



Market Manual 4: Market Operations
Part 4.2: Submission of
Dispatch Data in the
Real-Time Energy and
Operating Reserve
Markets

Issue 41.0

This procedure provides guidance to *Market Participants* on the submission of *dispatch data* in the Real-Time *Energy* and *Operating Reserve Markets*.

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This *market manual* may contain a summary of a particular *market rule*. Where provided, the summary has been used because of the length of the *market rule* itself. The reader should be aware, however, that where a *market rule* is applicable, the obligation that needs to be met is as stated in the “Market Rules”. To the extent of any discrepancy or inconsistency between the provisions of a particular *market rule* and the summary, the provision of the *market rule* shall govern.

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Table of Changes

Reference (Paragraph and Section)	Description of Change
Throughout Document	Changed “Participant Life Cycle (PLC)” references to “IESO Registration Solution” Minor editorial changes for clarity; not changes in processes or requirements
Section 1.3.3	Revisions related to the timing of submission of dispatch data for DACP and initial pre-dispatch (revision due to EDAC project)
Section 1.3.4	Revision to include DACP as part of Daily Energy Limit submissions (revision due to EDAC project)
Section 1.3.6	Revision related to segregated mode of operation (SMO) submissions for DACP (revision due to EDAC project)
Section 1.3.7	Revised timing for initial <i>pre-dispatch schedule</i> (revision due to EDAC project)

Market Manuals

The *market manuals* consolidate the market procedures and associated forms, standards, and policies that define certain elements relating to the operation of the *IESO-administered markets*. Market procedures provide more detailed descriptions of the requirements for various activities than is specified in the "Market Rules". Where there is a discrepancy between the requirements in a document within a *market manual* and the "Market Rules", the "Market Rules" shall prevail. Standards and policies appended to, or referenced in, these procedures provide a supporting framework.

Market Procedures

The "Market Operations Manual" is Volume 4 of the *market manuals*, where this document forms "Part 4.2: Submission of dispatch Data in the Real-Time Energy and Operating Reserve Markets".

A list of the other component parts of the "Market Operations Manual" is provided in "Part 4.0: Market Operations Overview", in Section 2, "About This Manual".

Structure of Market Procedures

Each market procedure is composed of the following sections:

1. the "**Introduction**", which contains general information about the procedure, including an overview, a description of the purpose and scope of the procedure, and information about the roles and responsibilities of the parties involved in the procedure;
2. the "**Procedural Work Flow**", which contains a graphical representation of the steps and flow of information within the procedure;
3. the "**Procedural Steps**", which contains a table that describes each step and provides other details related to each step; and
4. the "**Appendices**", which may include such items as forms, standards, policies, and agreements.

Conventions

The *market manual* standard conventions are as defined in the "Market Manual Overview" document.

– End of Section –

1. Introduction

1.1 Purpose

This document provides *market participants* with the information necessary for submitting *dispatch data* in the real-time *energy* and *operating reserve* markets. The submission of *dispatch data* for a *registered facility*, other than a *boundary entity*, is the responsibility of the *market participant* who is registered with the *IESO* as the *registered market participant* for a specific *facility*. All references within this document to a *market participant*, in the context of submitting *dispatch data* for a *registered facility*, other than a *boundary entity*, should be taken to mean the *registered market participant*. (See the "Market Manual 1: Market Entry, Maintenance & Exit, Part 1.2: Facility Registration, Maintenance & De-registration" for more information on this process.)

Market participants may also submit *dispatch data* for *boundary entity* resources where they have previously registered the capability to import and/or export *energy* (and/or import *operating reserve*) through a *boundary entity*, as part of the participant authorization process. (See the "Market Manual 1: Market Entry, Maintenance & Exit, Part 1.1: Participant Authorization, Maintenance & Exit" for more information on this process.)

Dispatch data consists of:

- offers to provide *energy* and *operating reserve* by a dispatchable *generation facility* or a *boundary entity*;
- bids to take *energy* and offers to provide *operating reserve* by a *market participant* having a dispatchable load *facility* or a *boundary entity*;
- self-schedules for the provision of *energy* by self-scheduling *generation facilities*, and *transitional scheduling generators*;
- forecasts for the *energy* expected to be provided by intermittent *generation facilities*.

This *market manual* also provides a procedure for changing *dispatch data*, and describes the steps followed by the *IESO* for processing *dispatch data* and changes and its subsequent publication of the System Status Report and *pre-dispatch schedule* (and notification to scheduled *market participants*).

This *market manual* does not describe the processes related to the Transitional Demand Response Program (TDRP). See "Market Manual 5: Part 5.10 Transitional Demand Response Program" for information on the processes and procedures related to the TDRP.

1.2 Scope

This *market manual* is intended to provide *market participants* with a summary of the steps and interfaces between *market participants*, the *IESO*, and other parties for submitting *dispatch data* in the real-time *energy* and *operating reserve* markets. The procedural work flows and steps described in this document serve as a roadmap for *market participants* and the *IESO*, and reflect the requirements set out in the *market rules* and applicable *IESO* policies and standards.

The procedure does not apply when the *IESO-administered markets* are suspended. See "Market Manual 4: Part 4.5 Market Suspension and Resumption" for more information on the processes to be followed in this situation.

The overview information in Section 1.3, below, is provided for context purposes only, highlighting the main actions that comprise the procedure as set out in Section 2.

Transmission system information to be provided by *transmitters* ("Market Rules", Chapter 7, Section 3.4.2 and Section 3.9), is not included as part of this *market manual*.

1.3 Overview of the Real-Time Energy and Operating Reserve Markets

The real-time *energy* and *operating reserve* markets are electricity markets administrated by the *IESO*, which, for purposes of submitting and revising *dispatch data*, operate in advance of and up to the *dispatch hour*. Based on this *dispatch data*, the *IESO* determines *dispatch instructions* for each registered *facility* and *boundary entity* as the primary means of coordinating the operation of the *physical markets* during the *dispatch hour*. The *IESO* continues to perform administrative tasks relative to these markets, such as the *settlements* functions, after the *dispatch hour*.

Dispatch data in the real-time *energy* and *operating reserve* markets consists of *offers* to provide *energy* and/or *operating reserve*, *bids* for the withdrawal of *energy*, *offers to reduce energy* withdrawals, *self-schedules* and forecasts for the provision of *energy*

Dispatch data for the real-time *energy* and *operating reserve* markets is submitted separately, but follows the same procedure and is therefore discussed together for purposes of this document.

Each applicable *market participant* may submit *dispatch data* for its *registered facilities* for any or all hours of a *dispatch day* subject to the limitations set out in this manual.

1.3.1 Offers and Bids for Energy and Offers for Operating Reserve in the Real-Time Energy Markets

There are four types of *market participants* who may submit *offers* and *bids* for *energy* or, in addition, *offers* for *operating reserve* in the real-time *energy* and *operating reserve* markets (Ch.7, Sections 3.4.1.1 and 3.4.1.2 of the *market rules*):

- ***generators*** having dispatchable *generation facilities*, who submit *offers* to provide *energy* or, in addition, *operating reserve* for *registered facilities*;
- ***market participants*** with *dispatchable loads* submitting *bids* to take *energy* or, in addition, *offers* to provide *operating reserve* for *registered facilities*;
- ***market participants*** with a boundary entity capability who submit *bids* and *offers* to import *energy* to, export *energy* from, and/or, in addition, import *operating reserve* to, the Ontario market.

Additionally, the *IESO* may include voltage reductions and reductions in the *thirty-minute operating reserve* requirements within allowable *reliability standards* as standing *offers* in the *operating reserve* markets subject to the following conditions:

- the *IESO* shall introduce such standing *offers* in increasing quantities (Ch.5, s. 4.5.6A.1 of the *market rules*);
- the prices and quantities of the standing *offers* shall be determined by the *IESO Board* (Ch.5, s. 4.5.6A.2 of the *market rules*);
- the *IESO Board* may specify the circumstances under which any one or more of the quantities may either be withdrawn or not introduced, and the manner in which any such withdrawal will be effected (Ch.5, s. 4.5.6A.3 of the *market rules*); and

- the prices and quantities of the standing *offers* set by the *IESO Board* shall be monitored by the *IESO* to assess their impacts and so that any changes to the prices and quantities would be recommended to the *IESO Board* as necessary (Ch.5, s. 4.5.6A.5 of the *market rules*).

Market participants may submit initial *offers* to supply *energy* and *operating reserve*, *offers* to reduce *energy* withdrawals, or *bids* to take *energy*, for any or all *dispatch* hours of a *dispatch day*. *Dispatch data* is submitted using the web-based *market participant* interface. See the “Market Participant Graphical User Interface (GUI) Users Guide” for detailed information as to how to operate this interface. In the event that the *Market Participant* Interface is unavailable, the *IESO* will follow a contingency plan for the submission of *dispatch data* (see Appendix D) (Ch.7, s. 3.2.1 of the *market rules*).

A *market participant* may submit only one *offer* for *energy* or to reduce *energy* withdrawals, or one *bid* for *energy* with respect to a given *registered facility* for any *dispatch hour*. If more than one *offer* or *bid* is submitted for a given *registered facility* in a given *dispatch hour*, only the latest valid and accepted *offer* or *bid* will be considered. (Ch.7, s. 3.5.1 of the *market rules*)

A *market participant* must provide *dispatch data* to the *IESO* for all *registered facilities* for which *dispatch data* is required even if that *market participant* has all sales or purchases of *energy* covered by a physical bilateral contract. (Ch.7, s. 3.3.1 and 3.3.12 of the *market rules*)

There are three classes of *operating reserve* that may be offered: 10-minute synchronized *operating reserve*, 10-minute non-synchronized *operating reserve*, and 30-minute *operating reserve*. Each *offer* to provide *operating reserve* must be accompanied by a corresponding *energy offer* or *energy bid* that covers the same megawatt (MW) range (Ch.7, s. 3.6.3 of the *market rules*). The classes of *operating reserve* for which a *market participant* can submit *dispatch data* with respect to a specific *registered facility*, other than a *boundary entity*, are established during the *market entry* process. See "Market Manual 1: Market Entry, Maintenance & Exit, Part 1.2: Facility Registration, Maintenance & De-registration". *Boundary entities* are registered through the Participant Authorization process (see “Market Manual 1: Market Entry, Maintenance and Exit, Part 1.1 Participant Registration, Maintenance and Exit”) and are allowed to submit *dispatch data* for export/import of *energy* and import of non-synchronized *operating reserve*.

If the *dispatch data* provided 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 submit standing *dispatch data* (i.e. standing *offers* and standing *bids*) for that *registered facility* (Ch.7, s. 3.3.9 of the *market rules*). Standing *dispatch data* must be submitted prior to 06.00 EST on the pre-*dispatch day* and include the *offer* or *bid* for each *dispatch hour* of each *dispatch day* being submitted.

Standing *dispatch data* will remain in effect until the day after the expiration date specified in the standing *dispatch data*, unless withdrawn earlier by the *market participant* or revised by the *market participant* (Ch.7, s. 3.3.9.2 of the *market rules*):

- as standing *dispatch data* prior to 06:00 EST on the pre-*dispatch day*; or
- through the process of submitting daily *dispatch data* described in this procedure.

Generators having *generation facilities* operable in *segregated mode of operation* are responsible for submitting requests for segregation and for making revisions, as required, to *dispatch data* within the specified timeframe (see “Market Rules”, Appendix 7.7 and Section 1.3.6 of this manual).

1.3.2 Energy Schedules and Forecasts

There are three types of *market participants* who must submit *energy* schedules or *energy* forecasts in the real-time *energy* and *operating reserve* markets (Ch.7, s. 3.4.1 of the *market rules*):

- **generators** having *self-scheduling generation facilities* must submit *dispatch data* indicating the amount of *energy* to be provided by each *self-scheduling generation facility* in each *dispatch hour*;
- **generators** having intermittent *generation facilities* must submit a forecast of the amount of *energy* that they expect to be injected in each *dispatch hour*;
- **generators** having *transitional scheduling generator facilities* must submit *dispatch data* indicating the amount of *energy* to be provided by each *transitional scheduling generation facility* in each *dispatch hour*.

These *energy* schedules and forecasts are submitted through the schedule template in Appendix B.

1.3.3 Timing of the Real-Time Energy and Operating Reserve Markets

Dispatch data may be submitted, without restriction, from 06:00 EST on the *pre-dispatch day* until two hours prior to the *dispatch hour* for which the submitted data applies (Ch.7, s. 3.3.1 and 3.3.3 of the *market rules*). *Market participants* may also submit standing *dispatch data* instructions to the *IESO* where these instructions will not change from *trading week* to *trading week* (Ch.7, s. 3.3.9 of the *market rules*). The *IESO* will apply these instructions, for the duration specified by the *market participant*, without further instructions being required from the *market participant*.

Standing *dispatch data* for specified *dispatch hours* of a *dispatch day* may be submitted at any time in advance of 06:00 EST on the *pre-dispatch day*. However, standing *dispatch data* submitted in advance will not be processed by the *IESO* until 06:00 EST on the *pre-dispatch day* (the day prior to the *dispatch day* to which the data applies). Revisions to initial *dispatch data* may be made without restriction until two hours prior to the start of the *dispatch hour* for which the *dispatch data* applies (Ch.7, s. 3.3.9.2 of the *market rules*).

The process for submitting *dispatch data* and unrestricted changes is given in Section 2.1. The timing of events is as set out below:

1. *Market participants* submit standing *dispatch data* without restriction in advance of the *dispatch day*.
2. At 06:00 EST on the *pre-dispatch day*, the *IESO* begins processing *dispatch data* for the *dispatch day*. At this time all valid *bids* and *offers* for the *dispatch day* (including valid standing *offers* and *bids* received prior to 06:00 EST on the *pre-dispatch day*) will be considered. *Market participants* may continue submitting *dispatch data* for use in the day-ahead commitment process (DACP) until 10:00 EST (Ch.7, s. 3.3A of the *market rules*).
3. After 10:00 EST, the *IESO* will begin the DACP. Refer to Market Manual 9: Day-Ahead Commitment Process, Part 9.2, Submitting Operational and Market Data for DACP, for more information on restrictions that apply to the submission of *dispatch data* during DACP (10:00 EST to 14:00 EST).
4. After 14:00 EST, *market participants* may continue to submit *dispatch data* and revisions for any *dispatch hour* or hours in the *dispatch day* subject to the restrictions set out in this manual, until two hours prior to the *dispatch hour* for which the *dispatch data* or revision is being submitted (Ch.7, s. 3.3.3 of the *market rules*).

5. After 15:00 EST the *IESO* will begin the initial *pre-dispatch* process, which will be completed by 16:00 EST. All *dispatch data* that has been received and validated at this time will be used in the *pre-dispatch* process.
6. As revisions to the *dispatch data* are made, subsequent publications and releases of the *pre-dispatch schedule* will be necessary to reflect their impact on the pre-dispatch results. Following each hour in which such revisions occur, the *IESO* will again initiate the pre-dispatch process as necessary and provide any applicable notification and publication when appropriate based on material changes. This process will continue, with the *IESO* making subsequent publications and release of the *pre-dispatch schedule*, as revisions require¹ (Ch.7, s. 3.5.1 of the *market rules*). (Refer to Appendix E for further information on the process for *pre-dispatch schedule* production and publication.)
7. Following the initial publication and release of the *pre-dispatch schedule*, and then as appropriate on subsequent publications and releases based on material changes, the *IESO* will *publish* the associated projected market prices for *energy* and each class of *operating reserve* and the associated projected *market schedule* (Ch.7, s. 5.4 of the *market rules*). The *IESO* must release the *pre-dispatch schedule* for each individual *registered facility* only to the *market participant* who submitted the information for that *facility* (Ch.7, s. 5.5 of the *market rules*). (Refer to Appendix E for further information on the process for pre-dispatch production and publication.)

Market participants may make changes to their *dispatch data* if the following conditions are met (Ch.7, s. 3.3 of the *market rules*).

1. From two hours prior to the *dispatch hour* until 60 minutes prior to commencement of the *dispatch hour*: a change to *bids* and *offers* relating to a *boundary entity* may be accepted by the *IESO* if the conditions of the *market rules* are met and if the change complies with the *IESO Short Notice Change Criteria* (see Appendix C)². Market mechanisms are to be used as much as possible to solve problems with the *pre-dispatch schedule*.
2. From two hours prior to the *dispatch hour*, until 10 minutes prior to the commencement of the *dispatch hour*: a change to *dispatch data* relating to a *registered facility*, other than a *boundary entity*, may be accepted by the *IESO* if the conditions of the *market rules* are met and the change complies with the *IESO Short Notice Change Criteria* (see Appendix C). Market mechanisms are to be used as much as possible to solve problems with the *pre-dispatch schedule*.

The *IESO* may reject any *dispatch data* or revision to *dispatch data* submitted by a *market participant*, or may direct a *market participant* to submit or resubmit a revision to the quantity element of its *dispatch data*, or both, if system *security* or *local area reliability* considerations require such an action (Ch.7, s. 3.3.10, 3.3.12 and 3.3.13 of the *market rules*). *Market participants* should consult the *System Status Report (SSR)* for any applicable advisories, warnings and problems.

Finally, a *market participant* must submit revised *dispatch data* to the *IESO* as soon as practical for any of its *registered facilities* if, for any *dispatch hour* in the current *pre-dispatch schedule*, the quantity of any *physical service* scheduled for that *registered facility* differs from the quantity the *market participant* expects to be delivered or withdrawn by more than the greater of 2% of the

¹ The *IESO* intends to run pre-dispatch hourly to set the *interchange schedules* for interchange and the intention is to publish the results of each pre-dispatch run.

² The 60 minute cut-off reflects the fact that the *interchange schedule* is set by the last pre-dispatch schedule run for the hour before the dispatch hour.

dispatch instruction or 10 MW³ (Ch.7, s. 3.3.8 of the *market rules*). *Dispatch data* revisions are not required for:

- the current hour;
- the next hour when it is less than 10 minutes to the start of the hour; and
- an hour when it is reasonably expected that the *dispatch data* deviation will be eliminated mid-hour because the limitation will end.

However, in such cases, the *market participant* is required to notify the *IESO* of such *dispatch data* deviation (see Market Manual 4, Part 4.3 - Real Time Scheduling of the Physical Markets, Sections 1.8.1 and 1.8.5).

Generation Units With Start-Up Delays

The current optimization algorithm for *pre-dispatch* does not take into account the inherent start-up delays of fossil *generation units* and may schedule these units without consideration to the time required to prepare and synchronize to the *IESO-controlled grid*.

If such *generation units* are scheduled by *pre-dispatch* within a timeframe that does not accommodate their start-up delay, *market participants* are obligated to withdraw the *dispatch data* for these units for the hours in which they are not able to synchronize to the *IESO-controlled grid*.

If, for the foregoing reasons, *market participants* seek to withdraw dispatch data, the *IESO* will authorize a withdrawal of *dispatch data*:

- in the mandatory window, if the units have a start-up delay of less than 2 hours; and
- if such withdrawal does not pose a risk in relation to the *reliability* or *security* of the *electricity system*.

For *generation units* with a start-up delay of more than 2 hours, *market participants* should withdraw *dispatch data* not less than 2 hours prior to the *dispatch hour*. The *IESO* will authorize withdrawal of *dispatch data* in the mandatory windows only if the withdrawal complies with the *IESO Short Notice Change Criteria* (see Appendix C).

Replacement Energy Offers

The Replacement Energy Offers program (Ch. 7, Sec. 3.3.4B & 3.3.4C of the *market rules*) allows *registered market participants* whose hydroelectric *generation facility*, combined cycle *generation facility*, *enhanced combined cycle facility* or *cogeneration facility* experiences a *forced outage* to submit revised *dispatch data* for a related *generation facility*, with respect to any *dispatch hour* up until 10 minutes prior to the beginning of that *dispatch hour*. If the revised *dispatch data* is submitted less than 10 minutes prior to the beginning of that *dispatch hour*, the revised *dispatch data* will apply to the subsequent *dispatch hour*.

Related *generation facilities* are *generation facilities* that, in the case of a hydroelectric *generation facility*, can utilize the water of the *generation facility* experiencing the *forced outage* without delay. In the case of combined cycle *facilities*, *enhanced combined cycle facilities* or *cogeneration facilities*, related *generation facilities* are *generation facilities* that can make up the loss in steam production to the steam turbine unit that would otherwise have been produced by the gas turbine unit experiencing the *forced outage*.

³ In some situations (e.g. when an *Emergency Operating State* is anticipated), the *IESO* may request that the *market participants* submit *dispatch data* that is more accurate than allowed by these criteria.

The submission of the revised *dispatch data* must take place no later than one hour after the *generation facility* experiences the *forced outage* and is limited to a maximum of the MW amount that had been offered by the *generation facility* experiencing the *forced outage*.

The *registered market participant* must notify the *IESO* via telephone to report the outage (as per the outage process), and make a request to submit a replacement offer. The market participant must then indicate which *generation facility* is expected to be unavailable, the affected MW amount and which *generation facility* will replace the unavailable MW. Where the related *generation facility* is not synchronized the *market participant* must notify the *IESO* of its intention to synchronize the related *generation facility*.

In the interim period, before the *dispatch data* is processed by the market tools, the *IESO* shall accept the replacement energy from the related *generation facility* for the facility that has been forced out, provided there is no adverse impact on the reliability of the *IESO-controlled grid*.

The related *generation facility* that is specified for replacement energy must have the same *metered market participant* as the *generation facility* experiencing the forced outage. In addition, both *generation facilities* must have the same *registered market participant*.

1.3.4 The Structure of Dispatch Data

Energy Offers and Bids

Each *energy offer* and *energy bid* for real time must contain at least 2 and may contain up to 20 *price-quantity pairs* for each *dispatch hour*. Price is to be expressed in dollars and whole cents per megawatt-hour (MWh), and the quantity in megawatts (MW) per hour.

For *generation facilities* that have registered *forbidden regions* with the *IESO*, *price-quantity pairs* for each *dispatch hour* must respect these regions, such that the submitted *price quantity pairs* must include a quantity equal to each of the lower and upper limits of each *forbidden region* within the offer range. *Dispatch data* submissions that do not respect such information will be rejected by the *IESO* for the affected *generation facility* and for the affected *dispatch hour(s)* (Ch. 7, S2.2.6A of the *market rules*).

Should a *market participant* wish to operate a *facility* below its registered *minimum loading point* (PMIN) an *outage slip* is to be submitted to derate the *facility* to the output desired 2 hours prior to the derate. This is to be done in conjunction with and at the same time as submission of *offers* to economically schedule the *facility* to this desired output. *Operating reserve* is unavailable when a *generation facility* operates below its *minimum loading point*.

Note: The *outage* start and end times corresponds to the period of time the *market participant* wishes the *facility* to operate below PMIN.

In the case of *generation facilities* participating in the Real-Time Generation Cost Guarantee (RT-GCG) program (also known as Spare Generation On Line or SGOL), the *offer price* in the *price-quantity pairs* corresponding to the *minimum loading point* for all hours of the *minimum generation block run-time* must be the same until after the *IESO* has constrained on the *generation facility*.

The quantity in the case of a *registered facility* other than a *boundary entity*, must be expressed in MW (or MWh/hour) to one decimal place and not be less than 0.0 MW (or 0.0 MWh/hour). In the case of a *registered facility* that is a *boundary entity*, quantities must be expressed in whole MW (or MWh/hour) and not be less than 0 MW (or 0 MWh/hour). The quantity in the first *price-quantity pair* within each *bid* must be set at 0.0 MW or 0 MW as applicable. (Ch.7, s. 3.5.3 of the *market rules*)

Prices may be negative with such negative prices meaning (Ch.7, s. 3.5.4 of the *market rules*):

- in an *energy offer*, that the *registered market participant* is willing to pay up to that price for each MWh of *energy* it injects rather than reduce its output (Ch.7, s. 3.5.4.1 of the *market rules*); and
- in an *energy bid*, that the *registered market participant* is willing to take or dispose of excess *energy*, but only if paid at least that price for each excess MWh taken or disposed of (Ch.7, s. 3.5.4.2 of the *market rules*).

Each *energy offer* or *energy bid* for a *registered facility*, other than a *boundary entity*, may contain up to five sets of ramp quantity and ramp up/ramp down values for each *dispatch hour*. Each *energy offer* or *energy bid* for a *boundary entity* does not have to specify a ramp rate. The ramp quantity in each set must specify the maximum MW quantity at which the corresponding ramp rate values apply. The ramp quantities must be expressed in megawatts (MW) to one decimal place and must be greater than 0.0 MW. The ramp up and ramp down values must be expressed in MW/minute and must be greater than 0.0 MW/minute. The laminations corresponding to such sets may be different from those of the *price-quantity pairs* contained in the *energy bid* or *energy offer*. (Ch.7, s. 3.5.5 of the *market rules*)

Participants, who are registered for Compliance Aggregation, have further requirements with respect to their offered ramp rates. These requirements are discussed in Market Manual 4.3, Section 1.12.

The largest quantity in any *energy offer*, to reduce *energy* withdrawals, or *energy bid* for any *dispatch hour* must be at least 1 MW but must not exceed the lesser of (Ch.7, s. 3.5.6 of the *market rules*):

- the maximum output of *energy* in an hour indicated in the registration information for the relevant *registered facility*;
- the maximum quantity of *energy* that can be supplied (for an *energy offer*), reduced (for an *offer* to reduce *energy* withdrawals) or taken (for an *energy bid*) in that *dispatch hour* by the *registered facility*, as estimated by the *registered market participant* for that *registered facility*; or
- the maximum allowed injection (for an *energy offer*) or withdrawal (for an *energy bid*) in that *dispatch hour* through the relevant *connection point*, as limited by the lesser of:
 - the capacity of any radial line connecting the *registered facility* to the *connection point*;
 - the maximum injection or withdrawal as specified in the *connection agreement* applicable to the *registered facility*; or
 - the maximum injection or withdrawal permitted by the relevant *transmitter*.

A *registered market participant* offering *energy* may submit *dispatch data* for a specified *registered facility* specifying a maximum amount of *energy* that can be scheduled by the IESO for that *registered facility* over a *dispatch day* (referred to as the Daily Energy Limit or DEL). Such a limit shall be used in the day-ahead commitment process and the *pre-dispatch schedule* and only for the purpose of providing information that the *registered market participant* may use as a basis to revise its *energy offers* in subsequent submissions (Ch.7, s. 3.5.7 of the *market rules*).

The submission of the DEL by the *market participant* is voluntary. If a *market participant* does not wish to submit a DEL, leave the field blank and the tool will assume an infinite amount of *energy* available for scheduling. If a *market participant* chooses to submit a DEL, it must accurately reflect the capability of the facility for the given day. If the value input is no longer accurate, the *market participant* must revise the DEL, as soon as practical, to an accurate value or remove it. Once input, the only way a *market participant* can remove the value is by deleting the existing value, leaving the DEL blank. A value of 0 does not remove the DEL and will result in inaccurate data. A value of 0 indicates that the *generation facility* has no *energy* that can be scheduled.

Every submission of *dispatch data* with respect to a *generation facility* (including a *self-scheduling generation facility*, an *intermittent generator* or a *transitional scheduling generator*) or a *boundary*

entity shall specify a *market price of energy*, in \$/MWh, at and below which the *IESO* may instruct the *facility* to reduce its *energy* output to zero. Such price may be zero or negative but may not be less than negative *MMCP* (Ch.7, s. 3.4.4 of the *market rules*).

Every submission of *dispatch data* with respect to a *dispatchable load facility* or a *boundary entity* shall specify a *market price of energy*, in \$/MWh, at and above which the *IESO* may instruct the *facility* to reduce its *energy* withdrawals to zero. Such price shall not be greater than *MMCP* (Ch.7, s. 3.4.5 of the *market rules*).

Every submission of *dispatch data* with respect to an *offer* to reduce *energy* withdrawals shall specify a *market price of energy*, in \$/MWh, at and above which the *IESO* may instruct the *facility* to reduce its *energy* withdrawals by the total offered quantity. Such price shall not be greater than *MMCP*. (Ch.7, s. 3.4.5 of the *market rules*)

A *registered market participant* may, for any one or more of its *registered facilities* that is a *dispatchable load facility*, identify all or a portion of the consumption at such *registered facilities* as *non-dispatchable load* by submitting *dispatch data* for the non-dispatchable portion at the *maximum market clearing price (MMCP)* (Ch.7, s. 3.3.18 of the *market rules*). A *dispatchable load* that needs to change its load status, in whole, may also identify its consumption as non-dispatchable by removing all *bids* for the hours in which it wishes to be considered non-dispatchable. If the *dispatchable load* cannot assume this process without changes to its current tools or processes, it may continue to identify its whole consumption as non-dispatchable by bidding its consumption at the *maximum market clearing price (MMCP)*.

If *dispatch data* changes are required during the mandatory window to effect a change to or from *dispatchable* status by removing *bids*, the *dispatchable load* is required to contact the *IESO* to indicate the reason for its load status change. The *dispatchable load* will automatically be *dispatched* to 0 MW in the first interval (Interval 1) of the first hour that does not have *dispatch data*. The *dispatchable load* is required to ignore this 0 MW *dispatch instruction* to confirm its intention to becoming non-dispatchable. The *IESO* will consider the load as non-dispatchable until new *bids* are submitted, resulting in a new *dispatch instruction* (see also Appendix C.2.2 “Mandatory Window Submission”).

The quantity in any *dispatch hour*, for a *bid* from a *dispatchable load* that expects to be withdrawing *energy* for only part of that *dispatch hour*, shall reflect its average value at normal production, when up and its *operating reserve offer* shall reflect its minimum dispatchable consumption during the *dispatch hour*, or zero if bidding its entire *energy bid* at *MMCP*.

A *dispatchable load* is expected to follow the *dispatch instructions* associated with the *dispatchable* portion of the *bid*. See Market Manual 4 – Part 4.3: Real-Time Scheduling of the Physical Markets for more details.

When a *market participant* whose *generation facility* is expected to undergo a test⁴ submits *dispatch data* for any hour of the test, the *market participant* must offer an amount that equals the expected hourly average *energy* delivery of that *generating facility*. Where the test is instantly recallable, these *generation facilities* are allowed to participate in the *operating reserve market*. This is acceptable as long as the *market participant* ensures that the sum between the maximum *energy* expected to be produced during the hour and the *operating reserve* offered during the hour does not exceed the maximum amount that the unit can produce that hour.

See Appendix B for content requirements of *dispatch data*.

⁴ For more on *dispatch data* submission for *generator* tests with immediate recall, refer to “Market Manual 7, Part 7.3: Outage Management”, Section 1.3.14.1.

OR Offers

A *registered market participant* may not submit, for any *registered facility*, more than one *offer* to provide each class of *operating reserve* in any *dispatch hour* (Ch.7, s. 3.6.1 of the *market rules*). Additionally, if a *registered facility* determines that it will be operating below its reserve loading point for the entire *dispatch hour*, it shall not submit *offers* to provide *operating reserve* for the *dispatch hour*, and if it already has submitted any such *offers*, it shall revise its *dispatch data* by withdrawing them. (Ch.7, s. 3.3.8 and Appendix 7.3 section 1.1.4 of the *market rules*).

An *offer* to provide *operating reserve* must contain at least 2 and may contain up to five *price-quantity pairs* for each class of *operating reserve* for each *dispatch hour*. The quantity in each *price-quantity pair* in the case of a *registered facility* other than a *boundary entity* shall be expressed in MW to one decimal place and shall not be less than 0.0 MW, and, in the case of a *registered facility* that is a *boundary entity*, must be expressed in whole MW and must not be less than 0 MW. The price in each *price-quantity pair* shall be expressed in \$ and whole cents/MW and shall be not more than the *Maximum Operating Reserve Price (MORP)* and not less than 0.00 \$/MW. The quantity in the first *price-quantity pair* within each offer must be set at 0.0 MW or 0 MW (or 0.0 MWh/hour or 0 MWh/hour) as applicable. (Ch.7, s. 3.6.2 of the *market rules*)

Each *offer* to provide *operating reserve* shall be accompanied by a corresponding *energy offer* or *energy bid* that covers the same MW range (Ch.7, s. 3.6.3 of the *market rules*).

See Appendix B for content requirements of *dispatch data*.

Energy Schedules and Forecasts

A *registered market participant* must submit the following *dispatch data* for each *self-scheduling generation facility*, *transitional scheduling generation facility*, and *intermittent generator* that it has registered with the *IESO* detailing (Ch.7, ss. 3.7, 3.8, and 3.8A of the *market rules*) either:

- the amount of *energy* (in MWh) that it reasonably expects to be provided by the *self-scheduling generation facility* and the *transitional scheduling generator* for each *dispatch hour*; or
- its best forecast of the amount of *energy* (in MWh) that the *intermittent generator* will inject in each *dispatch hour*; and
- the price for energy (in \$/MWh) below which it reasonably expects to reduce the energy output of the self-scheduling generation facility, intermittent generator, or transitional scheduling generator to zero⁵ (Ch.7, s. 3.4.4A of the *market rules*).

See Appendix B for content requirements of *dispatch data*.

Standing Dispatch Data

In addition to the items noted above for *energy offers* and *bids* and *operating reserve offers*, standing *dispatch data* submitted to the *IESO* may specify an expiration date. This is the last date the standing *dispatch data* will be processed by the *IESO*, unless earlier withdrawn or revised by the *registered market participant*. This standing *dispatch data* will be processed at 06:00 EST on the expiration date and will be available to the market for another day, the next day (Ch.7, s. 3.3.9 of the *market rules*).

See Appendix B for content requirements of *dispatch data*.

⁵ This price may not be less than negative MMCP. A price must be provided; otherwise *dispatch data* will be rejected.

1.3.5 Dispatch Data for Importing and Exporting Energy and Importing Operating Reserve

Dispatch data submitted for the purposes of trading between the *IESO-administered* real-time *energy* and *operating reserve* markets and other jurisdictions shall broadly follow the same process as that used to submit *dispatch data* for the real-time *energy* and *operating reserve* markets within Ontario. A *market participant* can *offer* (import) *energy* into the Ontario market and *bid* (export) *energy* from the Ontario market. However, a *market participant* can only *offer* (import) *operating reserve* into the Ontario market – it cannot *bid* (export) *operating reserve* out of the Ontario market. *Market participants* can export *energy* to the United States only if they have a valid National Energy Board⁶ export authorization (Ch.7, s. 2.2.7 of the *market rules*).

Market participants wishing to import *energy* and/or *operating reserve* into, or export *energy* from, the Ontario market must register the capability to so with the *IESO* as part of the participant authorization process. The *IESO* records this capability once the *market participant* is authorized and will validate any *bids* or *offers* received from a *market participant* against this initial registration information (or any subsequent updates). See "Market Manual 1: Market Entry, Maintenance & Exit, Part 1.1: Participant Authorization, Maintenance & Exit" for more information on the process of registering a *boundary entity* capability (Ch.7, s. 2.2.7 of the *market rules*).

Boundary Entity Resources

With all import/export *interchange schedules*, data submissions with respect to imports or exports must be associated with one of the *boundary entity* resources that have been established in the *IESO*'s market systems for this purpose. This is in contrast to intra-Ontario trading, which uses resources created as part of the Market entry process.

The *IESO* has established a list of *boundary entity* resources for which *dispatch data* can be submitted to facilitate import and export *interchange schedules*. The number of resources created reflects the maximum expected number of *interchange schedules* that any one participant would initiate between Ontario and the *control area* the *boundary entity* resource represents. Each *boundary entity* resource allows at least 2 and up to 20 *price-quantity pairs* for *bids* and *offers* for *energy* and at least 2 and up to 5 *price-quantity pairs* for *operating reserve*.

For each *bid* or *offer*, the *market participant* must specify the tie point and (*boundary entity*) resource for the *interchange schedule*. Both operation considerations (such as the radial nature of the Quebec *interties*) and commercial considerations (including the appropriate treatment of taxes) mean that the resources created at specific representations are intended to support specific *interchange schedule* types between Ontario and other *control areas*. Appendix F lists the available *boundary entity* resources that should be used when submitting *bids* and *offers* for *intertie interchange schedules*. *Energy* imports should use *boundary entity* resources identified as "Source", while *energy* exports should use *boundary entity* resources identified as "Sink". *Operating reserve* imports may use *boundary entities* identified as either "Source" or "Sink", depending on whether the associated *energy interchange schedule* is an import or an export.

The *boundary entity* resources detailed in Appendix F are available to all *market participants* who have registered the capability to import or export *energy* and import *operating reserve*. Each of these *market participants* can associate a *bid* or *offer* to import or export *energy* and *operating reserve* against any of these *boundary entity* resources. For example, different *market participants* who wished to export *energy* to Michigan could choose to use the same MI.LUDINGTON.SINK.1 *boundary entity* resource and specify the Michigan tie point. Similarly, different *market participants*

⁶ For more information please visit the National Energy Board web page at www.neb-one.gc.ca

who wished to import *energy* into Ontario may choose to use the same *boundary entity* resource (e.g. NY.ROSETON.SOURCE.2 for imports from New York). The *market participant* name associated with the *dispatch data* will uniquely identify *intertie interchange schedules* that use the same *boundary entity* resource.

Due to scheduling restrictions⁷ imposed by the *IESO*, *market participants* scheduling imports on the Beauharnois interface are required to use only the *boundary entity* resources PQ.BEAUHARNOIS.SOURCE.01-10.

Ramp Rates

Market participants do not need to specify ramp rates for any of their *bid* or *offer* associated with a *boundary entity* resource.

NERC Tagging

A *NERC* e-Tag ID⁸ must be submitted with each *bid* or *offer* and the *NERC* e-Tag must be submitted through the *NERC* tagging system in accordance with *NERC* reliability standards (Appendix.7.1, s. 1.2.11 of the *market rules*). Operation in segregated mode with Hydro Quebec also requires submission of *NERC* e-Tags in accordance with *IESO* requirements.

Appendix G comprises some Ontario specific requirements for *NERC* e-Tags.

NERC e-Tags must be submitted at least 30 minutes⁹ prior to *dispatch hour*¹⁰. However, *market participants* are encouraged to submit *NERC* e-Tags as soon as possible after submitting their *bid* or *offer* to support the validation processes described below.

Early submission will provide the *IESO* with the greatest opportunity to validate *bids* and *offers* and notify *market participants* of the outcome. *Market participants* cannot revise the resource to which a *bid* or *offer* has been associated to reflect a *NERC* e-Tag replacement within the 2 hour window prior to dispatch without *IESO* approval. See “Market Manual 4, Part 4.3: Real-Time Scheduling of the Physical Markets” for more information on the *NERC* tagging submission process.

Normally, *registered market participants* submitting *dispatch data* associated with a *boundary entity* are required to submit all *offers* or *bids* by 2 hours prior to the *dispatch hour* through their **Market Participant Interface**.

Market participants, however, may make short notice changes, if necessary, to the *dispatch data* *NERC* e-Tag ID, as specified in Appendix C.2.3, provided they verbally phone the change into the *IESO* to enable its manual entry to the market systems.

Furthermore, *market participants* are required to submit the *NERC* e-Tag(s) corresponding to the above *dispatch data* (same e-Tag ID) and scheduled MW quantity¹¹ (*dispatch instruction*) to the

⁷ The restrictions are a result of operating circuits B31L and B5D in the “bi-directional” mode, which means that the *IESO* will simultaneously schedule segregated mode of operation exports on B31L and imports on B5D.

⁸ The *NERC* Transaction ID is not the tag itself rather the unique ID # that will be used when a *NERC* e-Tag is submitted through the *NERC* tagging software.

⁹ *Market Participants* are responsible for submitting or adjusting impacted *NERC* E-tags early enough for the tags to be in the IDC database by 35 minutes prior to the *dispatch hour* when a Transmission Loading Relief (TLR) procedure has been activated.

¹⁰ *NERC* reliability standard INT-001 for *interchange schedules* requires that tags be submitted at least 20 minutes prior to the start of the *interchange schedule* for *interchange schedules* that are less than or equal to 1 hour in duration. However, to ensure effective *interchange schedule* coordination between *control areas* and minimize the number of failed *interchange schedules*, the *IESO* has adopted a more stringent requirement of 30-minutes.

NERC tagging system at least 30 minutes prior to the *dispatch hour*. The above is based on the *pre-dispatch schedule* short report being available to *market participants* 45 minutes prior to the *dispatch hour*. Should the pre-dispatch short report fail or run late, the *IESO* will allow comparable latitude with the *IESO's* 30-minute *NERC* e-Tag submission timeline. However, in such situations the *IESO* encourages the *market participants* to submit the *NERC* e-Tag 30 minutes prior to the *dispatch hour* based on the *interchange schedule* expectation, then making necessary changes as may be required.

With respect to *interchange schedules* with NYISO and notwithstanding the obligation in footnote 12, *market participants* shall not update their *NERC* e-Tag MW schedule according to the *IESO pre-dispatch schedule* short report. To ensure that any required *NERC* e-Tag MW schedule changes are not rejected by the NYISO, the sink *control area* will make these adjustments on behalf of *market participants*.

Missing or late *NERC* e-Tags not required for *reliability* reasons will be treated as a breach of the *market rules* and the *interchange schedule(s)* will be treated as failed. The *IESO* will notify the *market participant* by **automated e-mail**¹² with the following reason: missing *NERC* e-Tag. If a *NERC* e-Tag that is

- i) submitted late,
- ii) with incorrect data (MW quantity does not match *dispatch instruction*), or
- iii) has yet to be submitted after 30 minutes prior to the *dispatch hour*,

but is required by the *IESO*, due to internal *reliability* reasons, the *interchange schedule* may be approved on a best effort basis¹³:

Where required for *reliability* reasons,

- in the case of a missing or late *NERC* e-Tag (no *NERC* e-Tag corresponding to the *dispatch data* (*NERC* e-Tag ID) or no *NERC* e-Tag submitted by 30 minutes prior to the *dispatch hour*), the *IESO* will notify the *market participant* of the required change by **telephone** identifying that the *market participant* must identify the correct *NERC* e-Tag, submit or enter the corrections into the *NERC* Tagging system to ensure the *interchange schedule* will flow¹⁴ and notify the *IESO* when complete;
- in the case of a missing *NERC* e-Tag ID, the *IESO* will, provided it is identified by the *market participant*, link the correct *NERC* e-Tag, in the market tools; and
- in the case of incorrect *NERC* e-Tag data (MW quantity does not match *dispatch instruction*, or the *interchange schedule* is curtailed), the *IESO* will adjust the *NERC* e-Tag to coincide with the *dispatch instruction* or the curtailed *interchange schedule*, as the case may be, and, except for MW quantity mismatches, notify the *market participant* of the change by automated e-mail and the reason as being one of the following (in such cases no CMSC payments will apply):

¹¹ The obligation to adjust the scheduled MW quantity on the *NERC* e-Tag, to ensure it corresponds to the *dispatch instruction*, lies with the *market participants*. Failure to do so will be deemed a breach of the *market rules*.

¹² Should the *market participants* e-mail system become unavailable for any reason, they must notify the *IESO* as soon as possible. Once notified, the *IESO* will revert to notifying the *market participant* of *NERC* e-Tagging adjustments by telephone.

¹³ Although the *interchange schedule* may be approved for *reliability* reasons after 30 minutes prior to the *dispatch hour*, it is still deemed a breach of the *market rules* and no CMSC payments will apply.

¹⁴ If the *NERC* e-Tag is denied by another *control area* the *interchange schedule* will be removed and no CMSC payments will apply.

- external curtailment (e.g. external *control area* TLR);
- internal curtailment; or
- scheduling disagreement, and
- in the case of the MW quantity mismatches, notifications for *NERC* e-Tag MW quantity adjustments made by the *IESO* to match the *dispatch instruction* are automatically issued via the *NERC Tagging System* with the following reason: *IESO* Market Results.

If, however, the *NERC* e-Tag data and *dispatch instruction* agree and the *interchange schedule* is constrained down due to *reliability* reasons within the *IESO-controlled grid*, the *IESO* will enter the adjusted MW quantity into the *NERC* tagging system on behalf of the *market participant*. The *IESO* will notify the *market participant* of the adjusted amount by **automated e-mail** with the following reason: internal curtailment.

CMSC payments will apply.

- If the *market participant* is unable to flow the *interchange schedule* as adjusted by the *IESO*, then a further change to the *interchange schedule* may be considered by the *IESO*. If this is not feasible, then the *interchange schedule* will be deemed to have failed. CMSC payments will apply.
- Also, if the *interchange schedule* is denied by another *control area* as a result of the change due to the *IESO* *reliability* concerns, then the *interchange schedule* will be recorded as having failed, but CMSC payments will apply. However, if failed by another *control area* for other reasons such as a TLR, then CMSC will not apply. The *IESO* will notify the *market participant* of the change by **automated e-mail** with one of the following reasons for the change, as appropriate:
 - internal curtailment; or
 - external curtailment (e.g., external control area TLR).

Wheeling Through Interchange Schedules

In the case of wheeling through *interchange schedules*, *market participants* having *boundary entities* must submit:

- an interchange *offer* (for the import into the Ontario market); and
- an interchange *bid* (for the export out of the Ontario market).

Normally, wheeling *interchange schedules* will be handled as two separate *interchange schedules*, the same as any import and export. In this case, the *dispatch data* for the interchange *offer* must be accompanied by the unique *NERC* e-Tag ID for the import, where Ontario would be designated in the *NERC* e-Tag as the sink *control area*. The *dispatch data* for the interchange *bid* must be accompanied by a separate *NERC* e-Tag ID for the export, where Ontario would be designated in the *NERC* e-Tag as the source *control area*. This implies that, when the *IESO-controlled grid* is generation deficient, the export may not be scheduled or may be manually curtailed as a means to balance the load and generation within Ontario. *Market participants* may consider that scheduling of the import portion of the wheeling through *interchange schedule* while curtailing the export portion as an inappropriate redirection of *energy* from its intended customer, but still an acceptable risk for the potential savings/profits offered by the spot market.

Risk averse *market participants*, however, have the option to protect their wheeling through *interchange schedule* by:

- *bidding* the export portion at $+MMCP$;
- *offering* the import portion between $-\$50$ and $-MMCP$; and
- as an additional protective measure, they can also submit the same *NERC* e-Tag ID with the *dispatch data* for both the import *offer* and the export *bid* to indicate that the two *interchange schedules* are linked and part of the same wheeling through *interchange schedule*.

The *IESO* will consider that an import and an export are linked *interchange schedules* of the same wheeling through *interchange schedule* if: the export is bid at $+MMCP$; the import is offered between $-\$50$ and $-MMCP$; and the associated *NERC* e-Tag IDs submitted by *market participants* along with their *dispatch data* have been edited to follow this formatting convention:

- for the import: **WI_SourceCA...SinkCA;**
- for the export: **WX_SourceCA...SinkCA,**

where:

- "SourceCA...SinkCA" is the unique *NERC* e-Tag ID obtained from the *NERC* Tagging system for the wheeling *interchange schedule*; for wheeling through *interchange schedules* treated in this manner, Ontario would not be listed as a source CA or as the sink CA in the *NERC* e-Tag ID, but would be included in the *NERC* e-Tag as part of the transmission path;
- WI is a delimiter indicating that the *interchange schedule* is the import leg of a wheel; the delimiter is added by the *market participant* to the *NERC* e-Tag ID submitted to the *IESO* as *dispatch data* for the import; and
- WX is a delimiter indicating that the *interchange schedule* is the export leg of a wheel; the delimiter is added by the *market participant* to the *NERC* e-Tag ID submitted to the *IESO* as *dispatch data* for the export.

Appendix G shows a tagging example (Example 1) of a linked wheel through transaction.

Notes regarding linked wheel through *interchange schedules*:

- to receive this treatment, the *market participant* must *offer* the import between $-\$50$ and $-MMCP$ and *bid* the export at $+MMCP$; and
- the *IESO*'s scheduling algorithm does not consider the separate submissions of *dispatch data* for the import leg *offer* and the export leg *bid* of the wheel through *interchange schedule* to be linked; therefore, the scheduling algorithm may prepare schedules for these two *interchange schedules* with different quantities (it is the *market participant*'s responsibility to revise the common *NERC* e-Tag to the lowest quantity of the import/export *interchange schedules*).

By doing so, *market participants* indicate that they are willing to have both *interchange schedules* curtailed at the same time when the *IESO-controlled grid* is generation deficient (Ch.7, s. 3.5.8 of the *market rules*).

However, for a linked wheel through *interchange schedule* involving the Hydro Quebec TransEnergie (HQT) *control area*, the *NERC* e-Tag must identify HQT as being the SOURCE, the SINK or intermediate *control area*; otherwise, the *IESO* will deny the *NERC* e-Tag.

Appendix G has a tagging example (Example 2) of a linked wheel through transaction involving Hydro Quebec TransEnergie *control area*.

Validation

Bids and *offers* to import or export *energy* will be validated by the *IESO* to ensure that:

- *bids* and *offers* are submitted in accordance with the intentions declared during the *boundary entity* registration process (or any subsequent updates);
- the *market participant* has the necessary licenses and authorizations;
- the *NERC* e-Tag source/sink corresponds with the *boundary entity* resource, as set out in Appendix F;
- the *NERC* e-Tag is consistent with the tie point identified in the *dispatch data* submission;
- the *NERC* e-Tag IDs submitted for linked wheeling through *interchange schedules* are correctly formatted;
- the *market participant* has navigated successfully intermediary markets as well as the Ontario markets; and
- there are no external or internal transmission constraints or other mitigating limitations.

The *IESO* expects to undertake this validation between 1 and 2 hours prior to the *dispatch hour* but will seek to undertake validation on a best effort basis prior to the start of the two-hour window. This may prevent a *market participant* from resubmitting their *bid* or *offer*, depending on the nature of the change that is required to address the validation failure¹⁹. The results of all validation will be provided to *market participants* in the form of a revised *pre-dispatch schedule*. However, the *IESO* will also seek to notify *market participants* directly of validation failures on a best effort basis.

The manual nature of much of this validation process means that it is important that all *bids* and *offers* to import or export *energy*, or import *operating reserve*, conform to the relationships set out in Appendix F. In addition, *market participants* should ensure that they have the appropriate *NERC* e-Tags within the required timeframe.

1.3.6 Requests for Segregated Mode of Operation

Generators may submit requests to operate their *generation facilities* in a *segregated mode of operation* on the *pre-dispatch day* and no later than 2 hours prior to the start of the first *dispatch hour*, unless otherwise agreed by the *IESO* (Appendix 7.7, s. 1.3 of the *market rules*). *Generators* that wish to have their *generation facilities* scheduled in a *segregated mode of operation* in the day-ahead commitment process (DACP) must submit their request by 09:00 in order to be included in the first run of DACP. The *IESO* must assess the SMO request by 10:00. The *IESO* will assess SMO requests received after 09:00 and before 10:00 on a best effort basis. Knowing that SMO can be recalled at any time for *reliability*, *market participants* are required to have *offers* in the Ontario Market prior to 10:00 for any SMO generation.

A *request for segregation* shall include, but not be limited to:

- the start time of the *segregated mode of operation*;
- the expiry time (duration) of the *segregated mode of operation*;

¹⁹ For instance the, *NERC* reliability standard INT-001 for *interchange schedules* requires that *NERC* e-Tags be submitted at least 20 minutes prior to the start of the *interchange schedule* for *interchange schedules* that are less than or equal to 1 hour in duration. However, to ensure effective *interchange schedule* coordination between *control areas* and minimize the number of failed *interchange schedules*, the *IESO* has adopted a more stringent requirement of 30-minutes.

- a list of the registered *generation facilities* that are intended to operate in the *segregated mode of operation*; and
- an hourly schedule.

Market participants must submit *NERC e-Tags* for the *interchange schedules* in segregated mode with Hydro Quebec.

A *market participant* that intends for a *registered facility* to operate in a *segregated mode of operation* shall continue to provide *dispatch data* and an outage request¹⁵ for that *registered facility* for each *dispatch hour* during which a *registered facility* will or is intended to operate in *segregated mode of operation*.

When submitting requests for *segregated mode of operation*, *market participants* will use the *outage* process described in “Market Manual 7, Part 7.3”. Along with submitting an *outage* request for the facilities that are intended to operate in *segregated mode*, *market participants* are required to notify the *IESO* by phone of the request submitted.

The *IESO* shall make a decision regarding the *Request For Segregation* and notify the relevant *generator* of such decision as soon as practicable but no later than such time that allows the *transmitter* a minimum of 90 minutes (or such lesser time as agreed to by the *transmitter*) to switch any applicable equipment or *facilities* required to permit implementation of the *segregated mode of operation* (Appendix.7.7, s. 1.3.4 of the *market rules*). If the *IESO* approves the request, it shall:

- direct the relevant *transmitter* on the switching of applicable equipment to permit the intended operation of the segregated generation at the start time;
- direct the relevant *transmitter* on the switching of applicable equipment to cease the *segregated mode of operation* and reconnect the segregated transmission and *generation facilities* to the *IESO-controlled grid* at the expiry time;
- coordinate and confirm with the applicable *control area operator* the switching to be effected by the *transmitter* and the names of the *registered facilities* that will operate in a *segregated mode of operation*.

The *IESO* may at any time revoke its approval to operate a *registered facility* in a *segregated mode of operation* (Appendix.7.7, s. 1.3.6 of the *market rules*). In this case, the *IESO* shall notify the relevant generator and revoke any direction issued to affect the *segregated mode of operation* for the relevant *registered facility*.

The *IESO* may at any time terminate the operation of a *registered facility* in a *segregated mode of operation* (Appendix.7.7, s. 1.3.6 of the *market rules*). In this case, the *IESO* shall:

- notify the relevant *generator*;
- direct the relevant *transmitter* on the switching of applicable equipment or *facilities* required to cease implementation of the *segregated mode of operation*; and
- coordinate and confirm with the applicable *control area operator* the switching to be effected by the *transmitter* and the names of the *registered facilities* that will cease to operate in a *segregated mode of operation*.

¹⁵ The submission of the *outage* request will fulfill the obligations with respect to the submission of *dispatch data* as set out in the *market rules*, chapter 7 Appendix 7.7.

Segregated Mode of Operation Inadvertent Accounting

The *IESO* will calculate and confirm inadvertent accumulation with neighbouring *control areas* at the end of each *dispatch day*. All reconciliations will include adjustments due to differences in time zones.

Where the *interconnection*, for which the inadvertent accumulation applies, is comprised of one or more *interties* capable of operating in a *segregated mode of operation (SMO)*, the *IESO* will:

- confirm the *segregated mode of operation* schedules with the appropriate *market participant(s)* and compare these schedules with the corresponding *interchange schedule(s)* for purposes of determining the export transmission service charges and inadvertent amounts;

Note: Where discrepancies occur, the *segregated mode of operation* schedules agreed to by telephone will prevail.

- determine and distinguish on an hourly granularity the inadvertent accumulation in both the *segregated mode of operation* and non-*segregated mode of operation* in relation to individual *intertie SMO* inadvertent accumulation;
- differentiate the “on” and “off” peak inadvertent accumulation in accordance with the *NERC* definition of “on” and “off” peak in relation to individual *intertie SMO* inadvertent accumulation;
- keep an ongoing daily record of the total non-*SMO* and *SMO* inadvertent accumulation;
- on a daily basis, provide applicable *market participants* individual *intertie segregated mode of operation* inadvertent accumulation data regarding hourly, peak, off peak, and daily totals;
- manage total inadvertent accumulation with the neighbouring *control areas*, and, regarding the *segregated mode of operation* inadvertent accumulation component, the *IESO* will make every reasonable attempt to schedule inadvertent accumulation payback during periods that are mutually acceptable to the *market participant* and the *IESO* as follows:
 - in the case where a *market participant* owes inadvertent and, where reasonable, proposals, by the *market participants*, to reduce accumulated inadvertent have been made to, but not accepted by, the applicable neighbouring *control area*, the *IESO* will not require the *market participant* to pay back the inadvertent accumulation until the arrangements are acceptable to the *IESO* and the *market participant*, but, where reasonable proposals have not been made, and no mutually acceptable arrangement can be determined, the *IESO* may direct the *market participant* to payback *SMO* inadvertent accumulation based on the requirements of the *IESO* and neighbouring *control area*; or
 - in the case where a *market participant* is owed inadvertent, the *IESO* will, upon request of the *market participant* or when deemed necessary by the *IESO*, arrange inadvertent payback to the *market participant* at a mutually acceptable time; however, where reasonable proposals to reduce accumulated inadvertent have been made to but are not accepted by the *market participant*, the *IESO* may direct the *market participant* to receive *SMO* inadvertent accumulation based on the requirements of the *IESO* and the neighbouring *control area*, but, where reasonable proposals have not been made by the applicable neighbouring *control area*, and no mutually acceptable arrangement can be determined, the *IESO* will not require the *market participant* to receive *SMO* inadvertent accumulation based on the requirements of the *IESO* and the neighbouring *control area*; and
 - where the *control area to control area* monthly inadvertent reconciliation indicates, the *IESO* will allocate any inadvertent accumulation adjustment (positive or negative) on a pro-rata basis to the current inadvertent accumulation accounts of all parties:

To pay back *segregated mode of operation* inadvertent accumulation, the *market participant* shall:

- make and continue making reasonable proposals to pay back *segregated mode of operation* inadvertent accumulation until such inadvertent account is paid; and
- pay back *segregated mode of operation* inadvertent accumulation in accordance with this process.

1.3.7 Publication of Pre-dispatch Schedules

The *IESO* must determine, *publish* and release *pre-dispatch schedules* in order to provide itself and *market participants* with advance information and projections necessary to plan the physical operation of the *electricity system*. The *IESO* must determine an initial *pre-dispatch schedule* for the 24 *dispatch hours* of each *dispatch day* no later than 16:00 EST on the *pre-dispatch day* (Ch.7, s. 5.5 of the *market rules*). Valid *dispatch data* provided by *market participants* are used to help determine the *pre-dispatch schedule*. Appendix E provides further background information on the process that the *IESO* undertakes to develop and *publish* the *pre-dispatch schedule*.

The schedules and forecasts provided by *self-scheduling generation facilities*, *transitional scheduling generator facilities* and *intermittent generation facilities* are used by the *IESO* to develop its own forecast of intermittent generation and self-scheduled generation to be used in the pre-dispatch process. The pre-dispatch process then optimizes the *energy* and *operating reserve* recognizing projected constraints on the *IESO-controlled grid* and inter-ties. The output includes the prices and cleared quantities of *energy* and each class of *operating reserve* for individual *facilities* and in aggregate.

Following each pre-dispatch run, the *IESO* assesses the *security* and *adequacy* of the results. The two considerations that impact the assessment of pre-dispatch *security* and *adequacy* are listed below.

- the pre-dispatch output is not the first assessment of *security* and *adequacy*; assessments will have been made a number of times for a *dispatch hour* or day before the first pre-dispatch runs are prepared such that, consequently, the assessments for pre-dispatch benefit from the information gathered in previous assessments. In particular, the *IESO* will focus upon the *Security* and *Adequacy* Assessments of the 14- and 28-day forecasts and the System Status Report (SSR).
- Since *bids* and *offers* can be changed without limits up to 2 hours prior to the *dispatch hour*, *pre-dispatch schedules* will be more stable as the *dispatch hour* approaches. *Pre-dispatch schedules* for 5+ hours out may be totally different from the final schedule for these hours.

Once these assessments are complete, the *IESO* evaluates to find the best integrated solution based on the results of these assessments. Where *security & adequacy* concerns are identified, the *IESO* will undertake remedial action that may include (but is not restricted to) the following (Ch.7, s. 3.3.12 of the *market rules*):

- sending out System Advisories in the SSR requesting *offers/bids* to relieve *local area* inadequacies (MW, MVAR); these requests should provide cold units sufficient lead-time to start if necessary (e.g., 12 hours before the dispatch hour for thermal units);
- sending out directives requesting *offers/bids* to relieve *local area* inadequacies (MW or MVAR); directives would be targeted specifically to relevant *generators/loads* in the areas expected to experience *local area* inadequacies (Ch.7, s. 3.3.13 of the *market rules*), and they would instruct *market participants* (to the full extent of the *market rules*) to submit *offers/bids* (this would occur at the discretion of the *IESO*, but probably within 12 hours of the *dispatch hour*).

1.4 Roles and Responsibilities

Responsibility for submitting *dispatch data* in the real-time *energy* and *operating reserve* markets is shared among:

- **generators** having dispatchable *generation facilities* that are responsible for:
 - submitting *offers* for *energy* and *operating reserve* for *registered facilities* in the real-time *energy* and *operating reserve* markets in the required timeframe; and
 - making revisions to data as required within the required timeframe;
- **generators** having *self-scheduled generation facilities* or *transitional scheduling generator facilities* that are responsible for:
 - submitting *self-schedules* of *energy* to be provided to the market; and
 - making changes to data as required within the required timeframe;
- **generators** having intermittent *generation facilities* that are responsible for:
 - submitting a forecast of *energy* to be provided to the market; and
 - making changes to data as required within the required timeframe;
- **market participants** having *dispatchable loads* that are responsible for:
 - submitting *bids* for *energy* and *offers* for *operating reserve* for *registered facilities* in the real-time *energy* and *operating reserve* markets in the required timeframe; and
 - making changes to data as required within the required timeframe;
- **market participants** having the capability to **import or export energy** (and import *operating reserve*) through a *boundary entity* and who are responsible for:
 - submitting *bids* and *offers* for *energy* and *offers* for *operating reserve* for the *boundary entity* in the real-time *energy* and *operating reserve* markets in the required timeframe; and
 - making changes to data as required within the required timeframe;
- **generators** having *registered generation facilities* operable in a *segregated mode of operation* and who are responsible for:
 - submitting requests for segregation in the required timeframe;
 - submitting outage requests as indicated in “Market Manual 7, Part 7.3” and notifying *IESO* of such requests; and
 - making revisions to *dispatch data* as required within the required timeframe;
- the **IESO** which is responsible for:
 - receiving and processing *dispatch data*, including requests for segregation;
 - notifying *market participants* of invalid data and rejection of data within the required timeframe;
 - running the pre-dispatch process;
 - determining market clearing prices as well as *energy* and *operating reserve* schedules;
 - making decisions regarding requests for segregation;
 - notifying *market participants* of their own individual schedules for *energy* and *operating reserve* and of decisions regarding requests for segregation;

- coordinating and confirming with the applicable *control area operator* and directing the relevant *transmitter* on the switching of the segregated *generation facilities*, and
- publishing the results of each pre-dispatch run.

1.5 Contact Information

As part of the participant authorization and registration process, *applicants* are able to identify a range of contacts within their organization that address specific areas of market operations. For the submission of *dispatch data* in the real time *energy* and *operating reserve* markets this contact will most likely be the Real Time Markets Manager Market Contact Type as indicated in the IESO Registration Solution in the *market participant* Contacts screens. If a *market participant* has not identified a specific contact, the *IESO* will seek to contact the Main Contact in the IESO Registration Solution that is established during the participant authorization process. The *IESO* will seek to contact these individuals for activities within this procedure, unless alternative arrangements have been established between the *IESO* and the *market participant*. For more information on the IESO Registration Solution and the Participant Authorization Process see "Market Entry, Maintenance and Exit, Part 1.1 – Participant Authorization, Maintenance & Exit."

If the *market participant* wishes to contact the *IESO*, the *market participant* can contact *IESO* Customer Relations via email at <mailto:help.centre@ieso.ca> or customer.relations@ieso.ca or via telephone, mail or courier to the numbers and addresses given on the *IESO*'s Web site (www.ieso.ca)- or click on 'Contact Us' to go to the 'Contacting the *IESO*' page). If *IESO* Customer Relations is closed, telephone messages or emails may be left in relevant voice or electronic *IESO* mail boxes, which will be answered as soon as possible by Customer Relations staff.

- End of Section -

2. Procedural Work Flow

The diagrams in this section represent the flow of work and information related to the submission of *dispatch data* in the real-time *energy* and *operating reserve* markets between the *IESO*, the *market participant* involved in the procedure, and any other parties.

The steps illustrated in the following diagrams are described in detail in Section 3.

Table 2–1: Legend for Procedural Work Flow Diagrams

Legend	Description
Oval	An event that triggers task or that completes task. Trigger events and completion events are numbered sequentially within procedure (01 to 99)
Task Box	Shows reference number party responsible for performing task (if “other party”), and task name or brief summary of task. Reference number (e.g., 1A.02) indicates procedure number within current <i>market manual</i> (1), sub-procedure identifier (if applicable) (A), and task number (02)
Solid Horizontal Line	Shows information flow between the <i>IESO</i> and external parties
Solid Vertical Line	Shows linkage between tasks
Broken Line	Links trigger events and completion events to preceding or succeeding task

2.1 Submitting Dispatch Data and Revisions Until Two Hours Prior to the Dispatch Hour

Dispatch data and revisions may be submitted by *registered market participants* at any time up to one week in advance of any given *dispatch day* and with no restrictions up to two hours prior to the *dispatch hour* for which the data applies. (The process for accepting *dispatch data* revisions within two hours of the *dispatch hour* is given in Section 2.2.) Such data, however, will not be processed by the *IESO* until 06:00 EST on the pre-*dispatch day*, the day prior to the *dispatch day* for which the submitted *dispatch data* applies. *Dispatch data* submitted prior to 06:00 EST on the pre-*dispatch day* should be submitted as standing data.

The steps shown in Figure 2–1 are described in detail in Section 3.1, Table 3-1.

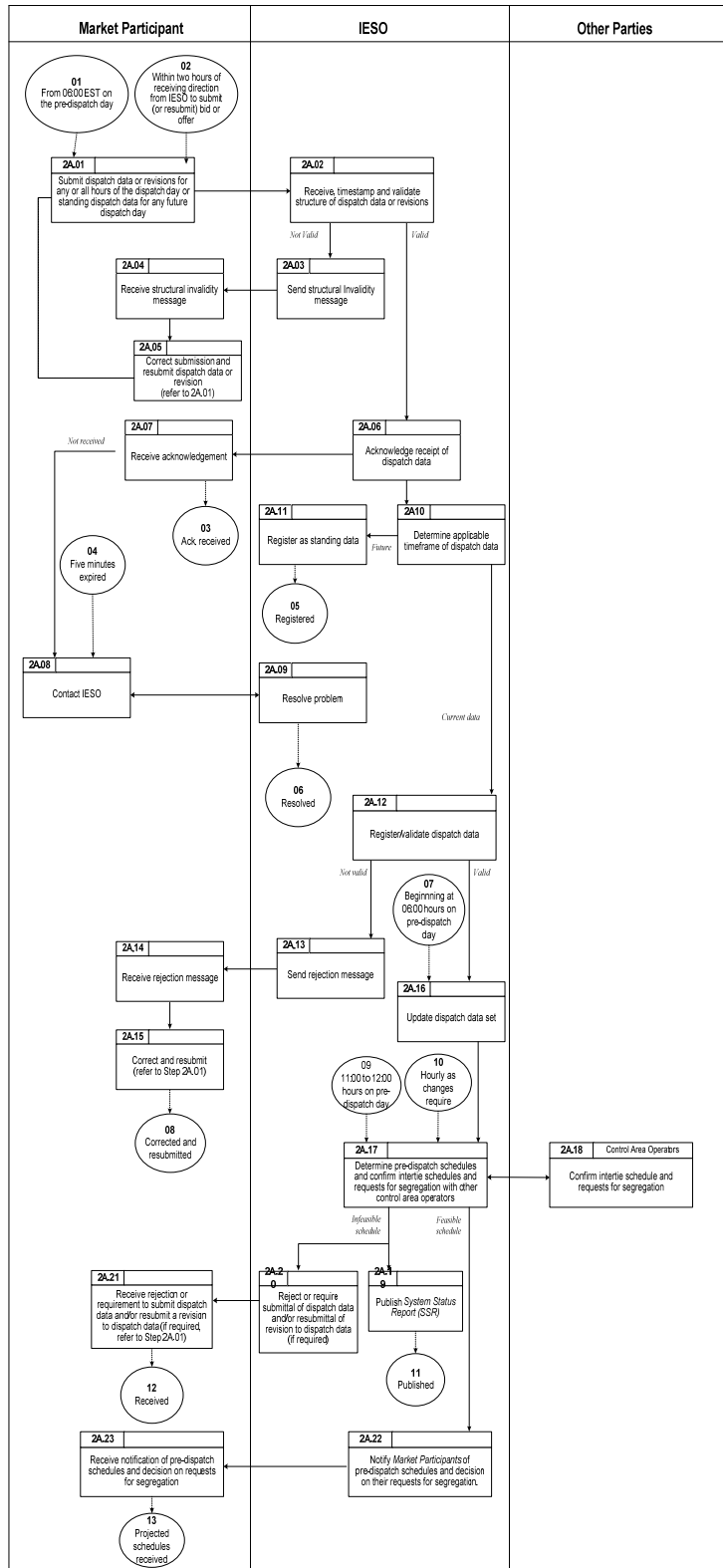
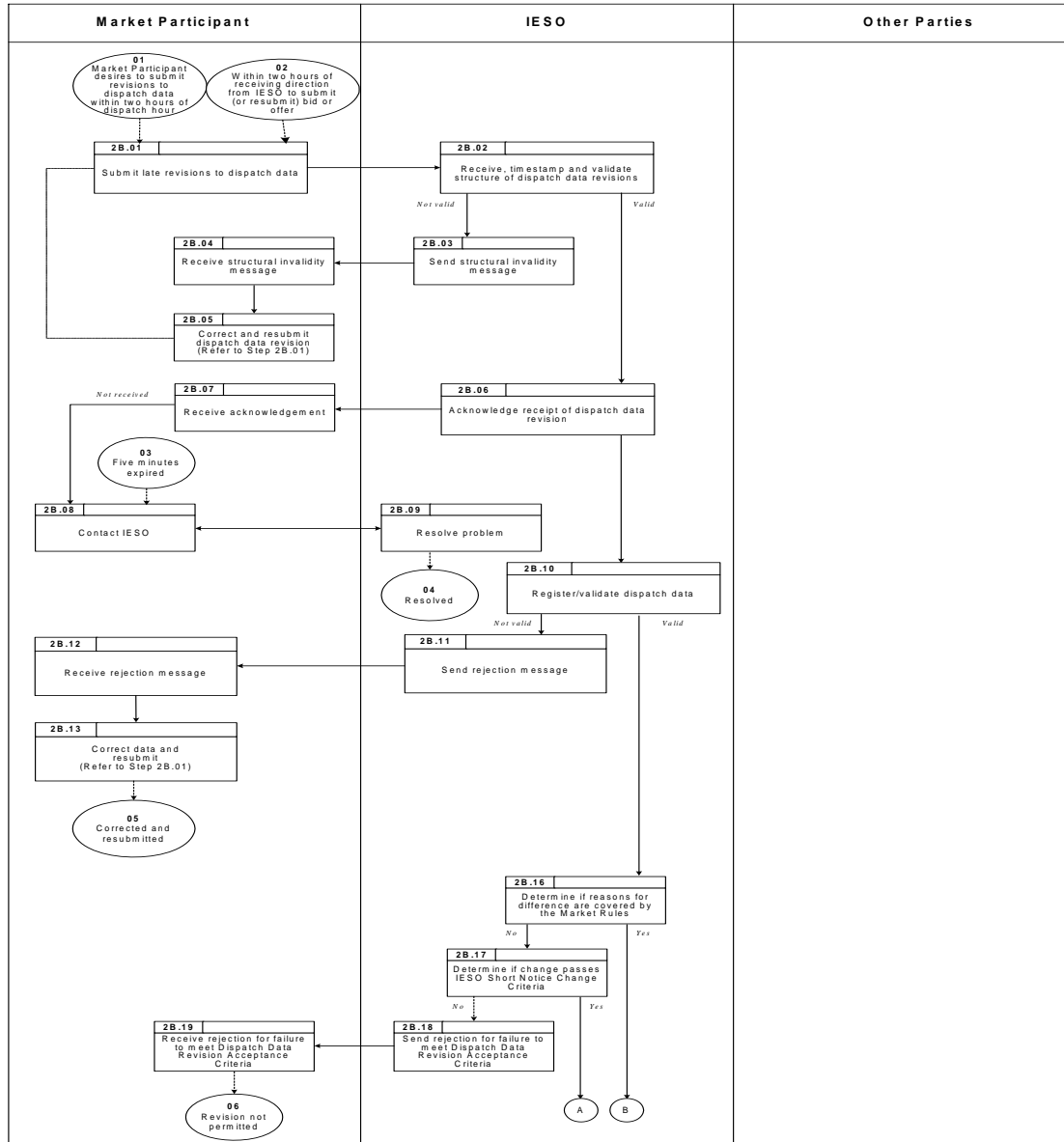


Figure 2-1: Work Flow for Submitting Dispatch Data and Revisions until Two Hours Prior to the Dispatch Hour

2.2 Submitting Dispatch Data Revisions Within Two Hours of the Dispatch Hour

Initial and revised *dispatch data* may be submitted without restriction until two hours prior to the *dispatch hour*, following the process illustrated in Section 2.1. *Dispatch data* revisions may be submitted within two hours of the *dispatch hour*, but are subject to certain restrictions, as illustrated in Section 2.2.1, ‘*Dispatch data* Revision Acceptance Criteria’.

Figure 2–2 illustrates the process for accepting *dispatch data* revisions within two hours of the *dispatch hour*. The steps are described in detail in Section 3.2, Table 3-2.



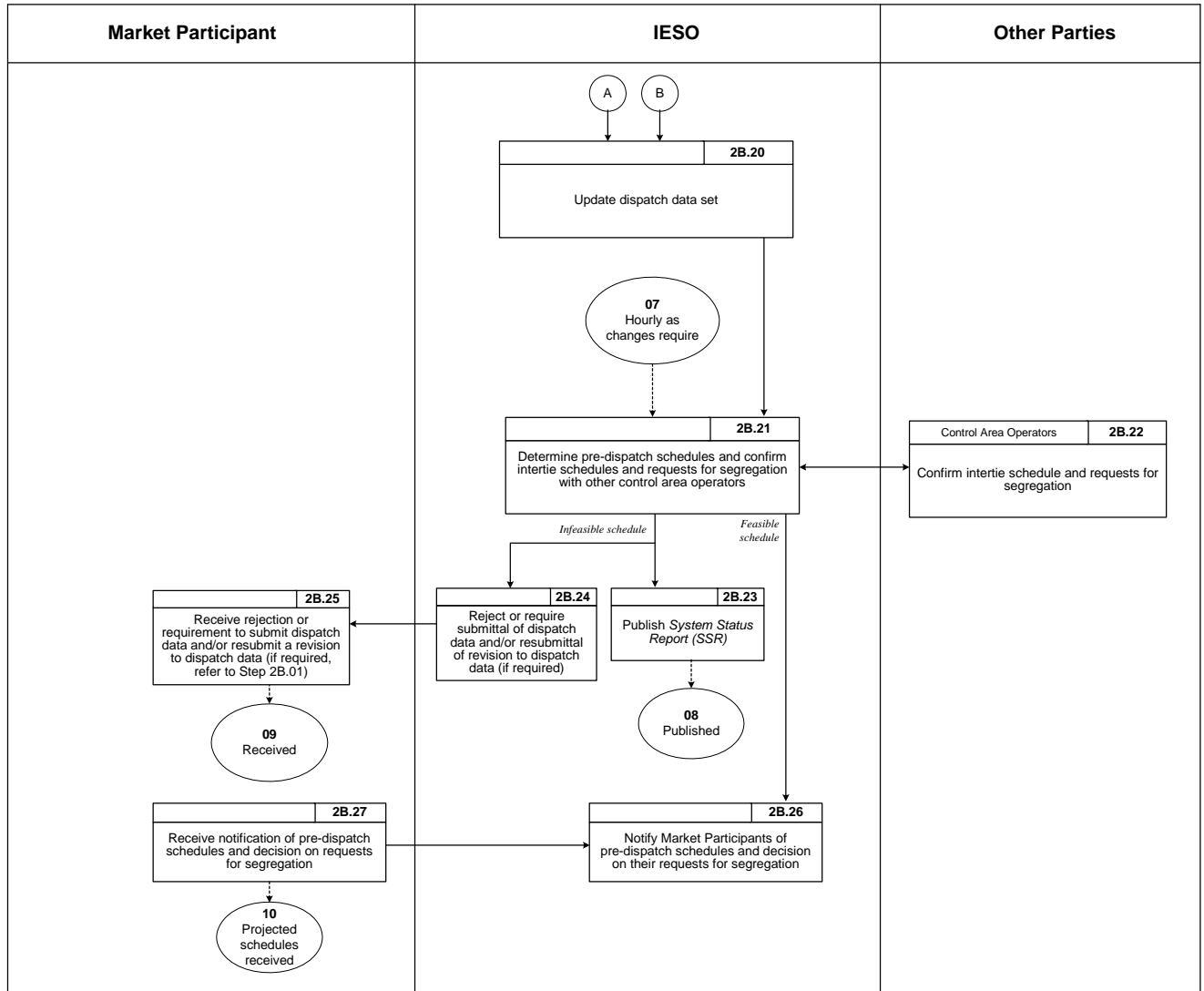


Figure 2–2: Work Flow for Submitting Dispatch Data Revisions Within Two Hours of the Dispatch Hour

2.2.1 Dispatch Data Revision Acceptance Criteria

Within two hours of the *dispatch hour*, *dispatch data* revisions may be submitted with certain restrictions. Figure 2–3 shows the criteria that must be met in order for such revisions to be accepted.

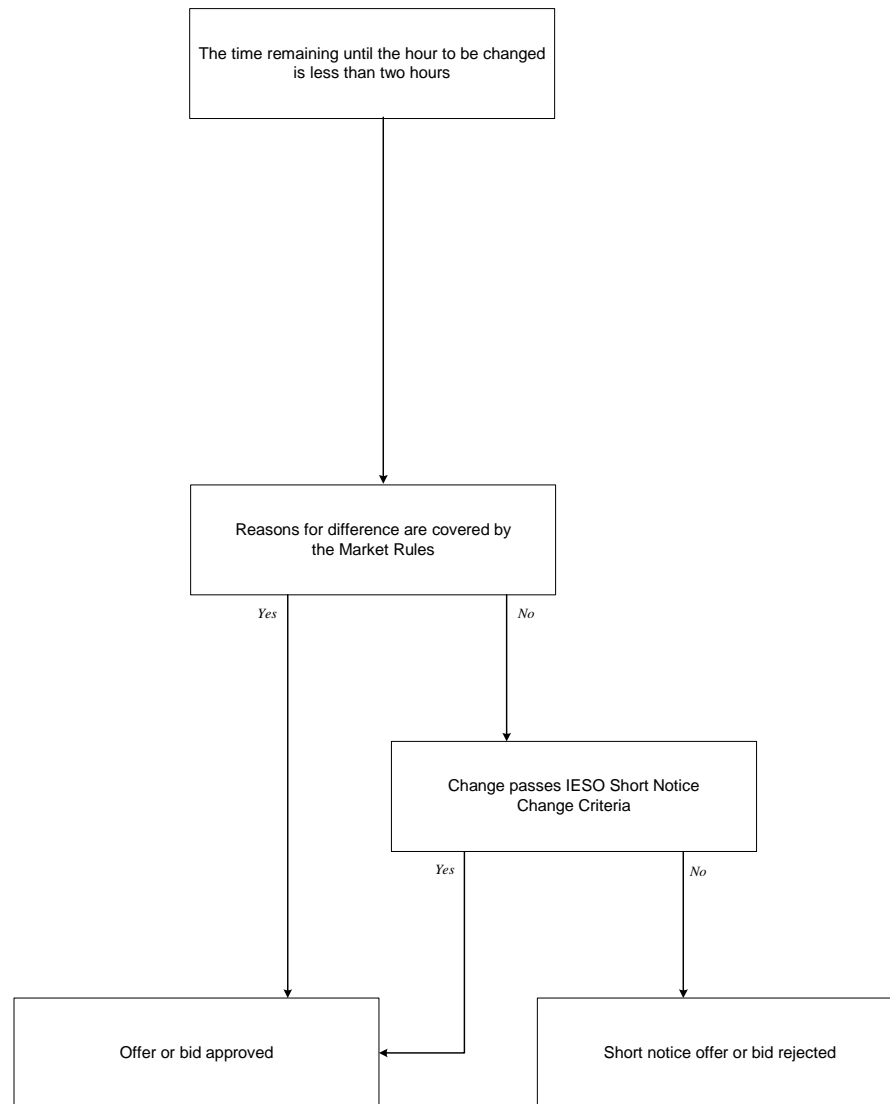


Figure 2–3: Work Flow for Dispatch Data Revision Acceptance Criteria

– End of Section –

3. Procedural Steps

This section contains detail on the tasks (steps) that comprise the submission of *dispatch data* and revisions with or without restriction in the real-time *energy* and *operating reserve* markets. The tables contain seven columns, as follows:

Ref

The numerical reference to the task.

Task Name

The task name as identified in Section 2.

Task Detail

Detail about the task.

When

A list of all the events that can trigger commencement of the task.

Resulting Information

A list of the information flows that may or must result from the task.

Method

The format and method for each information flow are specified.

Completion Events

A list of all the circumstances in which the task should be deemed finished.

3.1 Submitting Dispatch Data and Revisions Until Two Hours Prior to the Dispatch Hour

Market participants may submit *dispatch data* for any of their *registered facilities* for any or all hours of the *dispatch day*. *Market participants* who desire not to *offer* or *bid* for *energy* or to *offer operating reserve* in any *dispatch hour* or hours may choose to either submit an *offer* or *bid* of zero or not submit any *offers* or *bids* for such hours.

Dispatch data and revisions may be submitted at any time up to one week in advance of the *pre-dispatch day*. (*Market participants* may make changes within two hours of the *dispatch hour* by following the steps given in Section 3.2 below.) Steps shown in the following table are illustrated in Section 2.1, Figure 2-1.

Table 3-1: Procedural Steps for Submitting Dispatch Data and Revisions Until Two Hours Prior to the Dispatch Hour

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.01	Submit <i>dispatch data</i> or revisions for any or all hours of the <i>dispatch day</i> or standing <i>dispatch data</i> for any future <i>dispatch day</i> .	<p><i>Market participants</i> submit <i>energy</i> and <i>operating reserve offers</i> and/or <i>energy bids</i> (dispatchable generation, <i>dispatchable load facilities</i> and/or <i>boundary entities</i>), <i>self-schedules</i> (<i>self-scheduling generation facilities</i> and <i>transitional scheduling generator facilities</i>), <i>energy forecasts</i> (intermittent generation) and requests for segregation for any of their <i>registered facilities</i> for any or all hours of the <i>dispatch day</i>.</p> <p><i>Market participants</i> may also submit standing <i>dispatch data</i> for future <i>dispatch days</i> (or revisions to existing standing <i>dispatch data</i>) by identifying a <i>dispatch day</i> type ('Mon.' through to 'Sun.' or 'All') in addition to the <i>dispatch data</i>.</p> <p>NOTE: Each <i>offer</i> to provide <i>operating reserve</i> must be accompanied by a corresponding <i>energy offer</i> or <i>energy bid</i> that covers the same megawatt (MW) range.</p> <p>Revisions to previously submitted <i>dispatch data</i> for any hour or hours may be made as required.</p>	<p>From 06:00 EST on the <i>pre-dispatch day</i>.</p> <p>Changes to <i>dispatch data</i> required by the <i>IESO</i> must be made within 2 hours of the direction from the <i>IESO</i> (refer to Steps 2A.22 and 2A.23, and the "Market Rules, Chapter 7").</p> <p>NOTE: A <i>registered market participant</i> must submit revised <i>dispatch data</i> to the <i>IESO</i> as soon as practical for any <i>facility</i> if, for any <i>dispatch hour</i> in the current <i>pre-dispatch schedule</i>, the quantity of any service scheduled for that <i>registered facility</i> differs from the quantity expected to be delivered or withdrawn by more than the greater of 2% or 10MW.</p>	<p>Real-Time <i>Energy market initial energy</i> and <i>operating reserve offers</i> and <i>bids</i>, <i>self-scheduling generation facility</i> and <i>transitional scheduling generator facility</i> schedules, intermittent generator and non-<i>dispatchable load</i> forecasts, and requests for segregation.</p>	<p><i>Market Participant Interface</i>¹⁶</p>	<p><i>Dispatch data</i> and revisions to <i>dispatch data</i> for real-time <i>energy</i> and <i>operating reserve</i> Markets submitted to the <i>IESO</i>.</p>

¹⁶ For more information on means to submit dispatch data to the *IESO*, refer to *Participant Technical Reference Manual* and the Technical Interfaces page on the *IESO* public Web site.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
		(Refer to the “Market Participant Graphical User Interface (GUI) User’s Guide” for an overview of the <i>Market Participant Interface</i> and the Web Browser input screens relating to the <i>dispatch data</i> submission process).				
2A.02	Receive, timestamp, and validate structure of <i>dispatch data</i> or revisions.	The <i>IESO</i> receives, timestamps, and performs a structural validity check on <i>dispatch data</i> to confirm that the data format and structure is correct. If revisions are received within two hours of the <i>dispatch hour</i> , the process described in Section 3.2 is applied. (Refer to the "Market Participant Graphical User Interface (GUI) Users Guide" for further details on the validation process.)	When received, after Step 2A.01	Time-stamped <i>dispatch data</i> that have been checked for structural validity.	<i>Market Participant Interface</i>	<i>Dispatch data</i> received, time-stamped, and checked for structural validity.
2A.03	Send structural invalidity message.	The <i>IESO</i> sends <i>market participant</i> a message indicating that the <i>dispatch data</i> is structurally invalid (if applicable).	After Step 2A.02, if data is invalid.	Structural invalidity message.	<i>Market Participant Interface</i>	Structural invalidity message sent.
2A.04	Receive structural invalidity message.	The <i>market participant</i> receives a structural invalidity message (if applicable).	After Step 2A.03.	None	<i>Market Participant Interface</i>	Invalid structure message received.
2A.05	Correct submission and resubmit <i>dispatch data</i> or revision (refer to Step 2A.01).	The <i>market participant</i> corrects the <i>dispatch data</i> and resubmits (if applicable).	After Step 2A.04.	Corrected <i>dispatch data</i> .	<i>Market Participant Interface</i>	Corrected <i>dispatch data</i> submitted.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.06	Acknowledge receipt of <i>dispatch data</i> .	The <i>IESO</i> confirms receipt of the submitted <i>dispatch data</i> if structurally valid.	Within 5 minutes, after Step 2A.02 if data is structurally valid.	Confirmation	<i>Market Participant Interface</i>	Confirmation sent
2A.07	Receive acknowledgement.	The <i>market participant</i> receives from the <i>IESO</i> confirmation of <i>dispatch data</i> receipt by the <i>IESO</i> .	After Step 2A.06.	None	<i>Market Participant Interface</i>	Confirmation received.
2A.08	Contact <i>IESO</i> .	<i>Market participant</i> immediately contacts the <i>IESO</i> if confirmation is not received.	Five minutes after submitting <i>dispatch data</i> or revision.	Notification of non-receipt of acknowledgement message.	Telephone or fax	Notification of non-receipt provided.
2A.09	Resolve problem.	The <i>IESO</i> and <i>market participant</i> resolve the status of submitted <i>dispatch data</i> or revision.	After Step 2A.08 (if applicable).	<i>Dispatch data</i> or revision status resolved.	Telephone or fax	Resolution of <i>dispatch data</i> or revision submission status.
2A.10	Determine applicable timeframe of <i>dispatch data</i> .	The <i>IESO</i> determines if the <i>dispatch data</i> is for the current <i>dispatch day</i> being processed, or a future <i>dispatch day</i> (in case of standing <i>dispatch data</i>)	After Step 2A.06.	None	None	Nature of the <i>dispatch data</i> determined.
2A.11	Register as standing data.	The <i>IESO</i> registers standing <i>dispatch data</i> and does not consider such data for the <i>dispatch day</i> currently being processed.	After Step 2A.10 if <i>dispatch data</i> is determined to be standing.	None	None	Standing data registered.
2A.12	Register/validate <i>dispatch data</i> .	The <i>IESO</i> registers data not previously registered as standing and validates current <i>dispatch data</i> . (Refer to the "Market Participant Graphical User Interface (GUI) Users Guide" for further details on the validation process.)	After Step 2A.10 if data is current.	None	None	Validity of <i>dispatch data</i> or revisions determined Valid data registered.
2A.13	Send rejection message.	If the <i>dispatch data</i> is invalid, the <i>IESO</i> notifies the <i>market participant</i> via a rejection message.	After Step 2A.12 if data is invalid.	Rejection message.	<i>Market Participant Interface</i>	Rejection message sent.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.14	Receive rejection message.	The <i>market participant</i> receives rejection of invalid <i>dispatch data</i> (if applicable).	After Step 2A.13.	None	<i>Market Participant Interface</i>	Rejection message received.
2A.15	Correct and resubmit (refer to Step 2A.01).	The <i>market participant</i> corrects and resubmits the invalid <i>dispatch data</i> (via Step 2A.01).	After Step 2A.14.	Corrected <i>dispatch data</i> .	<i>Market Participant Interface</i>	Corrected <i>dispatch data</i> submitted.
2A.16	Update <i>dispatch data</i> set.	The <i>IESO</i> updates <i>dispatch data</i> set with current valid <i>offers</i> , <i>bids</i> , schedules, and forecasts in preparation for running the pre-dispatch process.	Beginning at 06:00 EST on the pre <i>dispatch day</i> , and thereafter as valid data is received until the <i>dispatch hour</i> .	None	None	<i>Dispatch data</i> set updated.
2A.17	Determine <i>pre-dispatch schedules</i> and confirm <i>intertie</i> schedules and requests for segregation with other <i>control area operators</i> .	The <i>IESO</i> runs the pre-dispatch process and determines the <i>pre-dispatch schedules</i> based on <i>offers</i> , <i>bids</i> , schedules and forecasts for <i>energy</i> and <i>operating reserve</i> . It also confirms <i>intertie</i> schedules and requests for segregation with other <i>control area operators</i> .	Initially, after 15:00 EST (initial <i>dispatch data</i> available) and before 16:00 EST on the pre- <i>dispatch day</i> . Subsequently on an hourly basis if warranted by material changes to <i>dispatch data</i> .	<i>Pre-dispatch schedules</i> and feasibility of <i>intertie</i> schedules and requests for segregation.	Telephone (for confirming the <i>intertie</i> schedules and requests for segregation)	<i>Pre-dispatch schedules</i> determined and feasibility of <i>intertie</i> schedules and requests for segregation determined.
2A.18	Confirm <i>intertie</i> schedule and requests for segregation.	Other <i>control area operators</i> confirm with the <i>IESO</i> <i>intertie</i> schedules and requests for segregation.	After Step 2A.17.	Confirmed or infeasible <i>intertie</i> schedules and requests for segregation.	Telephone	<i>Intertie</i> schedules and requests for segregation confirmed or determined infeasible by the <i>IESO</i> and other <i>control area operators</i> .

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.19	<i>Publish</i> System Status Report (SSR).	The <i>IESO publishes</i> the System Status Report (SSR), which will notify <i>market participants</i> of any advisories, warnings, and problems.	After Step 2A.17. At scheduled times or whenever there is a material change to the information provided in the previous SSR.	System Status Report (SSR).	<i>Market Participant Interface</i>	System Status Report (SSR) <i>published</i> .
2A.20	Reject or require submission of <i>dispatch data</i> and/or resubmission of revision to <i>dispatch data</i> (if required).	The <i>IESO</i> may reject <i>dispatch data</i> previously accepted or require specific <i>market participants</i> to submit or resubmit a revision to the quantity element of <i>dispatch data</i> , or both, based on the results of the pre-dispatch process. Such rejections, submissions or changes are based on the need to maintain the <i>reliability</i> of the <i>IESO-controlled grid</i> .	After Step 2A.17 if required.	<i>Dispatch data</i> rejection, change, or submission requirement.	<i>Market Participant Interface</i>	Rejection of previously accepted data or requirement to submit, and/or resubmit a revision to <i>dispatch data</i> sent to specific <i>market participants</i> .
2A.21	Receive rejection or requirement to submit <i>dispatch data</i> and/or resubmit a revision to <i>dispatch data</i> (if required, refer to Step 2A.01).	Specific <i>market participants</i> receive a rejection of previously accepted data or a requirement to submit or resubmit a revision to the quantity element of <i>dispatch data</i> , or both, due to a <i>reliability</i> issue on the <i>IESO controlled grid</i> .	After Step 2A.20 if required. Changes to <i>dispatch data</i> or new <i>dispatch data</i> , if required by the <i>IESO</i> , must be made within 2 hours of receiving such notification.	<i>Dispatch data</i> rejection, change, or submission requirement.	<i>Market Participant Interface</i>	<i>Market participant</i> receives rejection of previously accepted data or requirement to submit and/or resubmit a revision to <i>dispatch data</i> .

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.22	Notify <i>market participants</i> of <i>pre-dispatch schedules</i> and decision on their requests for segregation.	The <i>IESO</i> notifies each individual <i>market participant</i> of <i>pre-dispatch schedules</i> and decision on their <i>request for segregation</i> . All <i>market participants</i> are notified of aggregate data.	After Step 2A.17. After determination of initial <i>pre-dispatch schedules</i> and confirmation of <i>intertie</i> schedules, and as applicable following subsequent runs of the pre-dispatch process based on material changes. The <i>IESO</i> will respond to a <i>request for segregation</i> within one hour of receipt of such request.	Notification of pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules, and aggregate data. Accepted and denied requests for segregation.	<i>Market Participant Interface</i>	Pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules and decisions on requests for segregation sent to <i>market participants</i> for their individual <i>facilities</i> . Aggregate data sent to all <i>market participants</i> .

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2A.23	Receive <i>pre-dispatch schedules</i> and decision on requests for segregation.	<p><i>Market participants</i> receive notification of <i>energy</i> and <i>operating reserve pre-dispatch schedules</i>, including <i>market prices</i> and quantities for their own individual <i>facilities</i>.</p> <p>All <i>market participants</i> receive notice of aggregate data.</p> <p><i>Market participants</i> receive notification of approval/denial of their requests for segregation.</p> <p>(See Appendix E, “<i>Pre-dispatch schedule Production and Publication</i>”.)</p> <p>(Refer to the "Market Participant Graphical User Interface (GUI) Users Guide" for Web Browser screen examples.)</p> <p>Appendix B provides information on where to find examples of:</p> <ul style="list-style-type: none"> • pre-dispatch <i>energy</i> results; • pre-dispatch <i>operating reserve</i> results; • public results; • the totals report; • market clearing prices; • <i>security</i> constraints; and • regional constraints. 	<p>After Step 2A.22.</p> <p>After determination of initial <i>pre-dispatch schedules</i> and confirmation of <i>intertie</i> schedules, and as applicable following subsequent runs of the pre-dispatch process based on material changes.</p>	<p>Pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules, and aggregate data. Accepted and denied requests for segregation.</p>	<p><i>Market Participant Interface</i></p>	<p>Pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules and decisions on requests for segregation received by <i>market participants</i> for their individual <i>facilities</i>.</p> <p>Aggregate data received by all <i>market participants</i>.</p>

3.2 Submitting Revisions to Dispatch Data Within Two Hours of the Dispatch Hour

Submission of *dispatch data* and revisions to *dispatch data* may be made without restriction until two hours prior to the *dispatch hour* for which the data applies (following the process described in Section 3.1). Revisions to *dispatch data* may be made within two hours of the *dispatch hour* with restrictions, and the following process must be applied. Steps shown in the following table are illustrated in Section 2.2, Figure 2-2.

Table 3–2: Procedural Steps for Submitting Revisions to Dispatch Data within Two Hours of the Dispatch Hour

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.01	Submit revisions to <i>dispatch data</i> .	<p><i>Market participants</i> submit revisions to <i>dispatch data</i> for any of their <i>registered facilities</i>.</p> <p>(Refer to the “Market Participant Graphical User Interface Users Guide” for an overview of the <i>Market Participant Interface</i> and the Web Browser input screens relating to the <i>dispatch data</i> submission process.)</p>	<p>Within two hours of the actual <i>dispatch hour</i> but at least 10 minutes prior to the <i>dispatch hour</i> for <i>registered facilities</i> other than <i>boundary entities</i>.</p> <p>Within two hours of the actual <i>dispatch hour</i> but at least 60 minutes prior to the <i>dispatch hour</i> for <i>boundary entities</i>.</p> <p>Changes to <i>dispatch data</i> required by the <i>IESO</i> must be made within 2 hours of the time of receipt of the direction requiring the change (refer to Steps 2B.24 and 2B.25 and the “Market Rules, Chapter 7, Section 3.3.11”).</p> <p>NOTE: A <i>registered market participant</i> must submit revised <i>dispatch data</i> to the <i>IESO</i> as soon as practical for any <i>registered facility</i> if, for any <i>dispatch hour</i> in the current <i>pre-dispatch schedule</i>, the quantity of any <i>Physical service</i> scheduled for that <i>registered facility</i> differs from the quantity expected to be delivered or withdrawn by more the</p>	Revisions to <i>dispatch data</i> .	<i>Market Participant Interface</i> ¹⁷	Revisions to <i>dispatch data</i> for real-time energy and operating reserve markets submitted to the <i>IESO</i> .

¹⁷ For more information on means to submit dispatch data to the *IESO*, refer to *Participant Technical Reference Manual* and the Technical Interfaces page on the *IESO* public Web site.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
			greater of 2% or 10 MW.			
2B.02	Receive, timestamp, and validate structure of <i>dispatch data</i> revisions.	The <i>IESO</i> receives, timestamps, and performs a structural validity check on <i>dispatch data</i> revisions. (Refer to the “Market Participant Graphical User Interface (GUI) Users Guide” for further details on the validation process.)	When received, after Step 2B.01.	None	<i>Market Participant Interface</i>	<i>Dispatch data</i> received, time-stamped, and checked for structural validity.
2B.03	Send structural invalidity message.	The <i>IESO</i> sends <i>market participant</i> a message indicating that the <i>dispatch data</i> revision is structurally invalid (if applicable).	After Step 2B.02 if data is invalid.	Structural invalidity message.	<i>Market Participant Interface</i>	Structural invalidity message sent.
2B.04	Receive structural invalidity message.	The <i>market participant</i> receives a structural invalidity message (if applicable).	After Step 2B.03	None	<i>Market Participant Interface</i>	Structural invalidity message received.
2B.05	Correct submission and resubmit <i>dispatch data</i> revision (refer to Step 2B.01).	The <i>market participant</i> corrects the <i>dispatch data</i> revision and resubmits (if applicable).	After Step 2B.04	Corrected <i>dispatch data</i> revision.	<i>Market Participant Interface</i>	Corrected <i>dispatch data</i> revision submitted.
2B.06	(Within 5 minutes) Acknowledge receipt of <i>dispatch data</i> revision.	The <i>IESO</i> confirms receipt of the submitted <i>dispatch data</i> revision if structurally valid.	After Step 2B.02 if data is structurally valid.	Confirmation	<i>Market Participant Interface</i>	Confirmation sent.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.07	Receive acknowledgement.	The <i>market participant</i> receives confirmation of <i>dispatch data</i> revision receipt by the <i>IESO</i> .	After Step 2B.06	None	<i>Market Participant Interface</i>	Confirmation received.
2B.08	Contact <i>IESO</i> .	<i>Market participant</i> immediately contacts the <i>IESO</i> if a confirmation is not received.	Five minutes after submitting revision.	Notification of non-receipt of confirmation.	Telephone or fax	Notification of non-receipt provided.
2B.09	Resolve problem.	The <i>IESO</i> and <i>market participant</i> resolve the status of submitted <i>dispatch data</i> revision.	After Step 2B.08 (if applicable).	<i>Dispatch data</i> revision status resolved.	Telephone or fax	Resolution of <i>dispatch data</i> revision status.
2B.10	Register/validate <i>dispatch data</i> revision.	The <i>IESO</i> registers and validates the <i>dispatch data</i> revision.	After Step 2B.06.	None	None	Validity of <i>dispatch data</i> revision determined.
2B.11	Send rejection message.	If the <i>dispatch data</i> revision is invalid, the <i>IESO</i> notifies the <i>market participant</i> via a rejection message.	After Step 2B.10 if invalid.	Rejection message.	<i>Market Participant Interface</i>	Rejection message sent to <i>market participant</i> .
2B.12	Receive rejection message.	The <i>market participant</i> receives rejection of invalid <i>dispatch data</i> revision (if applicable).	After Step 2B.11.	None	<i>Market Participant Interface</i>	Rejection message received.
2B.13	Correct and resubmit (refer to Step 2B.01).	The <i>market participant</i> corrects and resubmits the invalid <i>dispatch data</i> revision (via Step 2B.01).	After Step 2B.12.	Corrected <i>dispatch data</i> revision.	<i>Market Participant Interface</i>	Corrected <i>dispatch data</i> revision submitted.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.17	Determine if change passes <i>IESO</i> Short Notice Change Criteria.	The <i>IESO</i> determines if the change passes the <i>IESO</i> Short Notice Change Criteria for the 2 hour window. (Refer to Appendix C for the <i>IESO</i> Short Notice Change Criteria.)	After Step 2B.14 if the reasons for difference are not covered by the <i>market rules</i> .	None	None	Acceptability of change determined.
2B.18	Send rejection for failure to meet <i>Dispatch data</i> Revision Acceptance Criteria.	The <i>IESO</i> sends a rejection message to the <i>market participant</i> if the <i>dispatch data</i> revision does not pass the <i>Dispatch data</i> Revision Acceptance Criteria.	After Step 2B.17 if change does not pass the <i>IESO</i> Short Notice Change Criteria (Appendix C).	Rejection message	<i>Market Participant</i> Interface	Rejection message sent to <i>market participant</i> .
2B.19	Receive rejection for failure to meet <i>Dispatch data</i> Revision Acceptance Criteria.	The <i>market participant</i> receives a rejection message from the <i>IESO</i> if the <i>dispatch data</i> revision does not pass the <i>Dispatch data</i> Revision Acceptance Criteria.	After Step 2B.18	None	<i>Market Participant</i> Interface	Rejection message received.
2B.20	Update <i>dispatch data</i> set.	The <i>IESO</i> updates <i>dispatch data</i> set with current valid <i>offers, bids, schedules</i> and forecasts in preparation for running the pre-dispatch process.	As received until the <i>dispatch hour</i> .	None	None	<i>Dispatch data</i> updated.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.21	Determine <i>pre-dispatch schedules</i> and confirm <i>intertie</i> schedules and requests for segregation with other <i>control area operators</i> .	The <i>IESO</i> runs the pre-dispatch process and determines the <i>pre-dispatch schedules</i> based on <i>offers, bids, schedules</i> and forecasts for <i>energy</i> and <i>operating reserve</i> . It also confirms <i>intertie</i> schedules and requests for segregation with other <i>control area operators</i> .	On an hourly basis if warranted by changes to <i>dispatch data</i> .	<i>Pre-dispatch schedules</i> and feasibility of <i>intertie</i> schedules and requests for segregation.	Telephone (for confirming the <i>intertie</i> schedules and requests for segregation)	<i>Pre-dispatch schedules</i> determined and feasibility of <i>intertie</i> schedules and requests for segregation determined.
2B.22	Confirm <i>intertie</i> schedule and requests for segregation.	Other <i>control area operators</i> confirm with the <i>IESO</i> <i>intertie</i> schedules and requests for segregation.	After Step 2B.21.	Confirmed or infeasible <i>intertie</i> schedules and requests for segregation.	Telephone	<i>Intertie</i> schedules and requests for segregation confirmed or determined infeasible by the <i>IESO</i> and other <i>control area operators</i> .
2B.23	Publish System Status Report (SSR)	The <i>IESO</i> publishes the System Status Report (SSR), which will notify <i>market participants</i> of any advisories, warnings and problems.	After Step 2B.21 if the schedule is infeasible.	System Status Report (SSR)	<i>Market Participant Interface</i>	System Status Report (SSR) published.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.24	Reject or require submission of <i>dispatch data</i> and/or re-submission of revision to <i>dispatch data</i> (if required).	The <i>IESO</i> may reject <i>dispatch data</i> previously accepted or require specific <i>market participants</i> to submit or resubmit a revision to the quantity element of <i>dispatch data</i> , or both, based on the results of the pre-dispatch process. Such rejections, submissions or changes are based on maintaining the <i>reliability</i> of the <i>IESO-controlled grid</i> .	Following Step 2B.21 if required.	<i>Dispatch data</i> rejection, change, or submission requirement.	<i>Market Participant Interface</i>	Rejection of previously accepted data or requirement to submit and/or resubmit a revision to <i>dispatch data</i> sent to specific <i>market participants</i> .
2B.25	Receive rejection or requirement to submit <i>dispatch data</i> and/or resubmit a revision to <i>dispatch data</i> (if required, refer to Step 2B.01).	Specific <i>market participants</i> receive a rejection of previously accepted data or a requirement to submit or resubmit a revision to the quantity element of <i>dispatch data</i> , or both, due to a <i>reliability</i> issue on the <i>IESO controlled grid</i> .	Following Step 2B.24. Changes to <i>dispatch data</i> , or new <i>dispatch data</i> if required by the <i>IESO</i> must be made within 2 hours of receiving such notification.	<i>Dispatch data</i> rejection, change, or submission requirement.	<i>Market Participant Interface</i>	<i>Market participant</i> receives rejection of previously accepted data or requirement to submit and/or resubmit a revision to <i>dispatch data</i> .
2B.26	Notify <i>market participants</i> of <i>pre-dispatch schedules</i> and decision on their requests for segregation.	The <i>IESO</i> notifies each individual <i>market participant</i> of <i>pre-dispatch schedules</i> and decision on their requests for segregation. All <i>market participants</i> are notified of aggregate data.	After Step 2B.21, as required after determination of <i>pre-dispatch schedules</i> and confirmation of <i>intertie</i> schedules based on material changes. The <i>IESO</i> will respond to a <i>request for segregation</i> within one hour of receipt of such request.	Notification of <i>pre-dispatch energy</i> and <i>operating reserve</i> schedules, aggregate data and decision on requests for segregation.	<i>Market Participant Interface</i>	<i>Pre-dispatch energy</i> and <i>operating reserve</i> schedules sent to MP's for their individual <i>facilities</i> . Notification of decision on requests for segregation sent to <i>market participants</i> . Aggregate data sent to all MP's.

Ref	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.27	Receive notification of <i>pre-dispatch schedules</i> and decision on requests for segregation.	<p><i>Market participants</i> receive notification from the IESO of <i>energy</i> and <i>operating reserve pre-dispatch schedules</i> including market clearing prices and cleared quantities for their own individual <i>facilities</i>.</p> <p>All <i>market participants</i> are notified of aggregate data and decision on their requests for segregation.</p> <p>(Refer to Appendix E – Pre-dispatch Information Release and Publication.)</p> <p>(Detailed references as for Step 2A.25.)</p>	After Step 2B.26, as required after determination of <i>pre-dispatch schedules</i> and confirmation of <i>inertie</i> schedules based on material changes.	Pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules, aggregate data and decision on requests for segregation.	<i>Market Participant</i> Interface	<p>Pre-dispatch <i>energy</i> and <i>operating reserve</i> schedules received by <i>market participants</i> for their individual <i>facilities</i>.</p> <p>Notification of decision on requests for segregation received by <i>market participants</i>.</p> <p>All <i>market participants</i> have received aggregate data.</p>

– End of Section –

Appendix A: Forms

There are no forms used in this procedure.

– End of Section –

Appendix B: Content of Dispatch Data

This appendix provides references to the *IESO* documentation that describes the standards that *market participants* have to follow when submitting *dispatch data* to the *IESO*-administered real-time *energy* and *operating reserve* markets.

B.1 Bid/Offer Data Requirements

Refer to the “Market Participant Graphical User Interface (GUI) User Guide” for web-based *Market Participant* Interface screens. Examples of the following template files can be found in the “Market Participant Submissions” section of the Technical Interfaces page on the *IESO* public Web site (www.ieso.ca). Bid/offer data requirements include:

- *energy offers & bids* (including imports, exports, and requests for the *segregated mode of operation*);
- standing *energy offers & bids*;
- OR *offers* (including imports);
- standing *operating reserve offers & bids*;
- *energy market schedules* (for *self-scheduling*, *transitional scheduling*, and *intermittent generators*); and
- *offers* to reduce *energy* withdrawals.

B.2 Schedules and Forecasts

Refer to the “Market Participant Graphical User Interface (GUI) User’s Guide” for web-based *Market Participant* Interface screens. Examples of various schedules, forecasts and assessment data files can be found on the Technical Interfaces page on the *IESO* public Web site (www.ieso.ca).

– End of Section –

Appendix C: Short Notice Change Criteria

C.1 Introduction

A short notice submission (submission - includes *bids* or *offers*) is defined as any real-time *dispatch data* submission which occurs within 2 hours, of the start of a *dispatch hour* identified in the submission.

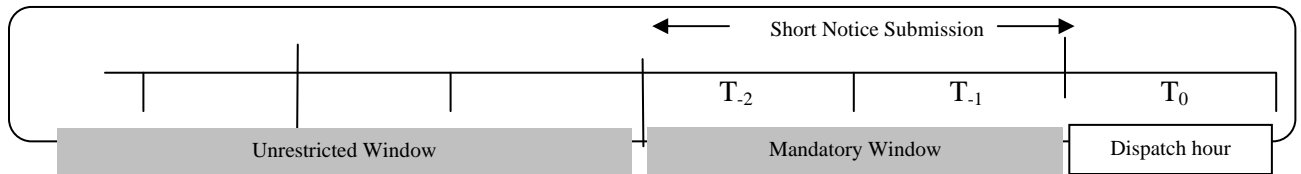


Figure C-1: Short Notice Submission Window

All new and revised dispatch data submitted within 2 hours in advance of the *dispatch hour* must be manually approved by the *IESO*. Criteria for manual acceptance of new and revised *dispatch data* for this window is summarized in Appendix C.3.

The *market rules* provide some guidance regarding *IESO* manual approval for short notice *dispatch data* submissions. The *IESO* will approve such changes and authorize the submission of new or revised *dispatch data* if:

- the revision is considered a replacement energy offer;
- the revision, in the case of a *dispatchable load*, relates to:
 - changing its load status, in whole or in part, either to or from dispatchable, by bidding at or changing from *MMCP*; or
 - a request to restore its *operating reserve offers* after a forced *outage*; or
- the revision reflects changes in the operational status of the *generation facility* or the *dispatchable load facility* to prevent violation of any *applicable law*, endangering the safety of any person, or damage to property or the environment.

The *IESO* will also approve the submission of new or revised *dispatch data* in the mandatory window if the revision relates solely to the quantity element of the *dispatch data*, and the change results from one or more of the following:

- direction from the *IESO* to submit *dispatch data* for *reliability* reasons;
- changes in the operational status of the *generation facility* or the *dispatchable load facility* to prevent violation of any *applicable law*, endangering the safety of any person, or damage to property or the environment;
- the *market participant* recognizes that the quantity of any *physical service* scheduled in the current *pre-dispatch schedule* for the *facility* differs from the quantity the *market participant* reasonably expects to be delivered or withdrawn by more than the greater of 2% or 10 MW;
- the *IESO* denies a request for segregation;

- the *IESO* revokes its approval to operate a *registered facility* in a *segregated mode of operation*;
- the *IESO* terminates the operation of a *registered facility* in a *segregated mode of operation*;
- a System Advisory for under-generation has been issued, and the new or revised *dispatch data* increases *offers* or decreases *bids* of energy;
- a System Advisory for over-generation has been issued, and the new or revised *dispatch data* decreases *offers* or increases *bids* of energy; or
- a System Advisory for an *operating reserve* shortfall has been issued, and the new or revised *dispatch data* increases *offers* of *operating reserve*.

C.2 Submission Criteria

C.2.1 Intentionally Left Blank

C.2.2 Mandatory Window Submission

The mandatory window is the period less than 2 hours before the start of the *dispatch hour* and closing at least 10 minutes prior to the start of the *dispatch hour*.

There is no automatic acceptance of *dispatch data* submissions in the mandatory window. *IESO* approval to accept the change into the market is contingent upon manually reviewing the actual submission.

Submissions in this window must include an associated reason for change. Those submissions that do not include a reason for change will not pass validation and hence will not be eligible for manual review¹⁸. *IESO* approval for the *market participant* to submit the new or revised *dispatch data* (i.e. validation of the submission) does not imply approval for inclusion in the real-time *energy* or *operating reserve markets*. The *IESO* may initiate a direct conversation with the *market participant* to clarify the reason(s) provided. The intention is not to accept submission revisions made for economic reasons within this window.

Except for a *dispatchable load* changing its load status, either in whole or in part, to or from dispatchable, manual approval of submission price changes will not be allowed within the mandatory window. The *IESO* will reject these submissions unless the *IESO* has directed the *market participant* to make an additional (i.e. new, not revised) submission or as permitted in *response* to a System Advisory for under-generation, over-generation or an *operating reserve* shortfall. The reason should be specified in the submission. A *dispatchable load* that needs to change its load status, either in whole or in part, to or from dispatchable within the mandatory window can do so by changing the price point of the largest *bid* quantity to *MMCP* (from its original *bid* price), or vice versa. In addition, a *dispatchable load* that needs to change its load status, in whole, may identify its consumption as non-dispatchable by removing all *bids* for the hours in which it wishes to be considered non-dispatchable. When *dispatch data* changes are required during the mandatory window to effect a change to or from *dispatchable* status, the *dispatchable load* is required to contact the *IESO* to indicate the reason for its load status change.

¹⁸ See the *Market Participant Graphical User Interface (GUI) Users Guide* for detailed descriptions of the standard reasons for change that are available.

The *IESO* will automatically *dispatch* the load to 0 MW in the first interval (Interval 1) of the first hour that does not have *dispatch data*. The *dispatchable load* is required to ignore the 0 MW *dispatch instruction* to confirm its intention to becoming non-dispatchable. The *IESO* will consider the load as non-dispatchable until new *bids* are submitted, resulting in a new *dispatch instruction*. If the *dispatchable load* cannot assume this process without significant changes to its current tools or processes, it may continue to identify its whole consumption as non-dispatchable by bidding its consumption at the *maximum market clearing price (MMCP)* until its tools and processes are updated

Acceptance of mandatory window submissions into the market will occur only when a *facility* is experiencing an operational situation which precludes it from physically or legally being able to satisfy its current *pre-dispatch schedule* (equipment malfunction, worker or public safety situation, legal requirement, property damage, environmental *regulations*). In addition, the *IESO* will not sanction or support the violation of any law or statute by *market participants* through its market dispatch and *dispatch instructions*, and will approve any submission that clearly indicates such a violation will occur if changes are not approved.

In the case of *generation facilities* participating in the Real-Time Generation Cost Guarantee (RT-GCG) program, the *IESO* will not authorise increases to *offer prices* in the *price-quantity pairs* corresponding to the *generation facility's minimum loading point* for the *minimum generation block run time* after the time of the *publication* of the *pre-dispatch schedule* determined three hours prior to the *dispatch hour*.

C.2.3 Short Notice Submission - Boundary Entities

Changes to *price* and *quantity* for *registered boundary entities* are subject to same submission restrictions as *dispatch data* received from non-boundary entities (refer to criteria listed in section C.2.2 **Mandatory Window Submissions**). Quantity changes to *dispatch data* resulting from changes in an external *control area* will, however, be accepted until 60 minutes prior to the *dispatch hour*. For example, an interchange schedule may have been scheduled for a lesser quantity in the external *control area*. (Refer to Market Manual 4.3 **Real-Time Scheduling of the Physical Markets** Section 1.7.2 - "**Boundary Entities**").

Additionally, a change to the *NERC e-Tag* identification number (ID) in the submitted *dispatch data*, when submitted electronically, is treated as a new *interchange schedule* by the market systems and is subject to the same submission restrictions as other *dispatch data* including:

- by 2 hours prior to the *dispatch hour*, *market participants* must submit new or revised *dispatch data* to reflect the correct *NERC e-Tag* IDs; failure to do so will be treated as a breach of the *market rules*;
- from 2 hours until 30 minutes prior to the *dispatch hour*, *market participants* must verbally communicate¹⁹ *NERC e-Tag* ID changes to the *IESO*, who will implement the necessary adjustments in the *IESO* market systems on their behalf.

¹⁹ A short notices change to the *NERC e-Tag* ID, if verbally communicated, is only intended for the infrequent situation where there is a mismatch between *dispatch data* and the submitted *NERC e-Tag*.

C.2.4 Short Notice Submission - Reliability

The *IESO* will allow the *offers* to be submitted for a brief period only for those stations where a hydraulic unit is required to run to maintain system *reliability* and which may result in spill to be caused at other affected stations on the same river system.

A modified criterion is established under which the *IESO* will consider approving changes to *offers* and *bids* within the mandatory window.

The *IESO* will open the bidding window **for a minimum of one hour or until the reliability concern is resolved** to allow *bids/offers* to be modified within the short notice submission window when the *IESO* has or is about to initiate EEA2²⁰ (*energy emergency alert 2*) procedures.

Note: The intent of opening the bidding window in the above situation is strictly to assist in alleviating/mitigating *reliability* or *security* concerns of the *IESO-controlled grid* (e.g., encourage *market participants* to submit additional *offers* or *bids* that will assist in alleviating an *adequacy* deficiency) and, as such, the bidding window will only be open to accept the following:

- all new *offers*; and
- those modified existing *offers* where price remains the same or is lower (a price increase on an existing *offer* is not allowed).

Note: Although listed as a material change for the SSR reporting in Market Manual Part 7.2: Near Term Assessments and Reports: Publication of Daily SSR Reports for Changes in *Intertie* Scheduling Limit, the bidding window is to **remain closed** for: (i) an estimated change (increase or decrease) of an operating *security limit* $\geq 25\%$ in any hour; or (ii) at any time during *dispatch day* for a single change in an *intertie* scheduling limit $\geq 25\%$ from the values reflected in last *published* "Pre-dispatch Unconstrained Regional Constraints" Report.

All other changes submitted by *market participants* in the mandatory window, if opened, will only be approved by the *IESO* in accordance with Section 3.3.6 of Chapter 7 of the *market rules*, where the revision relates solely to generating and the revision is required in order to reflect a proposed change in the operating status of the *registered facility* designed solely "to prevent the *registered facility* from operating in a manner that would violate any *applicable law*, endanger the safety of any person or damage property or the environment."

²⁰ EEA2 - NERC Emergency Energy Alert 2: Implement emergency procedures up to but not including interrupting firm load.

C.3 Summary of Allowable Dispatch Data Changes

Table C-1: Summary of Allowable Dispatch Data Changes

Reason for Bid/Offer Change	Changes Allowed		
	2 hours+	2-0 Hours	Market Rule Reference
<ul style="list-style-type: none"> Market-based changes 	Unrestricted changes to <i>dispatch data</i> except where <i>reliability</i> issue identified in <i>pre-dispatch schedule</i>	None	Chapter 7 Section 3.3.3, 3.3.10
<ul style="list-style-type: none"> <i>Forced outages, generation unit or dispatchable load</i> limitations: >the greater of 2% or 10 MW 		<ul style="list-style-type: none"> <i>Offers</i> do not need to be revised as long as IOMS outage slip is entered to reflect actual capability as long as derating does not last more than 2 hours. 	Chapter 7 Section 3.3.8
<ul style="list-style-type: none"> Personnel/Public Safety Property Damage Legal requirement Environmental <i>Regulation</i> 		<p><i>Bids</i> need to be revised to:</p> <ul style="list-style-type: none"> reflect what the <i>dispatchable load</i> reasonably expects to withdraw; indicate if their status changes to or from being dispatchable²¹; and identify when <i>operating reserve</i> capability is restored following the outage. 	
		<ul style="list-style-type: none"> Quantity and price changes to reflect actual capability 	Chapter 7 Section 3.3.6

²¹ A *dispatchable load* indicates a status change of part of its load by bidding at *MMCP*. A status change of its whole load is indicated by either not bidding for its consumption for that hour (refer to Appendix C.2.2 for additional information), or by bidding its whole consumption at *MMCP*.

Reason for Bid/Offer Change	Changes Allowed		
	2 hours+	2-0 Hours	Market Rule Reference
<ul style="list-style-type: none"> Offers/bids created or revised in response to a System Advisory issued by the IESO for under-generation 		<ul style="list-style-type: none"> Increased quantities in existing energy offers (generators, wholesale sellers) Decreased quantities in existing load bids (dispatchable loads) New offers from generators. 	Chapter 7 Section 12.2
<ul style="list-style-type: none"> Offers/bids created or revised in response to a System Advisory issued by the IESO for over-generation 		<ul style="list-style-type: none"> Decreased quantities in existing energy offers (generators, wholesale sellers) Increased quantities in existing load bids (dispatchable loads) New bids from dispatchable loads 	Chapter 7 Section 12.2
<ul style="list-style-type: none"> Offers created or revised in response to a System Advisory issued by the IESO for an operating reserve shortfall 		<ul style="list-style-type: none"> Increased quantities in existing operating reserve offers New operating reserve offers 	Chapter 7 Section 12.2
<ul style="list-style-type: none"> When IESO has directed a market participant to bid/offer for reliability reasons identified in pre-dispatch schedule (includes High-Risk Operating Conditions). 		<ul style="list-style-type: none"> Increased quantities in existing offers New offers 	Chapter 7 Section 3.3.13
<ul style="list-style-type: none"> When IESO has directed a market participant to bid/offer under terms of a Reliability Must Run Contract. 		<ul style="list-style-type: none"> Increased quantities in existing offers New offers 	Chapter 5 Section 4.8
<ul style="list-style-type: none"> Where IESO refuses a request for Segregated Mode of Operation 		<ul style="list-style-type: none"> Increased quantities in existing offers New offers 	Appendix 7.7 Section 1.2
<ul style="list-style-type: none"> Where IESO refuses request by generator for de-synchronization from the IESO-controlled grid 		<ul style="list-style-type: none"> Increased quantities in existing offers New offers 	Chapter 7 Section 11.2.3
<ul style="list-style-type: none"> Interchange schedule – Quantity Changes 		<ul style="list-style-type: none"> Quantity reductions allowed up to 60 minutes prior to the dispatch hour, due to external control area schedules 	

Reason for Bid/Offer Change	Changes Allowed		
	2 hours+	2-0 Hours	Market Rule Reference
<ul style="list-style-type: none"> • <i>Interchange schedule – NERC tag ID changes</i> 		<ul style="list-style-type: none"> • <i>NERC e-Tag identification changes allowed up to 60 minutes prior to the dispatch hour</i> 	
<ul style="list-style-type: none"> • Where <i>IESO</i> directs the Ancillary Services Provider to change the AGC requirements with less than 5 hours notice 		<ul style="list-style-type: none"> • Increased quantities in existing <i>offers</i> • New <i>offers</i> 	
<ul style="list-style-type: none"> • Where the <i>Ancillary Services Provider</i> must change the AGC requirements due to a forced outage or a de-rating to its equipment. 		<ul style="list-style-type: none"> • Increased quantities in existing <i>offers</i> • New <i>offers</i> 	
<ul style="list-style-type: none"> • Where the market participant submits a replacement energy offer due to a forced outage 		<ul style="list-style-type: none"> • Revised dispatch data for a related generation facility 	Chapter 7 Section 3.3

– End of Section –

Appendix D: Contingency Plan

D.1 Triggering Events

This Appendix contains information on the *IESO*'s contingency plan for operating the real-time *energy* and *operating reserve* markets in the event that the Market Information Management System accessed through the *Market Participant* Interface is unavailable. This plan also applies to cases where the *market participant* is not capable of communicating with the *IESO*, due to failure of hardware, software or communications.

Any of the following events may require the *IESO* to implement this contingency plan:

- failure in any of the components of the participant network or *market participant's participant workstation* including:
 - hardware;
 - software; and
 - communications components;
- failure in any of the *IESO* Market Systems including:
 - hardware;
 - software; and
 - communications.

D.2 Overriding Concerns/Principles for Contingency

Market participants are responsible for risk assessment and contingency preparation for contingencies on their side. This includes providing alternative communications pathways, Business Recovery Procedures (BRP) centres, etc. However, rather than undergoing this expense, *market participants* may choose simply to use standing *bids/offers*, default *bids/offers*, or zero *bids/offers* (which attract MCP).

The *IESO* will do its best to accept *bids/offers* through alternative pathways. However, if a widespread failure occurs, its ability to receive *dispatch data* may be restricted purely by the volume of information. In such instances, e-mailed files may be the only possible means of continuing operation.

A continuum of failures is possible; continued operation is possible under a wide range of conditions. However, failure of the Market Systems for periods greater than two hours is a valid reason for market suspension. (See "Market Manual 4, Part 4.5: Market Suspension and Resumption" for more details on this process.)

D.3 Data Inputs

During a *contingency event*, data inputs may have to be restricted according to the extent of the failure (hardware/software/communications), where the failure is located (*market participant* or *IESO*), and the length of failure. Depending on these factors, *bids/offers* may have to be communicated using an alternative medium. In contingency situations, the *IESO* may use its administrative capabilities within the tools to submit/withdraw/edit *bids* and *offers* on behalf and on the instruction of the *market participants*. The following alternatives are available:

- e-mail file; or
- phone.

If phone is used, it is impracticable to handle a large number of *price-quantity pairs*. Therefore, only simplified bids/offers, which include at least 2 and up to a maximum of 5 *price-quantity pairs* for each hour, are allowed.

The ability of the *IESO* to intervene on behalf and on the instruction of the *market participants* will depend on the extent and severity of the contingency. It may take up to an hour for the *IESO* to process bids and offers received by e-mail or phone. Therefore, it is strongly recommended that market participants submit these bids and offers well in advance, at least one hour prior to the dispatch hour to which they apply.

D.3.1 E-mail File

In the event of a failure affecting the Participant Network, but which leaves the Market Systems operational, *market participants* will e-mail a bidding file that uses Comma Separated Values (CSV) format to the *IESO*. *Market participants* are required to notify the *IESO* by phone prior to sending a CSV-format bidding file via e-mail to the *IESO*.

To submit *bids/offers* during a contingency, *market participants* will use a specific *IESO* e-mail address that was communicated to them at the time when they registered their facilities for participation in the *IESO-administered markets*.

The *IESO* administrative capabilities and procedures are published in the “Market Operator Graphical User Interface (GUI) User's Guide”.

The format requirements for the bidding files are published in the “Participant Technical Reference Manual” (PTRM) Part 6, section 5.1.2 “Bidding Applications – Template Description and Samples”. For contingency reasons, *market participants* will be encouraged to have the *dispatch data* in CSV format readily available.

This medium of communication would allow at least 2 and up to 20 *price-quantity pairs* to be submitted for each pre-dispatch, which is equal to the maximum number of *price-quantity pairs* allowed by the *market rules*.

In the event of widespread problems affecting the Participant Network, the volume of e-mails would likely become unmanageable. The *IESO* would be unable to handle e-mails from all MPs, and would therefore suspend *real-time markets*.

Note: The *IESO* directs the attention of *market participants* to the non-secure nature of Internet e-mail. All risks for the confidentiality of commercial information sent to the *IESO* via e-mail are assumed by the *market participant*.

D.4 Actions

When a *contingency event* occurs, the *IESO* needs to make an evaluation of its probable extent and duration. The extent varies according to whether the event affects the *IESO* or *market participant(s)*, and the number and criticality of the components that have been affected. The duration may be short-term (i.e. up to two hours in length), medium-term (i.e. two to four in length) or long-term (i.e. four hours plus in length).

Depending on the evaluation, the *IESO* may decide on a number of palliative measures while the awaiting restoration of service.

For a *contingency event* affecting **Market System** tools, the *IESO* will:

- inform all *market participants* to use current *dispatch instructions*;
- continue using current *offers* and *bids* available from pre-dispatch at hours 0-2;
- instruct *market participants* to re-submit *offers* and *bids* again at hour 2 (the *IESO* will accept same under short notice criteria if **Market System** tools return to service);
- suspend the market²² and instruct *market participants* to remain at the last *dispatch instruction* at hour 2, if **Market System** tools have not returned;
- not accept economic revisions to *dispatch data* in any short notice *bids/offers* (T-2); and
- allow revisions to *bids/offers* in order to fix a constraint problem.

For a *contingency event* affecting communications with a *market participant* (Participant Network), the *IESO* will:

- instruct the *market participant* to submit *bids/offers* by e-mailed file; and
- suspend the *IESO-administered markets*, if the volume of e-mails exceeds the parameters of an orderly market operation.

- End of Section -

²² *Administrative pricing* may apply. Ref to Market Manual 4.3: Real Time Scheduling, Section 1.9 - Administrative Pricing.

Appendix E: Pre-dispatch Schedule Production and Publication

E.1 Overview

Pre-dispatch is one of a series of activities that the *IESO* undertakes to assess the *security* and *adequacy* of the *IESO-controlled grid* and the activities surrounding the production of the *pre-dispatch schedule* should be viewed in the context of these other forecast and assessment activities. The relationship between these activities is as follows:

10 year forecasts & assessments → 18 month forecast & assessments → *outages* (due 33 days out) → Weekly SAA Report (day 15 through week 4) → Daily SAA Report (days 3-14) → System Status Report (days 0-2) → Day-Ahead Commitment Process → pre-dispatch (current day and 1 day out) → real-time dispatch (every five minutes)

Assessments are required for every hour of every pre-dispatch run. However, *security* and *adequacy* for a particular day will have been assessed up to 10 years out and many times (with increasing granularity) in advance of the first pre-dispatch run for any day. Consequently, assessments for pre-dispatch focus upon the impact of new and/or changed information subsequent to the previous assessments.

For further information on the 10-year forecast & assessment process, see “Market Manual 2: Market Administration, Part 2.8: 10-Year Outlook and Related Information Requirements”.

For further information on the 18-month forecast & assessment process, see “Market Manual 2: Market Administration, Part 2.11: 18-Month Outlook and Related Information Requirements”.

For further information on the *Outages*, Weekly SAA Report, Daily SAA Report and the System Status Report processes, see “Market Manual 7: System Operations”.

For further information on the Day-Ahead Commitment Process, see “Market Manual 9: Day-Ahead Commitment Process”.

The *IESO* uses an hourly primary *demand* forecast and *market participant offers* and *bids* of generation and load to calculate an optimized *energy* and *operating reserve* dispatch. Like the Daily SAA Report, pre-dispatch looks at *adequacy* in each hour. However, pre-dispatch uses *market participant offers* and *bids* that are not available for other reports²³.

The *IESO* calculates an optimized schedule of *energy* and *operating reserve* based on *market participant offers* and *bids* of generation and load and *offers* of *energy* withdrawal reductions. However, pre-dispatch uses:

- a 60-minute time-step instead of the five-minute time-step used in real-time dispatch; and
- the average *demand* forecast for each hour prepared by the *IESO*, with the exception of *IESO*-defined ramp hours and during any hour in which there is a *reliability* concern. During these hours, the *IESO* will use the highest demand interval forecasted for each hour prepared by the *IESO*.

Ramp hours are defined as follows:

²³ The Weekly SAA Report, Daily SAA Report and SSR assessments use items such as *generation capacity*, *tie-line capacity* and *outages* to assess *adequacy* of resources to meet forecast primary *demand*.

- November 1st to January 30th: HE 6 - HE 9 and HE 17- HE 18
- February 1st to October 31st: HE 6 - HE 9

Any actions taken contrary to the above criteria, including the use of peak forecasts in an hour not defined as an IESO ramp hour will be communicated via the SSR.

Real-time dispatch uses the load predictor to prepare automatically a primary *demand* forecast for the next 5 minutes based on previous primary *demand* values and expected load profiles.

The output of the pre-dispatch schedule dispatches interchange for the next hour. (The pre-dispatch schedules for Ontario resources are used only to provide information to market participants – these schedules are not implemented. The output of the real-time schedule dispatches Ontario resources for the next 5 minutes – it does not schedule external resources.)

Market mechanism will be used to solve problems as much as possible, including constraint violations. Consequently, most *IESO* and *market participant* pre-dispatch input changes will be incorporated during the next hourly pre-dispatch run rather than manually initiating the pre-dispatch sequence in the interim period between these runs. It is expected that manual initiation of the pre-dispatch sequence by the *IESO* will occur infrequently.

The *IESO* will *publish* the initial *pre-dispatch schedule* and associated projections of *market schedules* and of *market prices* by 16:00 EST of each *pre-dispatch day*, and will *publish* any revised *pre-dispatch schedules* and projections of *market schedules* and of *market prices* as soon as practical after they are determined.

The overall timing of the SSR, Pre-dispatch and Dispatch processes are summarized in Figure E-1, overleaf.

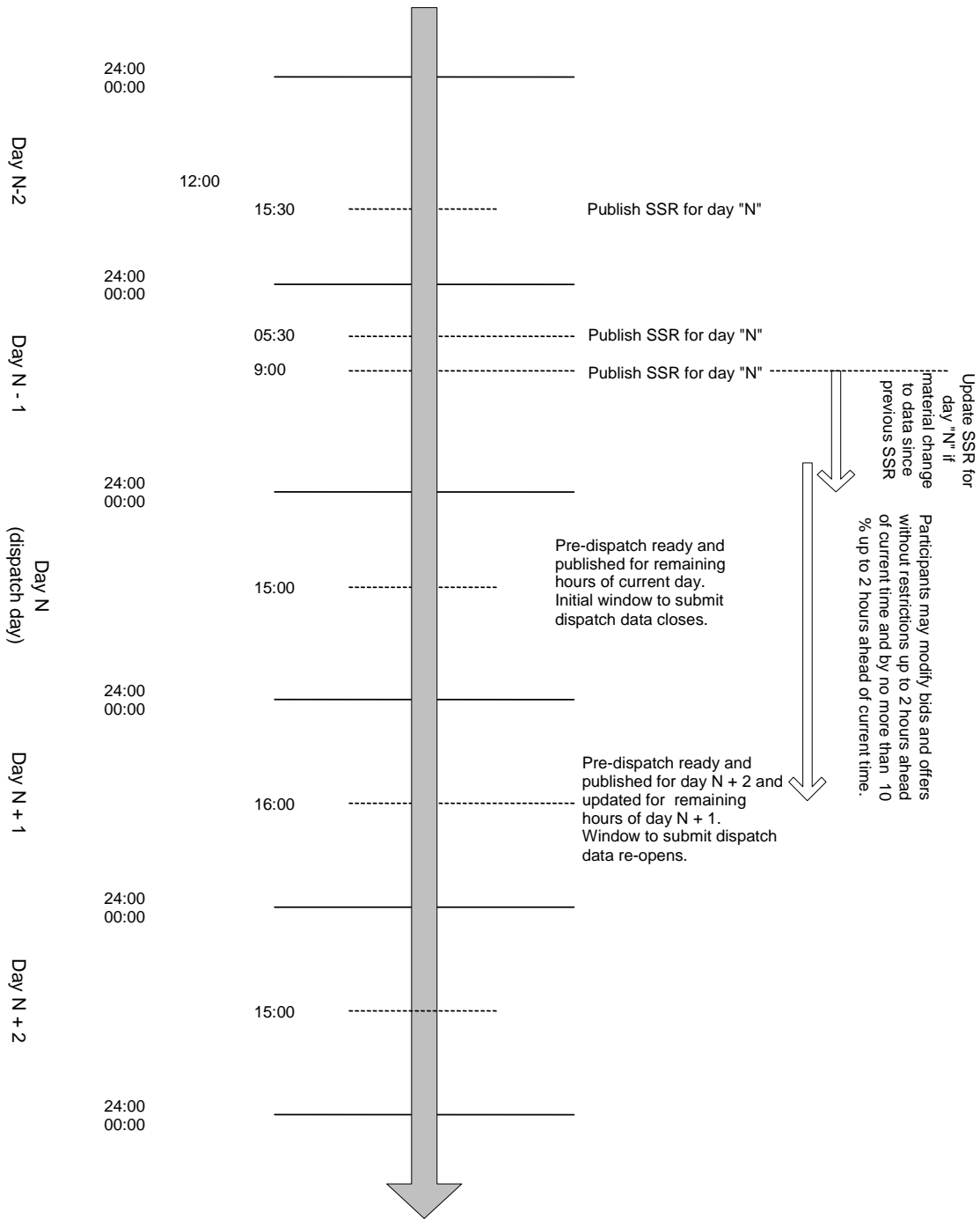


Figure E-1: SSR, Pre-dispatch and Dispatch Process Coordination Timing Chart

E.2 Time-line Definition for Pre-dispatch

An example of a pre-dispatch time-line is presented in Figure E-2.

current operating hour						
T	T + 1	T + 2	T + 3	T + 4	T + 5	
13:00 EST	14:00 EST	15:00 EST	16:00 EST	17:00 EST	18:00 EST	19:00 EST
H 14	H 15	H 16	H 17	H 18	H 19	
<-NO changes to <i>bids</i> --> <- unlimited changes to <i>bids & offers</i> or offers without <i>IESO</i> approval						

Figure E–2: Sample time-line for pre-dispatch

In this example, the current operating hour H14 (or more generally, T) is defined to be the hour ending at 14:00 EST. Thus, if the current time is 13:10 EST, then:

$$(T) = (H14) = (\text{the hour ending 14:00 EST}).$$

Hour (T+N) is interpreted as the period N hours beyond the current operating hour. Accordingly:

$$(T + 4) = (H 18) = (\text{the hour ending 18:00 EST}).$$

Some notes regarding these hours:

T (H14):

A pre-dispatch run is initiated at about 13:05 EST. *Pre-dispatch schedules* are calculated for the remaining hours of the current day (including the current hour) based on the *offers* and *bids* that have been submitted to the *IESO* by 12:50 EST.

T+1 (H15):

Interchange schedules for this hour by the H14 pre-dispatch run are implemented in the next hour.

T+2 (H16):

H14 pre-dispatch run output will provide the first very accurate view of expected scheduling of resources of this hour, since *offers/bids* for this hour cannot change after 13:00 EST without *IESO* approval.

T + 3 (H17) and hours beyond:

H14 pre-dispatch run schedules for these hours may still change significantly since unlimited changes to *bids/offers* are still allowed for these hours.

It is necessary to perform pre-dispatch at least hourly to schedule interchange for the next hour. For the hours H1-H15, the pre-dispatch run includes all remaining hours of the current day (including the current hour). For hour H16 and beyond, the pre-dispatch run includes all remaining hours of the current day (including the current hour) and all of the hours of the next day.

The *IESO* will run the pre-dispatch process manually in cases where the hourly pre-dispatch has not provided a solution – for example, corrupt inputs have led to an incorrect or unrealistic dispatch.

There are two ‘modes’ to the pre-dispatch calculation. In the ‘first mode’, run at hour H16, the *pre-dispatch schedules* for the entire 24-hour period of the next *dispatch day* are calculated for the first time. At the same time, the *pre-dispatch schedules* for the remaining hours of the current *dispatch day* are re-calculated. In the ‘second mode’, run each hour from hour H17 of the current day until hour H16 of the next day, the pre-dispatch run is re-calculated for the same period, excluding hours that have passed.

When the *pre-dispatch schedule* is re-calculated for any hour, there could be *dispatch data* changes from *market participants* revising *bids* and *offers* in response to the previous publications of the *pre-dispatch schedule*. There could also be changes to data reflecting system events that occur in real-time but that have an impact on hours beyond the current hour. Examples of such events are:

- *forced outages* of equipment that will not return to service until into the next day or beyond;
- changes in weather that require a change in the *demand* forecast; and
- changes to limits driven by *forced outages* or early returns to service of equipment.

During the time preceding the ‘first mode’ run of the pre-dispatch in hour H12, the focus of the *IESO* will be on:

- the assembly and integrity of the data for the ‘first mode’ run for the next *dispatch day*; and
- any changes or modifications to pre-dispatch input data for the remaining hours of the current *dispatch day*.

For all other hours, *IESO* will focus on data changes for the ‘second mode’ runs.

E.3 Assessment Pre-Dispatch Security & Adequacy and Resolution of Problems identified

Following each *pre-dispatch* run, the *IESO* assesses the *security* and *adequacy* of the results through a review that addresses the following:

- assessment of the power system configuration;
- assessment of the Operating *Security Limits* (OSL’s);
- assessment of area reserve control actions;
- assessment of Transmission Loading Relief (TLR) / Lake Erie Emergency Re-dispatch (LEER);
- assessment of *interchange schedules*;
- assessment of *ancillary services*;
- assessment of voltage; and
- assessment of *Automatic Generation Control* (AGC).

There are two considerations that impact the assessment of pre-dispatch *security* and *adequacy*:

1. the pre-dispatch output is not the first assessment of *security* and *adequacy*; assessments will have been made a number of times for a *dispatch hour* or day before the first pre-

dispatch runs are prepared such that, consequently, the assessments for pre-dispatch benefit from the information gathered in previous assessments, and, in particular, the *IESO* will focus upon the *Security* and *Adequacy* Assessments of the Weekly SAA Report, Daily SAA Report, and the System Status Report;

2. since *bids* and *offers* can be changed without limit up to 2 hours prior to the *dispatch hour*, *pre-dispatch schedules* will be more stable as the *dispatch hour* approaches; *pre-dispatch schedules* for 5+ hours out may be totally different from the final schedule for these hours.

Once these assessments are complete the, *IESO* evaluates best-integrated solution based on the results of these assessments. Where *security & adequacy* concerns are identified, the *IESO* will undertake remedial action that may include (but is not restricted to) the following:

- sending out System Advisories in the SSR requesting *offers/bids* to relieve *local area* inadequacies (MW, MVAR); this should occur 12 hours before the *dispatch hour* to provide cold thermal units time to start if necessary;
- sending out directives requesting *offers/bids* to relieve *local area* inadequacies (MW or MVAR); directives would be targeted specifically to relevant *generators/loads* in the areas expected to experience *local area* inadequacies, and they would command *market participants* (to the full extent of the *market rules*) to submit *offers/bids* (this would occur at the discretion of the EC, but probably within 12 hours of the *dispatch hour*); or
- modifying one or more of the following pre-dispatch inputs and re-running the pre-dispatch process:
 - reviewing available must-run contracts and activating, as necessary (although these would probably have been activated about 4 days out following assessments that are part of the 14-day forecast);
 - changing selected *regulation*; based on the pre-dispatch *security* and *adequacy* assessment, the *IESO* will review available *regulation* resources, select *regulation* contracts that provide *AGC* in the correct location, and de-activate *AGC* contracts, as necessary;
 - preparing to initiate TLR and/or LEER; based on the pre-dispatch *security* and *adequacy* assessment, the *IESO* will invoke TLR warnings or LEER procedures to reduce the *inertie* circuit loading;
 - considering the cancellation or deferral of *outages* that have not yet started or the recall of *outages* already in progress²⁴;
 - considering the selection of alternative OSL's where the *outage* assumptions are altered and implementing correct OSL's where an incorrect limit had been selected for the *outage* pattern; and/or
 - considering the revocation of approval of segregated generation and termination of operation of segregated generation.

²⁴ Cancellation, deferral or recall of *outages* is detailed in the *Systems Operation Market Manual*. However, the *IESO* will be guided by when *outages* were notified to the *IESO* and aim to allow as many *outages* to proceed as possible.

E.4 Publication & Notification of Results

In releasing any information relating to the results of the pre-dispatch process, the *IESO* will:

- ensure that all results are available;
- ensure that the confidentiality of any confidential data²⁵ is not violated in publishing the results or issuing the notifications to the scheduled *market participants*;
- confirm that the required notifications are being issued to the scheduled *market participants*; and
- confirm that the results are getting out to the *market participants* and to the public domain locations.

E.4.1 Data Released to Individual Market Participants

The *IESO* shall release the following information for each *registered facility* only to the *registered market participant* for that *registered facility*:

- The day-ahead commitment process and *pre-dispatch schedule* for that *registered facility*;
- the projected *market schedule* for that *registered facility*;
- the expected use of that *registered facility* under *reliability must-run contracts* and *contracted ancillary service contracts*; and
- the decisions on requests for *segregated mode of operation*

E.4.2 Data Released to All Market Participants

The *IESO* shall release to all *market participants* the following information for each *dispatch hour*:

- total system load and total system losses;
- area *operating reserve* requirements;
- projected hourly energy shortfalls;
- aggregate *reliability must-run resources* being directed to submit *offers* or *bids*;
- any area *operating reserve* shortfalls;
- a list of the network constraints and *security constraints* that affect the *pre-dispatch schedule*;
- the most current System Status Report;
- the projected uniform *market prices* of energy and *operating reserve* in the *IESO control area*; and
- the projected *market prices* of energy and *operating reserves* in each *intertie zone* outside the *IESO control area*.

When releasing the day-ahead commitment process and *pre-dispatch schedule*, the *IESO* shall include, for information purposes only:

²⁵ Confidentiality is usually ensured by:

- removing individual names, prices, and similar information; and
- aggregating information in order to avoid identification.

- the projected *energy prices* at each set of transmission nodes identified by the *IESO* for this purpose; and
- the projected prices for each class of *operating reserve* in each reserve area identified by the *IESO* for this purpose,

for the *dispatch hour* immediately following the hour in which such *pre-dispatch schedule* is determined and released.

– **End of Section** –

Appendix F: Boundary Entity Resources

F.1 Boundary Entity Resource Representation for Exports and Imports

There are two export tax treatments that need to be considered when selecting *boundary entity* resources. *Interchange schedules* between Canadian provinces must pay GST and *interchange schedules* to the US are exempt from GST. Specific resources have been established at each relevant location for each type of *interchange schedule*. For the Minnesota and Manitoba *interties*, these are denoted by a “CAN” or “US” reference in the *boundary entity* resource name.

For exports from Ontario wheeling through Michigan or New York and into another province (and therefore not GST exempt), the requirement is to use the “WC.PRAIRIERANGES.SINK” or “EC.MARITIMES.SINK” respectively.

For Imports into Ontario there is no need to different between Canada and US sources as the tax treatments is identical.

The *boundary entity* resources established by the IESO take the form of [X].[Y].n, where:

X = Boundary resource representation;

Y = ‘SOURCE’ or ‘SINK’; and

N = 1, 2, 3 etc.

Example: MB.WHITESHELL.CAN.SOURCE.01 is the first of 15 boundary entity resources that in this example can be used to import into Ontario energy and/or operating reserve across the Manitoba interconnection from any control area within Canada.

F.2 Table of Boundary Entity Resources

The following revised table details the final simplified *boundary entity* resource names for each *intertie zone* and the number of *boundary entity* resources that are available at each of these locations. In all cases, the number of resources refers to the number of source resources and sink resources created at each location. (For instance, there are 50 MI.LUDINGTON.SOURCE resources and 50 MI.LUDINGTON.SINK resources available to each *market participant*.)

NOTE: THESE NAMES ARE BLOCK CAPITALS i.e. MI.LUDINGTON.SOURCE.01

Table F-1: Boundary Entity Resources

Intertie	MSP ²⁶ Name	Boundary Entity resource Name	# of BER Resources	Description
Manitoba 115 kV	MBSK	MB.SEVENSISTERS.SINK	2	Export via <i>IESO</i> /Manitoba 115kV intertie
		MB.SEVENSISTERS.SOURCE	2	Import via <i>IESO</i> /Manitoba 115kV intertie
Manitoba 230 kV	MBSI	MB.WHITESHELL.CAN.SINK	15	Export to Canada via <i>IESO</i> /Manitoba 230kV intertie
		MB.WHITESHELL.CAN.SOURCE	15	Import via <i>IESO</i> /Manitoba 230kV intertie
		MB.WHITESHELL.US.SINK	5	Export to US via <i>IESO</i> /Manitoba 230kV intertie
Michigan	MISI	MI.LUDINGTON.SINK	50	Export to US (except PJM) via <i>IESO</i> /Michigan intertie
		MI.LUDINGTON.SOURCE	50	Import via <i>IESO</i> /Michigan intertie from the US (except PJM)
		WC.PRAIRERANGES.SINK	5	Export to Canada via <i>IESO</i> /Michigan intertie
		MD.CALVERTCLIFF.SINK	40	Export to PJM via <i>IESO</i> /Michigan intertie
		MD.CALVERTCLIFF.SOURCE	40	Import via <i>IESO</i> /Michigan intertie from PJM
Minnesota	MNSI	MN.INTFALLS.US.SINK	10	Export to US via <i>IESO</i> /Minnesota intertie
		MN.INTFALLS.US.SOURCE	10	Import via <i>IESO</i> /Minnesota intertie
		MN.INTFALLS.CAN.SINK	5	Export to Canada via <i>IESO</i> /Minnesota intertie
New York	NYSI	NY.ROSETON.SINK	50	Export to US (except PJM) via <i>IESO</i> /NYISO intertie
		NY.ROSETON.SOURCE	50	Import via <i>IESO</i> /NYISO intertie from the US (except PJM)
		EC.MARITIMES.SINK	2	Export to Canada via <i>IESO</i> /NYISO intertie
		MD.CALVERTCLIFF.SINK	40	Export to PJM via <i>IESO</i> /NYISO intertie
		MD.CALVERTCLIFF.SOURCE	40	Import via <i>IESO</i> /NYISO intertie from PJM
Quebec B5D/B31L ²⁷	PQBE	PQ.BEAUHARNOIS.SOURCE	20	Import via <i>IESO</i> /Quebec intertie B5D/B31L
Quebec X2Y	PQXY	PQ.BRYSON.SINK	5	Export via <i>IESO</i> /Quebec intertie X2Y

²⁶ MSP - Market scheduling point or "tie point".

²⁷ Due to scheduling restrictions imposed by the *IESO*, market participants scheduling imports on the Beauharnois interface are required to use only the *boundary entity* resources PQ.BEAUHARNOIS.SOURCE.01-10.

Intertie	MSP²⁶ Name	Boundary Entity resource Name	# of BER Resources	Description
		PQ.BRYSON.SOURCE	5	Import via <i>IESO</i> /Quebec intertie X2Y
Quebec H4Z	PQHZ	PQ.KIPAWA.SINK	5	Export via <i>IESO</i> /Quebec intertie H4Z
		PQ.KIPAWA.SOURCE	5	Import via <i>IESO</i> /Quebec intertie H4Z
Quebec D5A	PQDA	PQ.MACLAREN.SINK	5	Export via <i>IESO</i> /Quebec intertie D5A
		PQ.MACLAREN.SOURCE	5	Import via <i>IESO</i> /Quebec intertie D5A
Quebec H9A	PQHA	PQ.MASSON.SINK	5	Export via <i>IESO</i> /Quebec intertie H9A
		PQ.MASSON.SOURCE	5	Import via <i>IESO</i> /Quebec intertie H9A
Quebec P33C	PQPC	PQ.PAUGAN.SINK	5	Export via <i>IESO</i> /Quebec intertie P33C
		PQ.PAUGAN.SOURCE	5	Import via <i>IESO</i> /Quebec intertie P33C
Quebec Q4C	PQQC	PQ.QUYON.SOURCE	5	Import via <i>IESO</i> /Quebec intertie Q4C
Quebec D4Z	PQDZ	PQ.RAPIDDESISLE.SINK	5	Export via <i>IESO</i> /Quebec intertie D4Z
		PQ.RAPIDDESISLE.SOURCE	5	Import via <i>IESO</i> /Quebec intertie D4Z
Quebec A41T/A42T	PQAT	PQ.OUTAOUAIS.SINK	20	Export via <i>IESO</i> /Quebec intertie A41T/A42T
		PQ.OUTAOUAIS.SOURCE	20	Import via <i>IESO</i> /Quebec intertie A41T/A42T
		PQ.OUTAOUAIS.US.SINK	20	Export to US via <i>IESO</i> /Quebec intertie A41T/A42T

- End of Section -

Appendix G: NERC tagging Ontario Specific Requirements

G.1 Specific requirements for *NERC* e-Tag

The following requirements are associated with the Physical Path section of the NERC tag. The conventions listed below will ensure correct treatment of the transaction by the IDC model for curtailment purposes. Failure to follow these requirements may result in transaction curtailments by the TLR process when the transaction does not impact the flow gate in question, due to incorrect modeling within IDC.

CA Column

- Control Area (CA) has to contain “ONT” when the generation supplying the transaction is physically located in Ontario.
- Control Area (CA) has to contain “ONT” when the load being supplied by the transaction is physically located in Ontario.

TP Column

- All transactions associated with the *IESO* must show the *IESO* as Transmission Provider (TP), using “ONT” as identifier.
 - This includes all transactions with HQT and wheel through transactions (where the *IESO* is not identified as the source or sink CA).

POR and POD Column

- Point of Receipt (POR) and Point of Delivery (POD) names must represent the interface that the transactions are associated with. For exports, a POD must be selected from the drop down list and for imports, a POR must be selected. Use the following link for the POD/POR information: [TSIN info](#)

Example: With the introduction of phase shifters on all circuits across the Ontario - Michigan *intertie*, market participants that are submitting *offers* and *bids* for *interchange schedules* across the Ontario - Michigan *intertie* are required to use the following POD and POR names:

- ONT.IMPORT.MECS.PS as POR name for *interchange schedules* into *IESO* from MECS; and
- ONT.EXPORT.MECS.PS as POD name for *interchange schedules* out of the *IESO* towards MECS.

For those interties where segregated mode of operation is available, the Point of Delivery (POD) and Point of Receipt (POR) portion of the physical path in the e-Tag must be as follows:

- ONT.EXPORT.Q4C as the POD name for *interchange schedules* out of the *IESO* towards *HQT* at Chats Falls;

- ONT.EXPORT.LAW.as the POD name for *interchange schedules* out of the *IESO* towards *HQT* at Beauharnois; and
- ONT.IMPORT.LAW as the POR name for *interchange schedules* into *IESO* from *HQT* at Beauharnois.

SE Column

- This column should identify ONT as the scheduling entity (SE) on those rows where an Ontario POR/POD is identified.

G.2 Examples of NERC e-Tag Format Convention for Wheeling through Interchange Transactions

Example 1

Dispatch data for an import and an export that contains *dispatch data* with the following *NERC e-Tag* IDs would indicate a linked wheeling through *interchange schedule*:

- WI_GGGG_ONTMM1234567_LLLL; and
- WX_GGGG_ONTMM1234567_LLLL.

Example 2

A linked wheel through *interchange schedule* involving the Hydro Quebec TransEnergie (HQT) *control area*, the *NERC e-Tag* must identify HQT as being the SOURCE, the SINK or intermediate *control area*; otherwise, the *IESO* will deny the *NERC e-Tag*.

For example, a linked wheel through *interchange schedule* from Michigan to New York through Quebec must be tagged MECS-ONT-HQT²⁸

Where:

- MECS is the source *control area* in Michigan; and
- HQT is the Quebec sink *control area*.

An additional NERC e-Tag will be required to complete the linked wheel through transaction from Michigan to New York.

The correct identification of these transactions in the NERC e-Tag tool must show the IESO as both the Generating Control Area and the Transmission Provider.

All transactions involving Hydro Quebec TransEnergie must also identify HQT as a Transmission Provider in order for the *NERC IDC* tool to treat them appropriately (as radial or DC transmission).

- End of Section -

²⁸ The *IESO* (ONT) will be identified as an intermediary *control area* in accordance with *market rules* Chapter 7, Section 3.5.

References

Document ID	Document Title
MDP_RUL_0002	Market Rules for the Ontario Electricity Market
MDP_PRO_0014	Market Manual 1: Market Entry, Maintenance & Exit, Part 1.1: Participant Authorization, Maintenance & Exit
MDP_PRO_0016	Market Manual 1: Market Entry, Maintenance & Exit, Part 1.2: Facility Registration, Maintenance & De-registration
MDP_PRO_0024	Market Manual 2: Market Administration, Part 2.8: 10-Year Outlook and Related Information Requirements
IMP_PRO_0024	Market Manual 2: Market Administration, Part 2.11: 18-Month Outlook and Related Information Requirements
IMP_PRO_0034	Market Manual 4: Market Operations, Part 4.3: Real-Time Scheduling of the Physical Markets
MDP_PRO_0030	Market Manual 4: Market Operations, Part 4.5: Market Suspension and Resumption
IMP_MAN_0012	Market Manual 7: System Operations Part 7.0: System Operations Overview
IMP_PRO_0033	Market Manual 7: System Operations, Part 7.2: Near Term Assessment and Reports
IMP_PRO_0035	Market Manual 7: System Operations, Part 7.3: Outage Management
IESO_MAN_0041	Market Manual 9: Day-Ahead Commitment Process
IMO_GDE_0003	Market Participant Graphical User Interface User's Guide
N/A	NERC Operating Manual
IMO_MAN_0024	Market Manual 6: Participant Technical Reference Manual

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