *global market power reference intertie zones* following a change to an *intertie zone's* designation status. A change to an *intertie zone's* designation status shall take effect no earlier than five *business days* following *publication*.

22.12   Uncompetitive Intertie Zones

22.12.1   The *IESO* shall designate an *intertie zone* as uncompetitive if at least one of the following conditions is true for that *intertie zone*:

22.12.1.1   a single *market participant* received at least ninety percent of the *day-ahead market* scheduled *energy* withdrawals or injections over *boundary entity resources* connected to that *intertie zone* scheduled in the previous calendar quarter; or

22.12.1.2   the *IESO* reasonably determines that effective competition in that *intertie zone* is or is expected to be restricted.

22.12.2   The *IESO* shall designate an *intertie zone* as uncompetitive in accordance with the applicable *market manual*.

22.12.3   The *IESO* may remove the designation of an *intertie zone* as uncompetitive if the *intertie zone* no longer meets any of the criteria specified in section 22.12.1.

22.12.4   The *IESO* shall *publish* the *intertie zones* designated as uncompetitive following a change to an *intertie zone's* designation status. A change to an *intertie zone's* designation status shall take effect no earlier than two days following *publication*.

22.12.5   The *IESO* shall review the *intertie zones* designated as uncompetitive:

22.12.5.1   within the first five *business days* of each calendar quarter to determine whether either of the conditions in section 22.12.1 has been met; and

22.12.5.2   when a new *intertie zone* is added to the *IESO-administered market*.

22.12.6   The *IESO* may review the *intertie zones* designated as uncompetitive when a material change in market trade, structure, or regulation of external markets has occurred in the neighbouring *control area*.

22.13 Ex-Ante Validation of Non-Financial Dispatch Data Parameters

22.13.1 The *IESO* shall validate a *dispatchable resource*'s *non-financial dispatch data parameters* against its corresponding *reference level values* at the time the *registered market participant* for a *resource* submits a *non-financial dispatch data parameter* by evaluating whether the *resource*'s submitted *non-financial dispatch data parameter* exceeds the corresponding *reference level value*. A submitted *non-financial dispatch data parameter* shall be rejected if it violates any of the following:

22.13.1.1 *minimum generation block run-time* is greater than the ~~lesser~~minimum of:

22.13.1.1.1   100% above the *reference level value*; or

22.13.1.1.2   three hours above the *reference level value*;

22.13.1.2 *minimum generation block down-time* is greater than the ~~lesser~~minimum of:

22.13.1.2.1   100% above the *reference level value* for the hot *thermal state*; or

22.13.1.2.2   three hours above the *reference level value* for the hot *thermal state*;

22.13.1.3 *minimum generation block down-time* is less than:

22.13.1.3.1   50% of the *reference level value* for the warm *thermal state*; or

22.13.1.3.2   the *reference level* value minus three hours for the warm *thermal state*;

22.13.1.4 *minimum generation block down-time* is less than:

22.13.1.4.1   50% of the *reference level value* for the cold *thermal state*; or

22.13.1.4.2   the *reference level* value minus three hours for the cold *thermal state*;

22.13.1.5 *minimum loading point* is greater than 100% above the *reference level value*;

22.13.1.6 *energy* ramp rate *offered* is less than 50% of the *reference level value*;

22.13.1.7 *operating reserve* ramp rate *offered* is less than 50% of the *reference level value*;

22.13.1.8 *lead time* is greater than the ~~lesser~~ minimum of:

22.13.1.8.1   100% above the *reference level value* for any *thermal state;* or

22.13.1.8.2   three hours above the *reference level value* for any *thermal state;, or*

22.13.1.9   the summed ~~submitted~~ *lead time* ~~across~~ of all *thermal states* is greater than six hours above the ~~total~~ summed *reference level values* ~~across~~ of all *thermal states*;

22.13.1.910   *ramp hours to minimum loading point* is greater than the ~~lesser~~ minimum of:

22.13.1.10.1   100% above the *reference level value* for any *thermal state*; or

22.13.1.10.2   three hours above the *reference level value* for any *thermal state*;

22.13.1.110   *energy per ramp hour* is greater than:

22.13.1.11.1   50% above the upper bound *reference level value* for any *thermal state*; or

22.13.1.11.2   50% below the lower bound *reference level value* for any *thermal state*; or

22.13.1.121   *maximum number of starts per day* is 50% less than the *reference level value* or less than one.

22.14   Ex-Ante Mitigation of Economic Withholding

22.14.1   The *IESO* shall, for *dispatchable resources*, apply a conduct test and impact test to assess *economic withholding* of *energy* and *operating reserve* in any *dispatch hour* using *day-ahead market* and *real-time market reference levels* in the processes to determine *day-ahead schedules* and *pre-dispatch schedules*, respectively, as set out in Appendix 7.5 and Appendix 7.5A of the *market rules*.

22.15   Ex-Post Mitigation of Physical Withholding

22.15.1   The *IESO* may apply the conduct tests and impact tests specified in this section 22.15, and as further specified in the applicable *market manual,* to assess *physical withholding* of *energy* and *operating reserve*.

22.15.2   The *IESO* may assess a *dispatchable resource* for *physical withholding* pursuant to this section 22.15 and may cease an assessment of *physical withholding* at any time.

22.15.3   When comparing an *offer* to the relevant *reference quantity value* pursuant to section 22.15.4, 22.15.5, 22.15.11, or 22.15.13, the *IESO* shall use the highest MW quantity value from that *offer*.

Conditions – Energy

22.15.4   The *IESO* may test an *energy offer* submitted by the *registered market participant* for a *resource* to assess *physical withholding* of *energy* if the *resource*:

22.15.4.1   had a *day-ahead market* or a *real-time market locational marginal price* for *energy* greater than $25/MWh and can supply at least 10 MW of *energy* based on that *resource's* maximum resource active power capability; or

22.15.4.2   had a *day-ahead market* or a *real-time market locational marginal price* for *energy* greater than $25/MWh and the *market control entity for physical withholding* for that *resource* was designated as the *market control entity for physical withholding* for *resources* that can supply at least 10 MW of *energy* in aggregate based on those *resources'* maximum resource active power capabilities,

and the *resource* met at least one of the following conditions in the *day-ahead market calculation engine* or the ~~one~~ hour-ahead run of the *pre-dispatch calculation engine*:

22.15.4.3   the *energy offer* was below the *resource's reference quantity value* and the *resource* was part of a *narrow constrained area* where at least one of the transmission constraints that defines that *narrow constrained area* was binding;

22.15.4.4   the *energy offer* was below the *resource's reference quantity value* and the *resource* was part of a *dynamic constrained area* where at least one of the transmission constraints that defines that *dynamic constrained area* was binding;

22.15.4.5   the *energy offer* was below the *resource's reference quantity value* and the *resource* had a positive congestion component greater than $25/MWh; or

22.15.4.6   the *energy offer* was below the *resource's reference quantity value* and the *resource* could have met incremental load within Ontario when the conditions for testing for global market power for *energy* price impact set out in Appendix 7.5 and Appendix 7.5A were met.

Conduct Test – Energy

22.15.5   The *IESO* may apply a conduct test for *physical withholding* to an *energy offer* of the *registered market participant* for a *resource* that met the requirements set out in section 22.15.4. An *energy offer* shall fail the conduct test for *physical withholding* if:

22.15.5.1   that *resource* met the conditions in section 22.15.4.3 or 22.15.4.4 and:

22.15.5.1.1 the *registered market participant* for that *resource* submitted an *energy offer* less than its *reference quantity value* by greater than the lesser of 2% or 5 MW; or

22.15.5.1.2 that *resource* and every other *resource*: (i) that shares a *market control entity for physical withholding* that met the same condition in section 22.15.4.3 or 22.15.4.4, but (ii) that did not meet the condition in section 22.15.5.1.1, submitted *energy offers* that were, in the aggregate, greater than 5 MW less than those *resources'* aggregate *reference quantity values*; or

22.15.5.2 that *resource* met the condition in section 22.15.4.5 or 22.15.4.6 and:

22.15.5.2.1 the *registered market participant* for that *resource* submitted an *energy offer* less than its *reference quantity value* by greater than the lesser of 10% or 100 MW; or

22.15.5.2.2 that *resource* and every other *resource*: (i) that shares a *market control entity for physical withholding* that met the same condition in section 22.15.4.5 or 22.15.4.6, but (ii) that did not meet the condition in section 22.15.5.2.1, submitted *energy offers* that were, in the aggregate, less than those *resources'* aggregate *reference quantity values* by greater than the lesser of 5% or 200 MW.

22.15.6 A *registered market participant* for a *resource* that did not submit an *energy offer* for a *dispatch hour* in the *day-ahead market* or *real-time market* shall be deemed to have submitted an *energy offer* of 0 MW in that market for the purposes of the conduct test set out in this section.

22.15.7 If a *resource* met more than one of the conditions in sections 22.15.4.3 to 22.15.4.6, the *IESO* shall apply the conduct test for *physical withholding* with the most restrictive of the conduct thresholds set out in section 22.15.5.

Impact Test – Energy

22.15.8 The *IESO* may apply an impact test for *physical withholding* to the *energy offers* of the *registered market participant* for a *resource* that had an *energy offer* fail any of the conduct tests in section 22.15.5. An *energy offer* shall fail the impact test if:

22.15.8.1 the *resource* met the condition in section 22.15.4.3 and the *resource*'s *simulated as-offered energy locational marginal price* is greater than the *resource*'s *simulated reference quantity energy locational marginal price* by greater than the lesser of 50% or $25/MWh;

22.15.8.2   the *resource* met the condition in section 22.15.4.4 and the *resource*'s *simulated as-offered energy locational marginal price* is greater than the *resource*'s *simulated reference quantity energy locational marginal price* by greater than the lesser of 50% or $25/MWh;

22.15.8.3   the *resource* met the condition in section 22.15.4.5 and the *resource*'s *simulated as-offered energy locational marginal price* is greater than the *resource*'s *simulated reference quantity energy locational marginal price* by greater than the lesser of 100% or $50/MWh; or

22.15.8.4   the *resource* met the condition in section 22.15.4.6 and the *resource*'s *simulated as-offered energy locational marginal price* is greater than the *resource*'s *simulated reference quantity energy locational marginal price* by greater than the lesser of 100% or $50/MWh.

22.15.9   The *IESO* shall calculate a *resource*'s *simulated as-offered energy locational marginal price* using the same inputs as those used by the relevant calculation engine to calculate that *resource*'s *energy locational marginal price*.

22.15.10   The *IESO* shall calculate a *resource*'s *simulated reference quantity energy locational marginal price* by using the same inputs as those used by the relevant calculation engine to calculate the *resource's simulated as-offered energy locational marginal price* and the applicable *reference quantities* and *reference levels*.

Conditions – Operating Reserve

22.15.11   The *IESO* may test an *offer* for *operating reserve* of the *registered market participant* for a *resource* for *physical withholding* of *operating reserve* if the *resource*:

22.15.11.1   had a *day-ahead market* or a *real-time market locational marginal price* for *operating reserve* greater than $5/MW and can supply at least 10 MW of *operating reserve* based on that *resource's* maximum resource active power capability or its maximum load active power; or

22.15.11.2   had a *day-ahead market* or a *real-time market locational marginal price* for *operating reserve* greater than $5/MW and the *market control entity for physical withholding* for the *resource* was designated as the *market control entity for physical withholding* for *resources* that can supply at least 10 MW of *operating reserve* in aggregate based on those *resources'* maximum resource active power capabilities or its maximum load active power,

and the *resource* met at least one of the following conditions in the *day-ahead market calculation engine* or the ~~one~~ hour-ahead run of the *pre-dispatch calculation engine*:

22.15.11.3   the *offer* for *operating reserve* was below the *resource's reference quantity value* and the *operating reserve locational marginal price* for the *resource* was greater than $15/MW; or

22.15.11.4 the *offer* for *operating reserve* was below the *resource's reference quantity value* and the *resource* was located in a reserve area where the value of a minimum constraint for a class of *operating reserve* that the *resource* is eligible to *offer* was greater than 0 MW.

Conduct Test – Operating Reserve

22.15.12 The *IESO* may apply a conduct test for *physical withholding* to the *offers* for *operating reserve* of the *registered market participant* for a *resource* that meet the requirements set out in section 22.15.11. An *offer* for *operating reserve* shall fail the conduct test for *physical withholding* if:

22.15.12.1 that *resource* met the conditions in section 22.15.11.3, and:

22.15.12.1.1 the *registered market participant* for that *resource* submitted an *offer* for *operating reserve* less than its *operating reserve reference quantity* by greater than the lesser of 10% or 100 MW; or

22.15.12.1.2 that *resource* and every other *resource*: (i) that shares a *market control entity for physical withholding* that met the same condition in section 22.15.11.3, but (ii) that did not meet the condition in section 22.15.12.1.1, submitted *offers* for *operating reserve* that were, in the aggregate, less than those *resources'* aggregate *reference quantity values* by greater than the lesser of 5% or 200 MW; or

22.15.12.2 that *resource* met the conditions in section 22.15.11.4 and:

22.15.12.2.1 the *registered market participant* for that *resource* submitted an *offer* for *operating reserve* less than the applicable *reference quantity* by greater than the lesser of 2% or 5 MW; or

22.15.12.2.2 that *resource* and every other *resource*: (i) that shares a *market control entity for physical withholding* that met the same condition in section 22.15.11.4, but (ii) that did not meet the conditions in section 22.15.12.2.1, submitted *offers* for *operating reserve* that were, in the aggregate, lower than 5 MW less than those *resources'* aggregate *reference quantity values*.

22.15.13 Despite section 22.15.3, a *registered market participant* for a *resource* that does not submit an *offer* for *operating reserve* of a class that it is eligible to *offer* for a *dispatch hour* in the *day-ahead market* or *real-time market* shall be deemed to have submitted an *offer* for *operating reserve* of 0 MW for that class in that market for the purposes of the conduct test set out in this section.

22.15.14 If a *resource* meets more than one of the conditions in sections 22.15.11.1 and 22.15.11.2, the *IESO* shall apply the conduct test for *physical withholding* using the most restrictive conduct thresholds set out in section 22.15.12.

Impact Test – Operating Reserve

22.15.15 The *IESO* may apply an impact test for *physical withholding* to a *resource* that had an *offer* for *operating reserve* fail any of the conduct tests applied pursuant to section 22.15.12. An *offer* for *operating reserve* shall fail the impact test if:

22.15.15.1 the *resource* met the condition in section 22.15.11.3 and the *resource*'s *simulated as-offered operating reserve locational marginal price* is greater than the *resource*'s *simulated reference quantity operating reserve locational marginal price* by greater than the lesser of 50% or $25/MW; or

22.15.15.2 the *resource* met the condition in section 22.15.11.4 and the *resource*'s *simulated as-offered operating reserve locational marginal price* is greater than the *resource*'s *simulated reference quantity operating reserve locational marginal price*.

22.15.16 The *IESO* shall calculate a *resource*'s *simulated as-offered operating reserve locational marginal price* using the same inputs as those used by the relevant calculation engine to calculate that *resource*'s *operating reserve locational marginal price*.

22.15.17 The *IESO* shall calculate a *resource*'s *simulated reference quantity operating reserve locational marginal price* by using the same inputs as those used by the relevant calculation engine to calculate the *resource's simulated as-offered operating reserve locational marginal price* and the applicable *reference quantities* and *reference levels*.

Physical Withholding - Procedural Steps and Timelines

22.15.18 If an *energy offer* or *offer* for *operating reserve* fails an impact test for *physical withholding* applied pursuant to section 22.15.8 or 22.15.15, the *IESO* shall issue a first notice of *physical withholding* to the relevant *market participant* communicating a finding of an *instance of physical withholding*.

22.15.~~19~~18.1 Notices issued pursuant to this section shall be issued no later than 180 days following the *dispatch day* for which the *offer* was submitted.

22.15.19 The *IESO* shall notify the *market participant* if the *IESO* ceases its assessment of *physical withholding* following issuance of the first notice of *physical withholding.*

22.15.20 Up to 45 days after the date of the notice specified in section 22.15.18, the *market participant* may submit to the *IESO* a request that the *IESO* determine an *alternative reference quantity value* for the relevant *resource* during the *dispatch day* in which the *offer* was submitted that failed the impact test for *physical withholding* applied pursuant to section 22.15.8 or 22.15.15.

22.15.20.1 Requests submitted pursuant to this section must include documentation to support any *resource*-specific considerations that were not accounted for in the *reference quantities* in use during the *instance of physical withholding.*

22.15.21   The *IESO* shall review the submitted supporting documentation and if upon such review the *IESO* determines that it demonstrates that a *resource* was able to supply a quantity of *energy* or *operating reserve* different than the *resource's reference quantity values* during the *instance of physical withholding*, the *IESO* shall determine an *alternative reference quantity value* for the *resource* and repeat the conduct test applied pursuant to section 22.15.5 or 22.15.12 and impact test applied pursuant to section 22.15.8 or 22.15.15, as applicable, using the *alternative reference quantity value* in the place of the applicable *reference quantity value.*

22.15.22   If the conduct test and impact test repeated pursuant to section 22.15.21 are not failed when the *alternative reference quantity value* is used, the *IESO* shall discontinue the assessment and notify the *market participant* within 90 days of receiving the supporting documentation.

22.15.23   The *IESO* shall issue a second notice of *physical withholding* to the relevant *market participant* within 90 days of the day the *IESO* received supporting documentation pursuant to section 22.15.20 if:

22.15.23.1 the conduct test and impact test repeated pursuant to section 22.15.21 are failed; or

22.15.23.2 upon review of the supporting documentation, the *IESO* determines that the supporting documentation does not demonstrate that a *resource* was able to supply a quantity of *energy* or *operating reserve* different than the *resource's reference quantity values* during the *instance of physical withholding*.

22.15.24   If a *market participant* does not request that the *IESO* determine an *alternative reference quantity value* in accordance with section 22.15.20 or notifies the *IESO* that it will not make such a request, the *IESO* shall issue a second notice of *physical withholding* within 90 days of the time period in section 22.15.20 elapsing or receipt of such notice, as the case may be.

22.15.25   If the *registered market participant* for a *resource* has submitted an *offer* that fails an impact test repeated pursuant to section 22.15.21, the *IESO* shall issue a second notice of *physical withholding* to the *market participant* for the *resource* within 90 days of the time period in section 22.15.20 elapsing.

22.15.25.1 A second notice of *physical withholding* shall set out the *settlement* charge relating to the *instance of physical withholding* specified in the notice and, if applicable, additional information regarding the conduct test and impact test. The *settlement* charge applied shall be determined in accordance with the applicable *market manual*.

22.16   Intertie Reference Levels

22.16.1   The *IESO* shall determine daily *day-ahead market* and *real-time market intertie reference levels* for each *dispatch day* for each *market participant* for each *boundary entity resource* on which the *market participant* may submit *offers* or *bids*.

22.16.1.1   The *IESO* shall determine one *intertie reference level* for each class of *operating reserve* a *market participant* is registered to *offer* on a *boundary entity resource.*

22.16.1.2   The *IESO* shall determine the *intertie reference levels* in section 22.16.1 using the information available on the day that is ~~six *business*~~14 days following the relevant *dispatch day.*

22.16.2   For a *market participant* that has *intertie reference levels* determined pursuant to section 22.16.1, the *IESO* shall determine one set of *intertie reference levels* for the period from 7:00 to 23:00 EPT on *business days* and one set of *intertie reference levels* for all other times. The *IESO* shall consider only the *dispatch hours* within each period when determining *intertie reference levels* for that period.

Energy Offers

22.16.3   When determining *day-ahead market energy offer intertie reference levels* for a *market participant* for a *boundary entity resource,* the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

22.16.3.1   the *market participant* had at least 1 MW in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the *day-ahead schedule,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource*;

22.16.3.2   the positive congestion component of the *intertie border price* in the *day-ahead market* was less than or equal to $25/MWh for *energy*; and

22.16.3.3   the *market participant's energy offer* for the *boundary entity resource* was priced below or equal to the *intertie border price.*

22.16.4   If a *market participant* did not have an *energy offer* that met the conditions in section 22.16.3 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market energy offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the *intertie border price* for *energy* from the *day-ahead market* for that *dispatch hour* in that *dispatch day*.

22.16.5   If a *market participant* had an *energy offer* that met the conditions in section 22.16.3 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market energy offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the unweighted average of the highest price *offer* lamination

that was scheduled contained in all *energy offers* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.3.

22.16.6   When determining *real-time market energy offer intertie reference levels* for a *market participant* for a *boundary entity resource,* the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

22.16.6.1   the *market participant* had at least 1 MW in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the hour-ahead run of the *pre-dispatch calculation engine,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource;*

22.16.6.2   the positive congestion component of the *intertie border price* in the *real-time market* was less than or equal to $25/MWh for *energy*; and

22.16.6.3   the *market participant's energy offer* for the *boundary entity resource* was priced below or equal to the *intertie border price*.

22.16.7   If a *market participant* did not have an *energy offer* that met the conditions in section 22.16.6 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market energy offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the *intertie border price* for *energy* from the *real-time market* for that *dispatch hour* in that *dispatch day*.

22.16.8   If a *market participant* had an *energy offer* that met the conditions in section 22.16.6 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market energy offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the unweighted average of the highest price *offer* lamination that was scheduled contained in all *energy offers* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.6.

Energy Bids

22.16.9   When determining *day-ahead market energy bid intertie reference levels* for a *market participant* for a *boundary entity resource*, the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

22.16.9.1   the *market participant* had at least 1 MW in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the *day-ahead schedule,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource*;

22.16.9.2   the positive congestion component of the *intertie border price* in the *day-ahead market* was less than or equal to $25/MWh for energy; and

22.16.9.3 the *market participant's energy bid* for the *boundary entity resource* was priced above the *intertie border price*.

22.16.10   If a *market participant* did not have an *energy bid* that met the conditions in section 22.16.9 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market energy bid intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the *intertie border price* for *energy* from the *day-ahead market* for that *dispatch hour* in that *dispatch day*.

22.16.11   If a *market participant* had an *energy bid* that met the conditions in section 22.16.9 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market energy bid intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the unweighted average of the highest price *bid* lamination that was scheduled contained in all *energy bids* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.9.

22.16.12   When determining *real-time market energy bid intertie reference levels* for a *market participant* for a *boundary entity resource,* the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

22.16.12.1 the *market participant* had at least 1 MW in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the hour-ahead run of the *pre-dispatch calculation engine,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource*;

22.16.12.2 the positive congestion component of the *intertie border price* in the *real-time market* was less than or equal to $25/MWh for *energy*; and

22.16.12.3 the *market participant's energy bid* for the *boundary entity resource* was priced above the *intertie border price*.

22.16.13   If a *market participant* did not have an *energy bid* that met the conditions in section 22.16.12 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market energy bid intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the *intertie border price* for *energy* from the *real-time market* for that *dispatch hour* in that *dispatch day*.

22.16.14   If a *market participant* had an *energy bid* that met the conditions in section 22.16.12 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market energy bid intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the unweighted average of the highest price *bid* lamination that was scheduled contained in all *energy bids* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.12.

Operating Reserve

22.16.15   When determining a *day-ahead market* operating reserve offer *intertie reference level* for a class of *operating reserve* for a *market participant* for a *boundary entity resource*, the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

   22.16.15.1 the *market participant* had at least 1 MW of that class of *operating reserve* scheduled in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the *day-ahead schedule,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource*;

   22.16.15.2 the positive congestion component of the *intertie border price* in the *day-ahead market* was less than or equal to $25/MW for that class of *operating reserve;* and

   22.16.15.3 *the market participant's offer* for *operating reserve* for the *boundary entity resource* was priced below or equal to the *intertie border price* for that class of *operating reserve.*

22.16.16   If a *market participant* did not have an *offer* for *operating reserve* that met the conditions in section 22.16.15 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market operating reserve offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* for a particular class of *operating reserve* shall be the *intertie border price* for that class of *operating reserve* in the *day-ahead market* for that *dispatch hour* in that *dispatch day*.

22.16.17   If a *market participant* had an *offer* for *operating reserve* that met the conditions in section 22.16.15 scheduled in the *day-ahead schedule* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *day-ahead market operating reserve offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* for that class of *operating reserve* shall be the unweighted average of the highest price *offer* lamination that was scheduled contained in all *offers* for that class of *operating reserve* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.15.

22.16.18   When determining a *real-time market operating reserve offer intertie reference level* for a class of *operating reserve* for a *market participant* for a *boundary entity resource,* the *IESO* shall consider all the *dispatch hours* in the 90 days prior to the *dispatch day* when:

   22.16.18.1 the *market participant* had at least 1 MW of that class of *operating reserve* scheduled in at least 1 *dispatch hour* scheduled at the *boundary entity resource* in the hour-ahead run of the *pre-dispatch calculation engine,* excluding any *dispatch hours* where the *IESO* manually set the schedule for the *market participant* for that *boundary entity resource*;

22.16.18.2 the positive congestion component of the *intertie border price* in the *real-time market* was less than or equal to $25/MW for that class of *operating reserve;* and

22.16.18.3 the *market participant's offer* for *operating reserve* for the *boundary entity resource* was priced below or equal to the *intertie border price* for that class of *operating reserve*.

22.16.19   If a *market participant* did not have an *offer* for *operating reserve* that met the conditions in section 22.16.18 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market operating reserve offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* for a particular class of *operating reserve* shall be the *intertie border price* for that class of *operating reserve* in the *real-time market* for that *dispatch hour* in that *dispatch day*.

22.16.20   If a *market participant* had an *offer* for *operating reserve* that met the conditions in section 22.16.18 scheduled in the hour-ahead run of the *pre-dispatch calculation engine* for at least one *dispatch hour* in 15 of the 90 days prior to a *dispatch day*, then its *real-time market operating reserve offer intertie reference level* for a *boundary entity resource* for a particular *dispatch hour* on a particular *dispatch day* shall be the unweighted average of the highest price *offer* lamination that was scheduled contained in all *offers* for that class of *operating reserve* submitted by that *market participant* for that *boundary entity resource* that met the conditions in section 22.16.18.

22.17   Intertie Economic Withholding on an Uncompetitive Intertie Zone

22.17.1   The *IESO* may apply the conduct tests and impact tests specified in this section 22.17 in accordance with the applicable *market manual* to assess *intertie economic withholding.*

22.17.1.1   The *IESO* shall not assess the export transactions of an *energy trader* for *intertie economic withholding* under this section 22.17 if that *energy trader* has not disclosed a *market control entity* that has been designated as the *market control entity for physical withholding* for a *dispatchable resource* that is authorized to supply *energy* or *operating reserve.*

22.17.2   The *IESO* may cease the assessment of *intertie economic withholding* at any time.

Conduct Test – Energy

22.17.3   The *IESO* may apply a conduct test for *intertie economic withholding* to an *energy offer* or *energy bid* submitted by a *registered market participant* for a *boundary entity resource* in an uncompetitive *intertie zone* if: (i) that *energy offer* or *energy bid* was scheduled; and (ii) there is a positive congestion component on the *intertie border price* for *energy* greater than $25/MWh in the *day-ahead market* or greater than $25/MWh in the *real-time market,* as applicable.

22.17.4   An *energy offer* or *energy bid* shall fail the conduct test applied pursuant to section 22.17.3 if the *offer* or *bid* is greater than the lesser of:

22.7.4.1   the sum of: (i) the *boundary entity resource's* applicable *intertie reference level* and (ii) the absolute value of the *boundary entity resource's* applicable *reference level* multiplied by 300%; or

22.7.4.2   the sum of: (i) the *boundary entity resource's* applicable *reference level* and (ii) $100/MWh.

22.17.5   A *price-quantity pair* in an *energy offer* or *energy bid* submitted by a *registered market participant* for a *boundary entity resource* that has a price component less than or equal to $25/MWh shall be deemed not to have failed a conduct test applied pursuant to section 22.17.3.

Impact Test – Energy

22.17.6   The *IESO* may apply an impact test for *intertie economic withholding* in an uncompetitive *intertie zone* to any *boundary entity resource* that fails the conduct test applied pursuant to section 22.17.3.

22.17.7   An *energy offer* or *energy bid* submitted by a *registered market participant* for a *boundary entity resource* shall fail the impact test if the *boundary entity resource's simulated as-offered energy locational marginal price* is the lesser of greater than 100% or $50/MWh above the *simulated intertie reference level energy locational marginal price* in the *day-ahead market* or the lesser of greater than 100% or $50/MW above the *simulated intertie reference level energy locational marginal price* in the *real-time market,* as applicable.

22.17.8   The *IESO* shall calculate the *simulated intertie reference level energy locational marginal price* using the same inputs as those used by the relevant calculation engine to calculate the *energy locational marginal price* for the uncompetitive *intertie zone* and replacing each *energy offer* or *energy bid* that failed the conduct test applied pursuant to section 22.17.3 with the applicable *intertie reference level* for *energy* for the *boundary entity resource* in the *dispatch day* being assessed.

Conduct Test – Operating Reserve

22.17.9   The *IESO* may apply a conduct test for *intertie economic withholding* to an *offer* for *operating reserve* submitted by a *registered market participant* for a *boundary entity*

resource in an uncompetitive *intertie zone* if: (i) that *offer* for *operating reserve* was scheduled; and (ii) the *operating reserve locational marginal price* for a class of *operating reserve* in that uncompetitive *intertie zone* is greater than $15/MWh in the *day-ahead market* or greater than $15/MW in the *real-time market,* as applicable.

22.17.10   An *offer* for *operating reserve* submitted by a *registered market participant* for *a boundary entity resource* shall fail the conduct test applied pursuant to section 22.17.9 if the *offer* is greater than the lesser of 50% or $25/MWh above the *boundary entity resource's intertie reference level* in the *day-ahead market* or greater than the lesser of 50% or $25/MW above the *boundary entity resource's intertie reference level* in the *real-time market*.

22.17.11   A *price-quantity pair* in an *offer* for *operating reserve* submitted by a *registered market participant* for a *boundary entity resource* that has a price component less than or equal to $5/MWh in the *day-ahead market* or $5/MW in the *real-time market* shall be deemed not to have failed the conduct test applied pursuant to section 22.17.9.

Impact Test – Operating Reserve

22.17.12   The *IESO* may apply an impact test for *intertie economic withholding* in an uncompetitive *intertie zone* to any *boundary entity resource* that fails the conduct test applied pursuant to section 22.17.9.

22.17.13   A *boundary entity resource's offer* for *operating reserve* shall fail the impact test if its *simulated as-offered operating reserve locational marginal price* is ~~the~~ greater than the lesser of 50% or $25/MWh above the *simulated intertie reference level operating reserve locational marginal price* in the *day-ahead market* or greater than the lesser of 50% or $25/MW above the *simulated intertie reference level operating reserve locational marginal price* in the *real-time market*.

22.17.14   The *IESO* shall calculate the *simulated intertie reference level operating reserve locational marginal price* using the same inputs as those used by the relevant calculation engine to calculate the *operating reserve locational marginal price* for the *uncompetitive intertie zone* and replacing each *offer* for *operating reserve* that failed the conduct test applied pursuant to section 22.17.10 with the applicable *operating reserve offer intertie reference level* for the *boundary entity resource* in the *dispatch day* being assessed.

22.18   Mitigation for Make-Whole Payment Impact in Uncompetitive Intertie Zones

22.18.1   The *IESO* may apply the conduct tests and impact tests specified in this section 22.18 in accordance with the applicable *market manual* to assess mitigation for make-whole payment impact on an uncompetitive *intertie zone.*

22.18.2   The *IESO* may cease the assessment of mitigation for make-whole payment impact at any time.

Conditions

22.18.3   The *IESO* may assess mitigation for make-whole payment impact on an uncompetitive *intertie zone* for a *boundary entity resource* if:

22.18.3.1   the *boundary entity resource* was tested for an *energy* price impact pursuant to section 22.17.6;

22.18.3.2   the *boundary entity resource* was tested for an *operating reserve* price impact pursuant to section 22.17.12; or

22.18.3.3   the *boundary entity resource* was scheduled to provide *operating reserve* on an uncompetitive *intertie zone* and received a make-whole payment greater than $10,000 for a *dispatch hour*.

Conduct Test

22.18.4   The *IESO* may apply a conduct test for *intertie economic withholding* to an *energy offer* or *offer* for *operating reserve* submitted by a *registered market participant* for a *boundary entity resource* that met any of the conditions in section 22.18.3. The *energy offer* or *offer* for *operating reserve* shall fail the conduct test if:

22.18.4.1   the *energy offer* was greater than the lesser of 300% or $100/MWh above the *boundary entity resource*'s *intertie reference level* in the *day-ahead market* or greater than the lesser of 300% or $100/MW above the *boundary entity resource*'s *intertie reference level* in the *real-time market*; or

22.18.4.2   the *offer* for *operating reserve* was greater than the lesser of 50% or $25/MWh above the *boundary entity resource*'s *intertie reference level* in the *day-ahead market* or greater than the lesser of 50% or $25/MW above the *boundary entity resource*'s *intertie reference level* in the *real-time market*.

Impact Test

22.18.5   The *IESO* may apply an impact test for *intertie economic withholding* to an *energy offer* or *offer* for *operating reserve* submitted by a *registered market participant* for a *boundary entity resource* that that fails the conduct test applied pursuant to section 22.18.4.

22.18.5.1   The *energy offer* or *offer* for *operating reserve* shall fail the impact test for a *dispatch hour* if the *boundary entity resource's* make-whole payment for that *dispatch hour* is greater than 10% higher than the make-whole payment would have been based on the *boundary entity resource's* relevant *intertie reference levels* for *offer* parameters that failed the conduct test.

22.19 Intertie Economic Withholding – Procedural Steps and Timelines

22.19.1 If an *energy offer, energy bid,* or *offer* for *operating reserve* fails an impact test applied pursuant to section 22.17.6, 22.17.12 or 22.18.5, the *IESO* shall issue a first notice of *economic withholding* to the relevant *market participant* communicating a finding of an *instance of intertie economic withholding*.

    22.19.1.1 Notices issued pursuant to this section shall be issued no later than 180 days following the *dispatch day* for which the *offer* or *bid* was submitted.

22.19.2 The *IESO* shall notify the *market participant* if the *IESO* ceases its assessment of *intertie economic withholding* following issuance of the first notice of *intertie economic withholding*.

22.19.3 Up to 45 days after the date of the notice specified in section 22.19.1, the *market participant* may submit to the *IESO* a request that the *IESO* determine an *alternative intertie reference level value* for the relevant *boundary entity resource* during the *dispatch day* in which the *offer* or *bid* was submitted.

    22.19.3.1 Requests submitted pursuant to this section must include documentation to support any *resource*-specific considerations that were not accounted for in the *intertie reference levels* in use during the *instance of intertie economic withholding*.

22.19.4 The *IESO* shall review the submitted supporting documentation and if upon such review the *IESO* determines it demonstrates that the *intertie reference level* did not account for all a *market participant's short-run marginal costs*, for *offers*, or *short-run marginal benefits*, for *bids*, the *IESO* shall determine an *alternative intertie reference level value* for the *boundary entity resource* that accounts for all the *short-run marginal costs* or *short-run marginal benefits*, as the case may be, and repeat the conduct test applied pursuant to section 22.17.3, 22.17.9, or 22.18.4 and impact test applied pursuant to section 22.17.6, 22.17.12, or 22.18.5 using the *alternative intertie reference level value* in the place of the applicable *intertie reference level value.*

22.19.5 If the conduct test and impact test repeated pursuant to section 22.19.4 are not failed when the *alternative intertie reference level value* is used, the *IESO* shall discontinue the assessment and notify the *market participant* within 90 days of receiving the supporting documentation.

22.19.6 The *IESO* shall issue a second notice of *intertie economic withholding* to the relevant *market participant* within 90 days of the day the *IESO* received supporting documentation pursuant to section 22.19.3 if:

    22.19.6.1 the conduct test and impact test for *intertie economic withholding* repeated pursuant to section 22.19.4 are failed; or

22.19.6.2   upon review of the supporting documentation, the *IESO* determines that the supporting documentation does not demonstrate that the relevant *intertie reference level* did not account for all of a *market participant's short-run marginal costs*, for *offers*, or *short-run marginal benefits*, for *bids*.

22.19.7   If a *market participant* does not request that the *IESO* determine an *alternative intertie reference level value* in accordance with section 22.19.3 or notifies the *IESO* that it will not make such a request, the *IESO* shall issue a second notice of *intertie economic withholding* within 90 days of the time period in section 22.19.3 elapsing or receipt of such notice, as the case may be.

22.19.8   If a *registered market participant* for a *boundary entity resource* has submitted an *offer* or *bid* that fails an impact test applied pursuant to section 22.17.6, 22.17.12, or 22.18.5, the *IESO* shall apply a *settlement* charge to the relevant *market participant* in respect of each *instance of intertie economic withholding*.

22.19.8.1   A second notice of *intertie economic withholding* shall set out the *settlement* charge relating to the *instance of intertie economic withholding* specified in the notice and, if applicable, additional information regarding the conduct test and impact test. The *settlement* charge applied shall be determined in accordance with the applicable *market manual*.

Chapter 7

Standing Dispatch Data

3.3.9   If the dispatch data for a registered facility for a given trading day of a trading week will not change from trading week to trading week, the registered market participant for that registered facility may, as and for its dispatch data described in section 3.3.1, submit standing dispatch data for that registered facility. Such standing dispatch data shall:

   3.3.9.1   define the *dispatch data* for each *dispatch hour* of each *dispatch day*;

   3.3.9.1A   in respect of each *dispatch day* for which it is in effect, be deemed for the purposes of this section 3.3 and section 22 to be initial *dispatch data,* submitted at 06:00 EST on the *pre-dispatch day*; and

   3.3.9.2   remain in effect until the expiration date specified in the standing *dispatch data* unless earlier withdrawn or earlier revised by the *registered market participant*:

   a.   as standing *dispatch data* prior to 06:00 EST on the *pre-dispatch day*; or

   b.   in accordance with sections 3.3.3 to 3.3.8.

Chapter 3

2.5   Notice of Dispute, Negotiation and Response

2.5.1   The complaining person (the "*applicant*") shall, within the time specified in section 2.5.1A, serve a written notice of the dispute (the "*notice of dispute*") on any *respondent*.

2.5.1A   A *notice of dispute* shall be served:

   2.5.1A.1   in the case of an application referred to in section 2.2.1.3, within 20 *business days* of the date of receipt of notice by the *generator* or *electricity storage participant* of rejection by the *IESO* of the *outage* in respect of which compensation is claimed pursuant to section 6.7.5 of Chapter 5;

   2.5.1A.2   in the case of a dispute that involves a *reviewable decision* referred to in section 5.3.9 of Chapter 6, within 20 *business days* of the date of receipt by the *metering service provider* of notice of the revocation of its registration by the *IESO*;

   2.5.1A.3   in the case of a request or dispute referred to in section 6.8.2A or 6.8.2B of Chapter 9, within the time specified in section 6.8.8 of Chapter 9;

2.5.1A.4   in the case of a dispute referred to in section 6.8.9 of Chapter 9, within the time specified in section 6.8.10 of Chapter 9;

2.5.1A.4A   in the case of a dispute referred to in section 2.1A.6A of Chapter 9, within 20 *business days* of the date of receipt of the first *invoice* that reflects the apportionment that is the subject-matter of the dispute;

2.5.1A.4B   in the case of a dispute involving an order, direction, instruction or decision of the *IESO* issued prior to January 1, 2004 not otherwise addressed by subsections 2.5.1A.1 to 2.5.1A.4A, within six years of the date of receipt of the order, direction, instruction or decision;

2.5.1A.4C   in the case of a dispute involving an order, direction, instruction or decision of the *IESO* issued on or after January 1, 2004 not otherwise addressed by subsections 2.5.1A.1 to 2.5.1A.4A, within two years of the date of receipt of the order, direction, instruction or decision;

2.5.1A.4D   in the case where the *market participant* contests the *notice of intention* under section 6.2B.3, within the timelines set out in section 6.2B.3 and the *response to the notice of intention* shall be deemed to constitute the *notice of dispute*;

2.5.1A.4E   in the case of a dispute involving one or more orders referred to in section 6.2B.15, within the timelines set out in section 6.2B.16;

2.5.1A.5   in all other cases, within the applicable limitation period set out in the *Limitations Act, 2002*; and

2.5.1A.6   in the case of a dispute related to an independent review conducted pursuant to section 22.8 of Chapter 7, no later than 22 *business days* following the day on which the *IESO* registers *reference levels* and *reference quantities* for the relevant *resource* following completion of the independent review.

Appendix 7.6 – Local Market Power

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