

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:	<input checked="" type="checkbox"/> Alteration <input checked="" type="checkbox"/> Deletion <input checked="" type="checkbox"/> 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

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
5.0	Submitted for Technical Panel Provisional Vote	March 15, 2022
6.0	Provisionally recommended by Technical Panel; submitted for IESO Board Review	March 22, 2022
7.0	Re-Published for Stakeholder Review and Comment	March 2023

Version	Reason for Issuing	Version Date
8.0	Re-Published for Stakeholder Review and Comment	December 2023

Approved Amendment Publication Date:

Approved Amendment Effective Date:

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 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. 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 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 *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 22.3.3;

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* requests the *IESO* review that *reference level* pursuant to section 22.5.4 and the *IESO* has accepted the 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 levels* 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 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 costs* 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 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 hours 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 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 *IESO* shall register the *reference levels* and *reference quantities* in the *preliminary view* no later than the 11th *business day* after the date of the *preliminary view*.

- 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 rejecting a value pursuant to section 22.8.10 shall not affect the requirement in this section 22.8.7 that the 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 days 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 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 The *IESO* shall assess *potential constrained area* designations 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 areas, 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 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 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 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;

22.13.1.9 the summed lead time of all thermal states is greater than six hours above
the summed reference level values of all thermal states;

22.13.1.10 ramp hours to minimum loading point is greater than the 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;

22.13.1.11 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

22.13.1.12 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 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 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*.

22.15.18.1 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 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 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 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; **and**
- 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

1.1 ~~Dispatch of Constrained Off Facilities and Constrained On Facilities [Intentionally left blank – section deleted]~~

- 1.1.1 ~~The *IESO* shall, pursuant to this Chapter 7, dispatch a registered facility as a constrained on facility or a constrained off facility when, without such action, the reliability of the *IESO* controlled grid cannot be maintained due to a transmission~~

~~flow constraint on the IESO-controlled grid or a security limit. The IESO shall dispatch registered facilities as constrained on facilities and constrained off facilities in such economic merit order as will enable it to meet its reliability obligations under these market rules at the lowest cost. [Intentionally left blank – section deleted]~~

1.1.2 [Intentionally left blank – section deleted]

1.1.3 ~~Subject to section 9.4.5 of Chapter 7 and sections 1.4.5.1 and 1.6.7.1, each constrained on facility or constrained off facility shall, in addition to such other settlement credits to which it may be entitled in accordance with Chapter 9, receive a congestion management settlement credit calculated in accordance with section 3.5.2 of Chapter 9. [Intentionally left blank – section deleted]~~

1.2 Investigation of Local Market Power and Constrained Off Events~~[Intentionally left blank – section deleted]~~

1.2.1 ~~Subject to sections 1.2.1C, 1.2.2 or 1.2.6, where the IESO determines that a constrained on event or constrained off event may have occurred, the IESO shall conduct the analyses referred to in section 1.3 to establish whether local market power existed and as a preliminary step in determining whether the re-calculation of the congestion management settlement credit referred to in section 1.1.3 is justified. [Intentionally left blank – section deleted]~~

1.2.1A ~~For purposes of establishing designated constrained off watch zones and for identifying persistent and significant constrained off events within designated constrained off watch zones, the IESO shall conduct the analysis set out in the applicable market manual.~~

~~The market manual shall include but not necessarily be limited to a description of:~~

- ~~• criteria for identifying designated constrained off watch zones and for revoking such designations;~~
- ~~• criteria for determining persistent and significant congestion management settlement credit payments for constrained off events within designated constrained off watch zones; and~~
- the manner for determining an initial estimated replacement price for the investigated price.~~[Intentionally left blank – section deleted]~~

1.2.1B ~~When developing the criteria referred to in section 1.2.1A, the IESO shall be guided by the following principles:~~

- ~~• areas within Ontario where nodal energy prices are materially different from the price of energy in either the pre-dispatch schedule or the real-time schedule are more likely to be designated constrained off watch zones; and~~
- ~~• constrained off events that occur more frequently over periods of time or that occur less frequently but involve larger congestion management settlement credit~~

payments are more likely to be considered persistent and significant, justifying the price investigation analysis referred to in section 1.4.1.

When developing the initial estimated replacement price for the *investigated price* referred to in section 1.2.1A, the *IESO* shall be guided by the principle that the *market participant* should be financially indifferent to being constrained off relative to the profit it would have earned under the *market schedule*, with due consideration to the following:

- ~~recent offers or bids submitted by the market participant;~~
- ~~market prices in neighbouring jurisdictions;~~
- ~~market participant costs as estimated through~~
- ~~information provided by the market participant;~~
- ~~in the case of energy limited resources, an assessment of opportunity costs; and~~
- any other information considered relevant by the *IESO*. [Intentionally left blank – section deleted]

1.2.1C ~~If after completing the analysis prescribed by section 1.2.1A, the *IESO* determines that a *market participant* received persistent and significant congestion management settlement credit payments for constrained off events in one or more constrained off watch zones, the *IESO* shall conduct the analysis referred to in section 1.4.1 to determine whether the *investigated price* justifies the re-calculation of the congestion management settlement credit referred to in section 1.1.3. [Intentionally left blank – section deleted]~~

1.2.1D ~~The *IESO* shall monitor conditions on the *IESO*-controlled grid and publish any changes in the status of the *designated constrained off watch zones* before they take effect. *Market participants* may request a review of such designations, stating reasons for requesting the review, and the *IESO* shall undertake such review unless in its judgement the review is considered to be unwarranted. [Intentionally left blank – section deleted]~~

1.2.2 ~~The *IESO* shall not be required to conduct the analysis referred to in sections 1.2.1 or 1.2.1A if the *IESO* anticipates that: [Intentionally left blank – section deleted]~~

1.2.2.1 ~~the maximum adjustment to the congestion management settlement credit referred to in section 1.1.3 that may be effected on the basis of such analyses and of the analysis referred to in section 1.4.1 would not exceed the threshold amount published by the *IESO* pursuant to section 1.2.3; or [Intentionally left blank – section deleted]~~

1.2.2.2 ~~the impact of the price contained in the *energy bid* or the *energy offer* submitted by the *constrained on facility* or the *constrained off facility* is, in~~

~~the IESO's opinion, not material. [Intentionally left blank – section deleted]~~

- 1.2.3 ~~The IESO shall determine and publish the threshold amount referred to in section 1.2.2.1, which shall be the minimum amount of an adjustment to a congestion management settlement credit referred to in section 1.1.3 that will, subject to sections 1.2.2.2 and 1.2.6, trigger an obligation on the IESO to conduct the analyses referred to in sections 1.2.1 or 1.2.1A. [Intentionally left blank – section deleted]~~
- 1.2.4 [Intentionally left blank – section deleted]
- 1.2.5 [Intentionally left blank – section deleted]
- 1.2.6 ~~Where the IESO cannot, for any reason, conduct the analyses referred to in section 1.3 in the manner described in that section, it may conduct such other analyses as it determines appropriate either prior to conducting the analysis described in section 1.4.1, if any, or as part of such analysis. [Intentionally left blank – section deleted]~~
- 1.2.7 ~~Where section 1.2.6 applies: [Intentionally left blank – section deleted]~~
- 1.2.7.1 ~~the IESO shall cease investigation of the investigated price where the IESO determines that the results of the analyses do not justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3; or [Intentionally left blank – section deleted]~~
- 1.2.7.2 ~~the IESO shall conduct the analysis referred to in section 1.4.1 where the IESO determines that the results of the analyses referred to in section 1.2.6 reveal that the investigated price may justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3. [Intentionally left blank – section deleted]~~

1.3 Local Market Power Screens [Intentionally left blank – section deleted]

- 1.3.1 ~~The IESO shall review the inputs and outputs of the dispatch algorithm for the dispatch intervals to which the investigated price relates, and such other information as the IESO determines appropriate, for the purpose of determining whether a transmission flow constraint on the IESO-controlled grid or a security limit resulted in a constrained on event or a constrained off event. [Intentionally left blank – section deleted]~~
- 1.3.2 ~~The IESO shall determine whether the investigated price falls within the range determined in accordance with section 1.3.8 using the reference prices referred to in section 1.3.3 and the factors derived from the methodology approved by the IESO Board pursuant to section 1.3.5. [Intentionally left blank – section deleted]~~
- 1.3.3 ~~For the purposes of section 1.3.2, the reference prices shall be: [Intentionally left blank – section deleted]~~

1.3.3.1 ~~the historical reference price representing business days between the hours of 07:00 and 23:00 EST for the investigated facility; or [Intentionally left blank – section deleted]~~

1.3.3.1A ~~the historical reference price representing all time periods other than those specified in section 1.3.3.1 for the investigated facility;~~

~~_____ as the case may be depending on whether the investigated price was submitted for the time period indicated in section 1.3.3.1 or section 1.3.3.1A, referred to as P_h ; or [Intentionally left blank – section deleted]~~

1.3.3.1B ~~where permitted by section 1.3.4, such alternative reference price, if any, as may be established by the IESO Board and published pursuant to section 1.3.4, referred to as P_a ; and [Intentionally left blank – section deleted]~~

1.3.3.2 ~~the market price for energy determined for the dispatch interval to which the investigated price relates, referred to as P_m ;~~

~~provided that, [Intentionally left blank – section deleted]~~

1.3.3.3 ~~if dispatch data that has been accepted by the IESO, as reflected in the market schedules for that investigated facility, is not available in respect of the investigated facility which is; i) a hydroelectric generation facility for at least ten of the thirty days; or ii) or for all other facilities at least fifteen of the ninety days, comprising the period over which the relevant historical reference price referred to in sections 1.3.3.1 and 1.3.3.1A is calculated, or [Intentionally left blank – section deleted]~~

1.3.3.4 ~~if the investigated facility is a boundary entity withdrawing energy from the IESO-administered markets at an intertie that has been designated by the IESO as an uncontested export intertie, being an intertie:~~

~~a. where at least ninety percent of the withdrawals over that intertie in the ninety days prior to such designation have been accounted for by one market participant, or~~

~~b. which is uncontested in accordance with criteria stipulated by the IESO Board (which criteria shall also specify the factors allowing revocation of the designation).~~

~~sections 1.3.3.1 and 1.3.3.1A shall not apply and only the reference price referred to in section 1.3.3.2 shall be used for the purposes of section 1.3.2. [Intentionally left blank – section deleted]~~

1.3.4 ~~The IESO Board may establish the alternative reference price referred to in section 1.3.3.1B based on an average of the price contained in all energy offers or energy bids submitted by the registered market participant for an investigated facility and accepted by the IESO, as reflected in the most recent market schedules for that investigated facility, during the time periods specified in section 1.3.3.1 or the time~~

- periods specified in section 1.3.3.1A as the case may be, in respect of a given increment or increments of supply or consumption. No such alternative *reference price* shall be used by the *IESO* for the purposes of section 1.3.3.1B until the manner of determination of such *reference price* and the conditions in which it may be applied have been *published* by the *IESO*. [Intentionally left blank – section deleted]
- 1.3.5 ~~The *IESO* shall publish the methodology, as determined by the *market surveillance panel* and approved by the *IESO Board*, for determining a pair of high end factors and a pair of low end factors for each type of *reference price* referred to in section 1.3.3, including the alternative *reference price* referred to in section 1.3.3.1B, if any. [Intentionally left blank – section deleted]~~
- 1.3.5.1 ~~[Intentionally left blank – section deleted]~~
- 1.3.5.2 ~~[Intentionally left blank – section deleted]~~
- 1.3.6 ~~The methodology referred to in section 1.3.5 for determining the pair of high end factors and the pair of low end factors for each type of *reference price* shall be established based on the concept that it is acceptable for the congestion management *settlement credit* referred to in section 1.1.3 to be larger as the number of consecutive or the number of cumulative hours that a *registered facility* may be *dispatched* as a *constrained on facility* or as a *constrained off facility* decrease. Accordingly: [Intentionally left blank – section deleted]~~
- 1.3.6.1 ~~one of each such pair of high end factors and one of each such pair of low end factors shall vary according to the number of consecutive hours that a *registered facility* was *dispatched* as a *constrained on facility* or a *constrained off facility* during the *constrained on event* or *constrained off event* being investigated; and [Intentionally left blank – section deleted]~~
- 1.3.6.2 ~~the other of each such pair shall vary according to the cumulative number of hours that a *registered facility* was *dispatched* as a *constrained on facility* or a *constrained off facility* in the ninety day period preceding the *constrained on event* or *constrained off event* being investigated and during such *constrained on event* or *constrained off event*. [Intentionally left blank – section deleted]~~
- 1.3.7 ~~The methodology referred to in section 1.3.5 for determining the pair of high end factors and the pair of low end factors may differ for, and the resulting pairs of factors may also differ for, each of the *reference prices* referred to in section 1.3.3, including the alternative *reference price*, if any, referred to in section 1.3.3.1B. For each such *reference price*: [Intentionally left blank – section deleted]~~
- 1.3.7.1 ~~the high end factors shall decrease as either the number of consecutive hours or the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, increase, provided that neither of such factors shall be less than the value 1.0; and [Intentionally left blank – section deleted]~~

1.3.7.2 ~~the low end factors shall increase as either the number of consecutive hours or the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, increase, provided that such neither of such factors shall be greater than the value 1.0. [Intentionally left blank – section deleted]~~

1.3.8 ~~The IESO shall establish the range referred to in section 1.3.2 in respect of an investigated price as follows: [Intentionally left blank – section deleted]~~

1.3.8.1 ~~for the high end of the range the IESO shall:~~

~~a.—calculate, for each applicable reference price referred to in section 1.3.3, high end values for each of the number of consecutive hours and the number of cumulative hours referred in sections 1.3.6.1 and 1.3.6.2, respectively, using the following equation:~~

~~reference price + absolute value (reference price) x (factor —1)~~

~~where the factor used in the above equation is the high end factor determined for that type of reference price in accordance with sections 1.3.5 to 1.3.7 that corresponds to the appropriate number of consecutive hours or number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively;~~

~~b.—select, in respect of each applicable reference price, the lesser of the high end values calculated pursuant to section 1.3.8.1(a); and~~

~~c.—select the larger of the high end values based on P_m or P_h or, where the alternative reference price referred to in section 1.3.3.1B is used, based on P_m or P_e ; and [Intentionally left blank – section deleted]~~

1.3.8.2 ~~for the low end of the range the IESO shall:~~

~~a.—calculate, for each applicable reference price referred to in section 1.3.3, low end values for each of the number of consecutive hours and the number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively, using the following equation:~~

~~reference price + absolute value (reference price) x (factor —1)~~

~~where the factor used in the above equation is the low end factor determined for that type of reference price in accordance with sections 1.3.5 to 1.3.7 that corresponds to the appropriate number of consecutive hours or number of cumulative hours referred to in sections 1.3.6.1 and 1.3.6.2, respectively;~~

~~b.—select, in respect of each applicable reference price, the larger of the low end values calculated pursuant to section 1.3.8.2(a); and~~

~~c.—select the lesser of the low end values based on P_m or P_h or, where the alternative reference price referred to in section 1.3.3.1B is used, based on P_m or P_e . [Intentionally left blank – section deleted]~~

1.3.9 ~~The IESO shall determine whether, in the IESO's opinion, there existed sufficient competition for the provision of the physical services that the investigated facility was to provide in being dispatched as a constrained on facility or a constrained off facility. The IESO shall determine whether sufficient competition existed based on the number of market participants and the MW quantity associated with, as applicable: [Intentionally left blank – section deleted]~~

1.3.9.1 ~~energy offers, not included in the market schedule, for a generation facility or an import that could have been constrained on; and [Intentionally left blank – section deleted]~~

1.3.9.2 ~~energy bids, included in the market schedule, for a dispatchable load or an export that could have been constrained off;~~

~~or; [Intentionally left blank – section deleted]~~

1.3.9.3 ~~energy offers, included in the market schedule, for a generation facility or an import that could have been constrained off; and [Intentionally left blank – section deleted]~~

1.3.9.4 ~~energy bids, not included in the market schedule, for a dispatchable load or an export that could have been constrained on;~~

~~for those market participants that could have effectively responded to dispatch instructions comparable to those issued for the investigated facility. [Intentionally left blank – section deleted]~~

1.3.10 ~~Where the IESO determines: [Intentionally left blank – section deleted]~~

1.3.10.1 ~~pursuant to section 1.3.1, that a transmission flow constraint on the IESO-controlled grid or a security limit did not result in a constrained on event or a constrained off event; [Intentionally left blank – section deleted]~~

1.3.10.2 ~~pursuant to section 1.3.2, that the investigated price falls within the range referred to in that section; or [Intentionally left blank – section deleted]~~

1.3.10.3 ~~pursuant to section 1.3.9, that sufficient competition existed for the provision of the physical services that the investigated facility was dispatched as a constrained on facility or a constrained off facility to provide;~~

~~the IESO shall, subject to section 1.8, cease investigation of the investigated price. [Intentionally left blank – section deleted]~~

1.3.11 [Intentionally left blank – section deleted]

1.3.11.1 [Intentionally left blank – section deleted]

1.3.11.2 [Intentionally left blank – section deleted]

- 1.3.12 ~~For the purpose of Appendix 7.6, local market power is established where the IESO determines: [Intentionally left blank – section deleted]~~
- 1.3.12.1 ~~pursuant to section 1.3.1, that a transmission flow constraint on the IESO-controlled grid or a security limit resulted in constrained on event or a constrained off event; [Intentionally left blank – section deleted]~~
- 1.3.12.2 ~~pursuant to section 1.3.2, that the investigated price falls outside of the range referred to in that section; and [Intentionally left blank – section deleted]~~
- 1.3.12.3 ~~pursuant to section 1.3.9, that sufficient competition did not exist for the provision of the physical services that the investigated facility was dispatched as a constrained on facility or a constrained off facility to provide.~~

~~If the IESO establishes that local market power exists, the IESO shall conduct the analysis referred to in 1.4.1 to determine whether the investigated price justifies the re-calculation of the congestion management settlement credit referred to in section 1.1.3. [Intentionally left blank – section deleted]~~

- 1.3.12.4 [Intentionally left blank – section deleted]
- 1.3.12.5 [Intentionally left blank – section deleted]
- 1.3.13 [Intentionally left blank – section deleted]
- 1.3.13.1 [Intentionally left blank – section deleted]
- 1.3.13.2 [Intentionally left blank – section deleted]
- 1.3.13.3 [Intentionally left blank – section deleted]
- 1.3.13.4 [Intentionally left blank – section deleted]

1.4 ~~Price Investigation~~ [Intentionally left blank – section deleted]

- 1.4.1 ~~Subject to section 1.4.2, the IESO shall conduct an analysis of such factors that the IESO considers relevant to a determination of whether the investigated price justifies the re-calculation of the congestion management settlement credit referred to in section 1.1.3, which factors may include: [Intentionally left blank – section deleted]~~
- 1.4.1.1 ~~the price, and variations in the price, of the fuel used by the investigated facility; [Intentionally left blank – section deleted]~~
- 1.4.1.2 ~~the degree to which the prices contained in the energy offers or energy bids submitted by the registered market participant for the investigated facility and accepted by the IESO, as reflected in the market schedules for~~

~~that investigated facility, have varied over time; [Intentionally left blank – section deleted]~~

1.4.1.3 [Intentionally left blank – section deleted]

1.4.1.4 ~~market prices and variations in market prices in neighbouring jurisdictions; [Intentionally left blank – section deleted]~~

1.4.1.5 ~~opportunity costs for energy limited resources; and [Intentionally left blank – section deleted]~~

1.4.1.6 ~~for investigations of constrained off events in designated constrained off watch zones prescribed in section 1.2.1A, such other considerations as set out in the applicable market manual. [Intentionally left blank – section deleted]~~

1.4.2 The IESO shall not be required to conduct the analysis referred to in section 1.4.1 and shall cease investigation of the *investigated price* if, in the IESO's opinion: [Intentionally left blank – section deleted]

1.4.2.1 ~~the IESO does not have sufficient reliable information upon which to base the determination referred to in section 1.4.1; [Intentionally left blank – section deleted]~~

1.4.2.2 ~~the level of effort that would be required to conduct the analysis is large relative to the materiality of the anticipated impact of the investigated price; or [Intentionally left blank – section deleted]~~

1.4.2.3 ~~the conduct of the analysis would constitute an inefficient utilization of the IESO's resources, having regard to the IESO's other activities and to the desire to allocate resources to the investigation of energy offers and energy bids that are most likely to require remedial action pursuant to this Appendix. [Intentionally left blank – section deleted]~~

1.4.3 ~~Where, based on the analysis conducted in section 1.4.1 and on the criteria specified in section 1.4A, the IESO determines that: [Intentionally left blank – section deleted]~~

1.4.3.1 ~~the investigated price does not justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3, the IESO shall, subject to section 1.8, cease investigation of the investigated price; or [Intentionally left blank – section deleted]~~

1.4.3.2 ~~the investigated price may justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3, the IESO shall provide the registered market participant for the investigated facility with a reasonable opportunity to make representations as to why the investigated price does not justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3. As part of its representations, the registered market participant may request that the~~

~~*IESO* apply for the purpose of replacing the *investigated price* pursuant to section 1.4.5.1:~~

~~a. alternate high end or low end values in place of those prescribed by section 1.3.8, or~~

~~b. an alternate replacement price to the initial estimated replacement price referred to in section 1.2.1A. [Intentionally left blank – section deleted]~~

1.4.4 ~~Where, following a consideration of any representations made by the *registered market participant* for the *investigated facility* pursuant to section 1.4.3.2, the *IESO* determines that the *investigated price* does not justify the re-calculation of the congestion management *settlement* credit referred to in section 1.1.3, the *IESO* shall, subject to section 1.8, cease investigation of the *investigated price*. [Intentionally left blank – section deleted]~~

1.4.5 ~~Where, following a consideration of any representations made by the *registered market participant* for the *investigated facility* pursuant to section 1.4.3.2 and based on the criteria specified in section 1.4A, the *IESO* determines that the *investigated price* justifies the re-calculation of the congestion management *settlement* credit referred to in section 1.1.3: [Intentionally left blank – section deleted]~~

1.4.5.1 ~~the *IESO* shall replace the *investigated price* with the following as applicable, or such other value as may be agreed to by the *IESO* and the *market participant*:~~

~~a. in the case of a *constrained on generation unit* or a *constrained off dispatchable load*, the high end of the range determined in accordance with section 1.3.8.1;~~

~~b. in the case of a *constrained off generation unit* or a *constrained on dispatchable load*, the low end of the range determined in accordance with section 1.3.8.2;~~

~~c. [Intentionally left blank – section deleted]~~

~~d. in the case of persistent and significant *constrained off events* within *designated constrained off watch zones*, the initial estimated replacement price referred to in section 1.2.1A, or [Intentionally left blank – section deleted]~~

1.4.5.2 ~~the *IESO* may commence an inquiry pursuant to section 1.6.1. [Intentionally left blank – section deleted]~~

1.4.5A ~~Where section 1.4.5.1 applies, the *IESO* shall: [Intentionally left blank – section deleted]~~

1.4.5A.1 ~~re-calculate the congestion management *settlement* credit referred to in section 1.1.3 on the basis of the price referred to in section 1.4.5.1; and [Intentionally left blank – section deleted]~~

1.4.5A.2 ~~provide notice to the registered market participant for the investigated facility specifying:~~

~~a. the grounds and associated information upon which the IESO is relying in support of its intention to use, for settlement purposes, the re-calculated congestion management settlement credit referred to in section 1.4.5A.1;~~

~~b. an estimate of the replacement price for the investigated price referred to in section 1.4.5.1; and~~

~~c. the right of the registered market participant to request, within five business days of the date of receipt of the notice, an inquiry pursuant to section 1.6.1. [Intentionally left blank – section deleted]~~

1.4.6 ~~Where, following a consideration of any representations made by the registered market participant for the investigated facility pursuant to section 1.4.3.2 and the criteria specified in section 1.4A, the IESO determines that the investigated price may justify the re-calculation of the congestion management settlement credit referred to in section 1.1.3, the IESO may commence an inquiry pursuant to section 1.6.1. [Intentionally left blank – section deleted]~~

1.4.7 ~~[Intentionally left blank – section deleted]~~

1.4.7.1 ~~[Intentionally left blank – section deleted]~~

1.4.7.2 ~~[Intentionally left blank – section deleted]~~

1.4.7.3 ~~[Intentionally left blank – section deleted]~~

1.4.8 ~~Where a registered market participant requests an inquiry pursuant to section 1.4.5A.2c within the time referred to in that section, the IESO shall not take any action pursuant to section 1.4.5.1 and shall conduct an inquiry pursuant to section 1.6.1. [Intentionally left blank – section deleted]~~

1.4.9 ~~Where a registered market participant does not request an inquiry pursuant to section 1.4.5A.2c within the time referred to in that section, the IESO shall use, for settlement purposes, the re-calculated congestion management settlement credit referred to in section 1.4.5A.1. [Intentionally left blank – section deleted]~~

1.4A ~~Criteria for Re-calculating Congestion Management Settlement Credits~~[Intentionally left blank – section deleted]

1.4A.1 ~~Having established in section 1.3 that local market power existed or that persistent and significant constrained off events occurred within designated constrained off watch zones pursuant to section 1.2.1A, the re-calculation of the congestion management settlement credit referred to in section 1.1.3 shall be justified if the IESO establishes that the investigated price is not consistent with: [Intentionally left blank – section deleted]~~

- 1.4A.1.1 ~~the marginal costs of the *generation facility* that received the congestion management *settlement* credit; [Intentionally left blank – section deleted]~~
- 1.4A.1.2 ~~opportunity costs or replacement energy costs of a *generation facility*, *dispatchable load facility* or *boundary entity*; or [Intentionally left blank – section deleted]~~
- 1.4A.1.3 ~~value or benefits of consumption for a *dispatchable load facility* or an *exporting boundary entity*;~~

~~and such other additional values, benefits or costs as the *IESO* may determine relevant. [Intentionally left blank – section deleted]~~

1.4A.2 ~~Such values, benefits, and costs referred to in section 1.4A.1 will be based on information available to the *IESO* at the time of its decision under section 1.4, which may be: [Intentionally left blank – section deleted]~~

1.4A.2.1 ~~estimated information available to the *IESO*; or [Intentionally left blank – section deleted]~~

1.4A.2.2 ~~information provided by the *registered market participant* as part of its representations under section 1.4.3.2 or otherwise. [Intentionally left blank – section deleted]~~

1.5 [Intentionally left blank – section deleted]

1.5.1 [Intentionally left blank – section deleted]

1.5.1.1 [Intentionally left blank – section deleted]

1.5.1.2 [Intentionally left blank – section deleted]

1.5.2 [Intentionally left blank – section deleted]

1.6 Inquiry[Intentionally left blank – section deleted]

1.6.1 ~~Where the *IESO* determines that an inquiry is required under section 1.4.5.2 or section 1.4.6 or an inquiry is requested by the *registered market participant* for the *investigated facility* under section 1.4.5A.2c, the *IESO* shall conduct an inquiry to determine whether the *investigated price* falls within the range determined in accordance with section 1.6.3 or 1.6.6, as the case may be, and shall notify the *registered market participant* for the *investigated facility* of the commencement of the inquiry. During such inquiry, the *IESO* shall provide the *registered market participant* for the *investigated facility* with a reasonable opportunity to make representations as to why the *investigated price* does not justify the re-calculation of the congestion management *settlement* credit referred to in section 1.1.3 including, but not limited to, representations: [Intentionally left blank – section deleted]~~

- 1.6.1.1 ~~as to the costs that should be considered for purposes of the determination referred to in section 1.6.3; [Intentionally left blank – section deleted]~~
- 1.6.1.2 ~~where section 1.6.6 applies, as to the costs or other information that should be considered for purposes of the determination referred to in that section; and [Intentionally left blank – section deleted]~~
- 1.6.1.3 ~~where applicable, as to the costs that should be considered for purposes of the adjustment referred to in section 1.6.4 and the revenues, operating income and forecasts or estimates referred to in section 1.6.5. [Intentionally left blank – section deleted]~~
- 1.6.2 ~~The IESO shall, for the purposes of determining the range referred to in section 1.6.1, notify the *registered market participant* for the *investigated facility* of the information required to be submitted by it for that purpose and shall use such information to the extent that the IESO determines that such information is complete and accurate. The *registered market participant* shall supply this information to the IESO by the date specified in the notification. Where the IESO determines that such information is incomplete or inaccurate, or where the IESO considers that the information received from the *registered market participant* is insufficient for the purpose of determining the range referred to in section 1.6.1, the IESO may refer the matter to the *dispute resolution panel* pursuant to section 2 of Chapter 3 and request, in the *notice of dispute*, that the *dispute resolution panel* complete the inquiry. [Intentionally left blank – section deleted]~~
- 1.6.3 ~~The IESO shall determine the range referred to in section 1.6.1 with respect to a *constrained on generation unit* or a *constrained off generation unit* in accordance with the following: [Intentionally left blank – section deleted]~~
- 1.6.3.1 ~~the low end of the range shall be the short run marginal cost associated with that portion of the *generation unit's* output that was *dispatched* as a *constrained on generation unit* or a *constrained off generation unit* determined on the basis of:~~
- ~~a. fuel costs;~~
 - ~~b. variable operating and maintenance costs;~~
 - ~~c. opportunity costs; and~~
 - ~~d. any other appropriate costs,~~
- ~~adjusted, where applicable and as the IESO may determine appropriate, by deducting an amount equal to the cycle costs incurred in circumstances where a *constrained off generation unit* was required to cease operation solely as a result of being *dispatched* as a *constrained off generation unit*. For the purposes of calculating the short run marginal cost, the IESO may exclude any of the foregoing cost factors, or estimate any of these cost factors, in the event the *market participant* does not supply the necessary information as requested by the IESO pursuant to section 1.6.2; and [Intentionally left blank – section deleted]~~

- 1.6.3.2 ~~the high end of the range shall be 110 percent of the amount calculated in accordance with section 1.6.3.1, adjusted in accordance with one or both of the following as may be applicable and as the IESO may determine appropriate:~~
- ~~a. by adding an amount equal to the cycle costs incurred in circumstances where a *constrained on generation unit* was required to operate solely as a result of being *dispatched as a constrained on generation unit*; and~~
 - ~~b. where section 1.6.4 applies, adding an amount equal to the *investigated facility's* fixed and embedded costs or such portion thereof as determined appropriate by the IESO in accordance with that section. [Intentionally left blank – section deleted]~~

1.6.4 ~~Where an investigated facility is a constrained on generation unit that, in the IESO's opinion based on the investigated facility's operating history: [Intentionally left blank – section deleted]~~

- 1.6.4.1 ~~has not recovered, during the twelve month period prior to the *constrained on event* to which the *investigated price* relates:~~
- ~~a. the whole of the operating costs; and~~
 - ~~b. such portion of the fixed and embedded costs as determined appropriate by the IESO;~~
- ~~associated with having been dispatched as a *constrained on generation unit* as a result of that *constrained on event*; or [Intentionally left blank – section deleted]~~

- 1.6.4.2 ~~in the case of a *generation unit*:~~
- ~~a. that commenced operations less than twelve months prior to the *constrained on event* in respect of which the *investigated price* was submitted; or~~
 - ~~b. with respect to which the *constrained on event* to which the *investigated price* relates occurred less than twelve months following the *market commencement date*;~~
- ~~might not recover, during the twelve month period beginning on the date of commencement of operations referred to in section 1.6.4.2(a) or the *market commencement date*, as the case may be,~~

~~the IESO may make the adjustment referred to in section 1.6.3.2(b) in such amount as determined appropriate by the IESO, based on the considerations referred to in section 1.6.5. [Intentionally left blank – section deleted]~~

1.6.5 ~~In determining whether to make the adjustment referred to in section 1.6.4 and in determining the amount of any such adjustment, the IESO shall: [Intentionally left blank – section deleted]~~

1.6.5.1 ~~consider the *investigated facility's* revenues and operating income associated with dispatch of the *investigated facility* prior to the *constrained on event* to which the *investigated price* relates; and [Intentionally left blank – section deleted]~~

1.6.5.2 ~~where section 1.6.4.2 applies consider:~~

~~a. the *investigated facility's* revenues and operating income associated with dispatch of the *investigated facility* prior to the *constrained on event* to which the *investigated price* relates; and~~

~~b. based on such forecasts or estimates as the *IESO* considers appropriate including, but not limited to, prorating the revenues and operating income referred to in section 1.6.5.2(a) over the period equal to the difference between (i) and (ii) referred to below in this section 1.6.5.2(b), the revenues and operating income that may be projected or estimated to be associated with *dispatch* of the *investigated facility* for a period equal to the difference between: (i) twelve months; and (ii) the period of time between the date of commencement of operations referred to in section 1.6.4.2(a) or the *market commencement date*, as the case may be, and the *constrained on event* to which the *investigated price* relates. [Intentionally left blank – section deleted]~~

1.6.6 ~~The *IESO* shall determine the range referred to in section 1.6.1 with respect to an *investigated facility* that is a *constrained on dispatchable load* or a *constrained off dispatchable load* in accordance with the following: [Intentionally left blank – section deleted]~~

1.6.6.1 ~~the low end of the range shall be 90 percent of the value or opportunity costs associated with that portion of the *facility's* consumption that was *dispatched* as a *constrained on dispatchable load* which may be determined on the basis of:~~

~~a. net profit or value associated with consumption, excluding the costs of purchasing *energy*;~~

~~b. opportunity costs, which may be the alternate cost for obtaining *energy* for consumption; and~~

~~c. any other appropriate value or benefits of consumption to the *market participant*;~~

~~adjusted, where applicable and as the *IESO* may determine appropriate, by adding an amount equal to the cycle costs incurred in circumstances where a *constrained on dispatchable load* was required to operate solely as a result of being *dispatched* as a *constrained on facility*. For the purposes of calculating the value or opportunity cost, the *IESO* may exclude any of the foregoing cost factors, or estimate any of these cost factors, in the event the *market participant* does not supply the necessary information as requested by the *IESO* pursuant to section 1.6.2. [Intentionally left blank – section deleted]~~

- 1.6.6.2 ~~the high end of the range shall be 110 percent of the amount calculated in accordance with section 1.6.6.1 and adjusted, as may be applicable and as the IESO may determine appropriate, by adding an amount equal to the cycle costs incurred in circumstances where the facility was dispatched as a constrained off dispatchable load. [Intentionally left blank – section deleted]~~
- 1.6.7 ~~Where the investigated price falls outside the range determined in accordance with section 1.6.3 or 1.6.6, as the case may be, the IESO: [Intentionally left blank – section deleted]~~
- 1.6.7.1 ~~shall replace the investigated price with a price determined in accordance with section 1.6.8 and revise, for settlement purposes, the congestion management settlement credit referred to in section 1.1.3 on the basis of such price; [Intentionally left blank – section deleted]~~
- 1.6.7.2 [Intentionally left blank – section deleted]
- 1.6.7.3 ~~shall provide the registered market participant for the investigated facility with written reasons describing the manner in which the range referred to in section 1.6.7 and the revision referred to in section 1.6.7.1 have been calculated. [Intentionally left blank – section deleted]~~
- 1.6.8 ~~The price at which the IESO shall, pursuant to section 1.6.7.1, replace the investigated price shall be determined as follows: [Intentionally left blank – section deleted]~~
- 1.6.8.1 ~~where the investigated facility is a constrained on generation unit, the amount determined pursuant to section 1.6.3.2; [Intentionally left blank – section deleted]~~
- 1.6.8.2 ~~where the investigated facility is a constrained off generation unit, the amount determined pursuant to section 1.6.3.1; [Intentionally left blank – section deleted]~~
- 1.6.8.3 ~~where the investigated facility is a constrained off dispatchable load, the amount that represents the high end of the range referred to in section 1.6.1, determined in accordance with the methodology developed pursuant to section 1.6.6; and [Intentionally left blank – section deleted]~~
- 1.6.8.4 ~~where the investigated facility is a constrained on dispatchable load, the amount that represents the low end of the range referred to in section 1.6.1, determined in accordance with the methodology developed pursuant to section 1.6.6. [Intentionally left blank – section deleted]~~
- 1.6.9 [Intentionally left blank – section deleted]
- 1.6.10 ~~Where the investigated price falls within the range calculated in accordance with section 1.6.3 or 1.6.6, as the case may be, the IESO shall not take the action referred to in section 1.6.7 and shall notify the registered market participant for the investigated facility accordingly. [Intentionally left blank – section deleted]~~

1.7 Settlement~~[Intentionally left blank – section deleted]~~

1.7.1 ~~Where the IESO revises a *settlement credit* in accordance with section 1.4.5.1 or 1.6.7.1: [Intentionally left blank – section deleted]~~

1.7.1.1 ~~the revision shall be applied, in accordance with section 1.7.2, to the last *preliminary settlement statement* issued to:~~

~~a. the *metered market participant* for the *investigated facility* that is a *generation unit* or *dispatchable load*, or~~

~~b. the *registered market participant* for the *investigated facility* that is a *boundary entity*~~

~~for the current *billing period* for which such revised *settlement credit* is calculated; and [Intentionally left blank – section deleted]~~

1.7.1.2 ~~a consequential revision effected in accordance with section 1.7.2 shall, where applicable, be applied in accordance with section 4.8.2 of Chapter 9. [Intentionally left blank – section deleted]~~

1.7.2 ~~Where the IESO determines that a revision referred to in section 1.7.1.1 and a consequential revision referred to in section 1.7.1.2 are required to reflect alterations to payments due on a previous *invoice*, the IESO shall: [Intentionally left blank – section deleted]~~

1.7.2.1 ~~for the *market participant* for the *investigated facility* referred to in section 1.7.1.1, reflect the revision in the *market participant's* last *preliminary settlement statement* issued for the current *billing period* for which the revised *settlement credit* is calculated; [Intentionally left blank – section deleted]~~

1.7.2.2 ~~for the *market participant* for the *investigated facility* referred to in section 1.7.1.1, include in the *preliminary settlement statement* a debit adjustment reflecting *default interest* on the difference between:~~

~~a. the amount of the *settlement credit* as revised in accordance with section 1.4.5.1 or 1.6.7.1, and~~

~~b. the amount of the *settlement credit* that would otherwise have been applicable,~~

~~accrued:~~

~~c. from the *date* on which overpayment was made to the *market participant* for the *investigated facility* for the *constrained on event* or the *constrained off event* to which the *investigated price* relates,~~

~~d. to the *market participant payment date* to which the *preliminary settlement statement* relates; and [Intentionally left blank – section deleted]~~

1.7.2.3 ~~apply the amounts received pursuant to section 1.7.2.1 and 1.7.2.2 in accordance with section 4.8.2 of Chapter 9. [Intentionally left blank – section deleted]~~

1.7.2.4 [Intentionally left blank]

1.7.2.5 [Intentionally left blank]

1.7.3 [Intentionally left blank]

1.7.3.1 [Intentionally left blank]

1.7.3.2 [Intentionally left blank]

1.7.4 [Intentionally left blank – section deleted]

1.8 ~~No Prejudice to Other Investigations~~[Intentionally left blank – section deleted]

1.8.1 ~~Nothing in this Appendix shall preclude the *market assessment unit* or the *market surveillance panel* from conducting, in accordance with section 3 of Chapter 3, any monitoring or evaluation activity or analysis or any investigation with respect to or that involves an *energy bid* or an *energy offer* that has been the subject of an investigation or inquiry pursuant to this Appendix, provided that no *registered market participant* shall, as a result of such activity, analysis or investigation, be subject to the imposition of any financial sanction by the *IESO* other than the revision of a *settlement credit* effected in accordance with this Appendix. [Intentionally left blank – section deleted]~~

1.9 ~~Non-application~~[Intentionally left blank – section deleted]

1.9.1 ~~Notwithstanding any other provision of this Appendix, the *IESO* shall not commence or continue an investigation or an inquiry pursuant to this Appendix in respect of an *energy offer* or an *energy bid* submitted by a *constrained off facility* or a *constrained on facility* where it is determined that the *facility*: [Intentionally left blank – section deleted]~~

1.9.1.1 ~~is one with respect to which there exists a *reliability must-run contract* or a *contracted ancillary services contract* with the *IESO* that contains provisions fixing, by reference to a pre-determined amount or to a formula, the price at which *energy offers* or *energy bids* are to be submitted thereunder and the *investigated price* is consistent with such pre-determined amount or formula; and [Intentionally left blank – section deleted]~~

1.9.1.2 ~~was dispatched as a *constrained on facility* or a *constrained off facility* pursuant to and in accordance with such *reliability must-run contract* or such *contracted ancillary services contract*. [Intentionally left blank – section deleted]~~

