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PROCEDURE

Market Manual 4: Market Operations

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

Issue 64.0

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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Related Documents

Document ID	Document Title
IMP_PRO_0034	Market Manual 4.3: Real-Time Scheduling of the Physical Markets

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Reference (Paragraph and Section)	Description of Change
Throughout	Added reference to electricity storage participation where required.
Sections 2.1, 2.2, and 2.4.1	Added content related to *electricity storage participants* and *electricity storage facilities.*
Section 2.4.3	Added new Section 2.4.3 titled “Operating Reserve Offers for Electricity Storage Facilities”.
Appendix A.3	Added new Appendix A.3 titled “State of Charge and Remaining Duration of Service Requirements when Submitting Offers and Bids for Electricity Storage Facilities”.
Appendix B	Added content related to *electricity storage participants* and *electricity storage facilities.*

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.

The "Market Operations Manual" is Series 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".

– 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*.

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. For more information on the participant authorization and equipment registration processes, refer to Market Manual 1.5: Market Registration Procedures.

Dispatch data consists of:

- *Offer*s to provide *energy* and *operating reserve* by a *dispatchable generation facility,* dispatchable *electricity storage facility,* or a *boundary entity*,
- *Bid*s to take *energy* and *offers* to provide *operating reserve* by a *market participant* having a *dispatchable load facility*, dispatchable *electricity storage facility*, or a *boundary entity*,
- *Bids* to reduce *energy* withdrawals by a *capacity market participant* having an *hourly demand response (HDR)* resource,
- *S*elf-schedules for the provision of *energy* by self-scheduling *generation facilities*, and transitional scheduling *generators*, and *self-scheduling electricity storage facilities*[1],
- Forecasts for the *energy* expected to be provided by *intermittent generators*, and
- Installed capacity net *outages* and *derates* to be provided by *variable generators*.

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 *security* and *adequacy* assessments and *pre-dispatch schedule* (and notification to scheduled *market participants*).

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

[1] For the purpose of this *market manual,* within the context of submitting *self-schedules*, all references to *self-scheduling electricity storage facilities* shall mean the injecting component of *the self-scheduling facility*. The withdrawing component does not submit *self-schedules*.

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 4.5: 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,* as per *Market Rule* Chapter 7, Sections 3.4.2 and 3.9 (*MR* Ch. 7 Sec. 3.4.2 and 3.9), is not included as part of this *market manual*.

1.3 Roles and Responsibilities

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

- ***Generators* and *electricity storage participants,*** *having dispatchable generation facilities* and dispatchable *electricity storage facilities*[2] *that are responsible for:*
  - Submitting *offer*s 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* and *electricity storage participants*** *having self-scheduled generation facilities, self-scheduling electricity storage facilities, or transitional scheduling generators 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 generators 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,
- ***Generators*** *having variable generation that are responsible for:*
  - Submitting the total installed capacity net any derates or *outages* to the *variable generation* facility, and
  - Making changes to data as required within the required timeframe,
- ***Market participants*** having ***dispatchable loads* or dispatchable *electricity storage facilities***[3] that are responsible for:
  - Submitting *bids* for *energy* and *offer*s 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,

[2] *Electricity storage facilities* proposing to inject *energy* submit *offers*.

[3] *Electricity storage facilities* proposing to withdraw *energy* submit *bids*.

- ***Market participants*** having ***hourly demand response (HDR)*** resources that are responsible for:
    - Submitting *bids* to reduce *energy* withdrawals for *registered facilities* in the real-time *energy* market 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 *offer*s for *energy* and *offer*s 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 7.3: Outage Management 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.

1.4 Contact Information

Changes to this public *market manual* are managed via the *IESO* Change Management process. Stakeholders are encouraged to participate in the evolution of this *market manual* via this process.

To contact the *IESO*, you can email *IESO* Customer Relations at customer.relations@ieso.ca or use telephone or mail. Customer Relations staff will respond as soon as possible.

– End of Section –

2. 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 (dispatchable loads* or *electricity storage units* proposing to withdraw*)*, *bids* to reduce *energy* withdrawals (*HDRs*), 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.

2.1 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 *offer*s and *bids* for *energy* or, in addition, *offer*s for *operating reserve* in the real-time *energy* and *operating reserve* markets (*MR* Ch.7, Sec. 3.4.1.1 and 3.4.1.2):

- ***Generators*** having *dispatchable generation facilities,* who submit *offers* to provide *energy* or, in addition*, operating reserve* for registered facilities*,*
- ***Electricity storage participants*** having dispatchable *electricity storage units****,*** 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,
- ***Electricity storage participants*** with dispatchable *electricity storage units* submitting *bids* to take *energy* or, in addition, to offer *operating reserve* for registered facilities,
- ***Market participants*** with *HDR* resources submitting *bids* to reduce *energy* withdrawals, and
- ***Market participants*** with a *boundary entity* capability who submit *bids* and *offers* to import energy and/or capacity 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 (*MR Ch. 5*, Sec. 4.5.6A.1),
- The prices and quantities of the standing *offers* shall be determined by the *IESO Board* (*MR* Ch. 5, Sec. 4.5.6A.2),
- 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 (*MR* Ch. 5, Sec. 4.5.6A.3), 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 (*MR* Ch. 5, Sec. 4.5.6A.5).

Market participants may submit initial *offer*s to supply *energy* and *operating reserve*, *bids* 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 "Energy Market Graphical User Interface User's 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 C) (*MR* Ch. 7, Sec. 3.2.1).

A *market participan*t may submit only one *offer* to supply *energy*, or one *bid* to take *energy* or to reduce *energy* withdrawals, 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 (*MR* Ch. 7, Sec. 3.5.1).

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

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 (*MR* Ch. 7, Sec. 3.6.3). The classes of *operating reserve* for which a *market participan*t can submit *dispatch data* with respect to a specific *registered facility*, other than a *boundary entity*, are established during the *market registration* process. Refer to Market Manual 1.5: Market Registration Procedures. *Boundary entities* are registered through the Participant Authorization process 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 *offer*s and standing *bids*) for that *registered facility* (*MR* Ch. 7, Sec. 3.3.9). 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* (*MR* Ch. 7, Sec. 3.3.9.2):

- 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 (refer to *MR* Ch. 7, App. 7.7 as well as Section 2.5 of this manual).

2.2 Energy Schedules and Forecasts

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

- ***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 *dispatc*h hour,
- ***Generators*** having *intermittent generators* must submit a forecast of the amount of *energy* that they expect to be injected in each *dispatch* hour,
- ***Generators*** having *variable generation* must submit *dispatch data* indicating the total *installed capacity* net any *derates* or *outages* in each *dispatch hour*, and
- ***Generators*** having *transitional scheduling generators* must submit *dispatch data* indicating the amount of *energy* to be provided by each *transitional scheduling generator* in each *dispatch* hour.
- ***Electricity storage participants*** having *self-scheduling electricity storage facilities* must submit *dispatch data for* the injecting resource indicating the amount of *energy* to be provided. The withdrawing resource for such *facilities* do not submit *energy* schedules.

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

2.3 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 (*MR* Ch. 7, Sec. 3.3.1 and 3.3.3). *Market participants* may also submit standing *dispatch data* instructions to the *IESO* where these instructions will not change from *trading week* to *trading week* (*MR* Ch. 7, Sec. 3.3.9). 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 hour*s 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 (*MR* Ch. 7, Sec. 3.3.9.2).

The procedure for submitting *dispatch data* and unrestricted changes is contained in Section 2.3.3 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 (*MR* Ch. *7*, Sec. 3.3A).
3. After 10:00 EST, the *IESO* will begin the *DACP*. Refer to Market Manual 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 (*MR* Ch. *7*, Sec. 3.3.3).
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 require[4] (*MR* Ch. *7*, Sec. 3.5.1). (Refer to Appendix D 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* (*MR* Ch. *7*, Sec. 5.4). 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 (*MR* Ch. *7*, Sec. 5.5). Refer to Appendix D 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 (*MR* Ch. 7, Sec. 3.3).

8. 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 B)[5]. Market mechanisms are to be used as much as possible to solve problems with the *pre-dispatch* schedule.

[4] 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.

[5] 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.

9. 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 B).
10. 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 participan*t 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 (*MR* Ch. 7, Sec. 3.3.10, 3.3.12, and 3.3.13). *Market participants* should consult the advisory notice for any applicable advisories, warnings and problems.

A *market participan*t 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 *dispatch* instruction or 10 MW[6] (*MR* Ch. 7, Sec. 3.3.8). *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 (refer to Market Manual 4.3: Real Time Scheduling of the Physical Markets, sections 7.1 and 7.5).

If the quantity of *demand response capacity* that can be delivered by an *HDR* resource differs from the submitted *demand response energy bid* by 5 MW for any *dispatch hour*, the *capacity market participan*t *(CMP)* must submit revised *dispatch data* to the *IESO* as soon as practical. The *CMP* must also notify the *IESO* via telephone as soon as practical of such *dispatch data* revisions when the *IESO* has issued an activation notice to the *CMP* for that *HDR* resource.

2.3.1 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:*

[6] 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.

- In the mandatory window, if the units have a start-up delay of less than two 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 two hours, *market participants* should withdraw *dispatch data* not less than two 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 B).

2.3.2 Replacement Energy Offers Program

The Replacement Energy Offers program (*MR* Ch. 7, Sec. 3.3.4B and 3.3.4C) allows *registered market participants* whose hydroelectric *generation facility*, combined cycle *generation facility*, *enhanced combined cycle facility* or *cogeneration facility* experiences a *forced* or urgent *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*.

Note: The Replacement Energy Offers program is not available for resources participating in capacity exports[7].

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* or urgent *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 or* urgent outage.

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

The registered *market participant* must notify the *IESO* via telephone to report the *outage (*as per the *outage* process), and make a verbal request to participate in the *Replacement Energy Offers* program. 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.*

Note: The Replacement Energy Offers program is not available for day-ahead production cost guarantees (DA-PCGs). It is available for real-time generation cost guarantees (RT-GCGs), as long as the replacement unit can meet the eligibility requirements of the original unit.

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

[7] For more information on capacity exports, see section 2.6

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 or* urgent outage. In addition, both *generation facilities* must have the same *registered market participant*.

2.3.3 Procedural Steps for Submitting Dispatch Data and Revisions Until Two Hours Prior to the Dispatch Hour

Table 2-1: Procedural Steps for Submitting Dispatch Data and Revisions Until Two Hours Prior to the Dispatch Hour

Step	Completed by…	Action
1	***Market Participant***	From 06:00 EST on the *pre-dispatch day,* **submit *energy* and *operating reserve offer*s and/or *energy bids*** (dispatchable generation, *dispatchable load facilities, HDR resources ,* dispatchable *energy storage facilities* and/or *boundary entities*), *self-schedules (self-scheduling generation facilities, self-scheduling energy storage facilities,* and *transitional scheduling generators*), *energy* forecasts (*intermittent generators*), installed capacity, net derates or *outages* (*variable generation*) and requests for segregation for any of their *registered facilities* for any or all hours of the *dispatch day*. *Market participant*s may also submit standing *dispatch data* for future *dispatch day*s (or revisions to existing standing *dispatch data*) by identifying a *dispatch day* type ('Mon.' through to 'Sun.' or 'All') in addition to the *dispatch data*. **Note**: Each *offer* to provide *operating reserve* must be accompanied by a corresponding *energy offer* or *energy bid* that covers the same megawatt (MW) range. Revisions to previously submitted *dispatch data* for any hour or hours may be made as required.
2	*IESO*	The *IESO* receives, timestamps, and performs a structural validity check on *dispatch data* to confirm that the data format and structure is correct. If revisions are received within two hours of the *dispatch hour*, the process described in Section 2.3.4 is applied.
3	*IESO*	The *IESO* sends *market participant* a message indicating that the *dispatch data* is structurally invalid (if applicable).
4	***Market Participant***	Receive a structural invalidity message (if applicable).
5	***Market Participant***	Correct the *dispatch data* and resubmit (if applicable).
6	*IESO*	The IESO confirms receipt of the submitted *dispatch data* if structurally valid.
7	***Market Participant***	Receive from the *IESO* confirmation of *dispatch data* receipt by the *IESO*.
8	***Market Participant***	Immediately contact the *IESO* if confirmation is not received.

Step	Completed by…	Action
9	***Market Participant*** and *IESO*	The *IESO* and *market participant* resolve the status of submitted *dispatch data* or revision.
10	*IESO*	The *IESO* determines if the *dispatch data* is for the current *dispatch day* being processed, or a future *dispatch day* (in case of standing *dispatch data*).
11	*IESO*	The *IESO* registers standing *dispatch data* and does not consider such data for the *dispatch day* currently being processed.
12	*IESO*	The *IESO* registers data not previously registered as standing and validates current *dispatch data*.
13	*IESO*	If the *dispatch data* is invalid, the *IESO* notifies the *market participant* via a rejection message.
14	***Market Participant***	Receive rejection of invalid *dispatch data* (if applicable).
15	***Market Participant***	Correct and resubmit the invalid *dispatch data* (via step 1).
16	*IESO*	The *IESO* updates *dispatch data* set with current valid *offer*s, *bids*, schedules, and forecasts in preparation for running the pre-dispatch process.
17	*IESO*	The *IESO* runs the pre-dispatch process and determines the *pre-dispatch schedule*s based on *offer*s, *bids*, schedules and forecasts for *energy* and *operating reserve*. It also confirms *intertie* schedules and requests for segregation with other *control area operator*s.
18	*IESO*	Other *control area operator*s confirm with the *IESO intertie* schedules and requests for segregation.
19	*IESO*	The *IESO publishes* advisory notices, which will notify *market participant*s of any advisories, warnings, and problems.
20	*IESO*	The *IESO* may reject *dispatch data* previously accepted or require specific *market participant*s to submit or resubmit a revision to the quantity element of *dispatch data*, or both, based on the results of the pre-dispatch process. Such rejections, submissions or changes are based on the need to maintain the *reliability* of the *IESO-controlled grid*.
21	***Market Participant***	Specific *market participant*s receive a **rejection of previously accepted data or a requirement to submit or resubmit a revision** to the quantity element of *dispatch data*, or both, due to a *reliability* issue on the *IESO controlled grid*.
22	*IESO*	The *IESO* notifies each individual *market participant* of *pre-dispatch schedule*s and decision on their *request for segregation*. All *market participant*s are notified of aggregate data.

Step	Completed by…	Action
23	***Market Participant***	*Market participant*s **receive notification of *energy* and *operating reserve pre-dispatch schedule*s**, including *market prices* and quantities for their own individual *facilities*. All *market participants* receive notice of aggregate data. *Market participant*s receive notification of approval/denial of their requests for segregation. See Appendix D: Pre-dispatch Schedule Production and Publication. Appendix A provides information on where to find examples of: • *Pre-dispatch energy* results, • *Pre-dispatch operating reserve* results, • Public results, • The totals report, • *Market clearing prices*, • *Security* constraints, and • Regional constraints.

2.3.4 Procedural Steps for Submitting Dispatch Data and Revisions Within Two Hours of the Dispatch Hour

Table 2-2: Procedural Steps for Submitting Dispatch Data and Revisions Within Two Hours of the Dispatch Hour

Step	Completed by…	Action
1	***Market Participant***	Submit revisions to *dispatch data* for any of their *registered facilities*. Submissions are required • Within two hours of the actual *dispatch hour* but at least 10 minutes prior to the *dispatch hour* for *registered facilities* other than *boundary entities*. • Within two hours of the actual *dispatch hour* but at least 60 minutes prior to the *dispatch hour* for *boundary entities*.
2	*IESO*	The *IESO* receives, timestamps, and performs a structural validity check on *dispatch data* revisions.
3	*IESO*	The *IESO* sends *market participant* a message indicating that the *dispatch data* revision is structurally invalid (if applicable).
4	***Market Participant***	Receive a structural invalidity message (if applicable).
5	***Market Participant***	Correct the *dispatch data* revision and resubmit (if applicable).
6	*IESO*	The IESO confirms receipt of the submitted *dispatch data* revision if structurally

Step	Completed by…	Action
		valid.
7	***Market Participant***	Receive from the *IESO* confirmation of *dispatch data* revision receipt by the *IESO*.
8	***Market Participant***	Immediately contact the *IESO* if confirmation is not received.
9	***Market Participant*** and *IESO*	The *IESO* and *market participant* resolve the status of submitted *dispatch data* revision.
10	*IESO*	The *IESO* registers and validates the *dispatch data* revision.
11	*IESO*	If the *dispatch data* revision is invalid, the *IESO* notifies the *market participant* via a rejection message.
12	***Market Participant***	Receive rejection of invalid *dispatch data* revision (if applicable).
13	***Market Participant***	Correct and resubmit the invalid *dispatch data* revision (via step 1).
14	*IESO*	The *IESO* determines if the change passes the *IESO* Short Notice Change Criteria for the two hour window. See Appendix B for the *IESO* Short Notice Change Criteria.
15	*IESO*	The *IESO* sends a rejection message to the *market participant* if the *dispatch data* revision does not pass the *Dispatch data* Revision Acceptance Criteria.
16	***Market Participant***	Receive a rejection message from the *IESO* if the *dispatch data* revision does not pass the *Dispatch data* Revision Acceptance Criteria.
17	*IESO*	The *IESO* updates *dispatch data* set with current valid *offer*s, *bids*, schedules and forecasts in preparation for running the pre-dispatch process.
18	*IESO*	The *IESO* runs the pre-dispatch process and determines the *pre-dispatch schedule*s based on *offer*s, *bids*, schedules and forecasts for *energy* and *operating reserve*. It also confirms *intertie* schedules and requests for segregation with other *control area operator*s.
19	*IESO*	Other *control area operator*s confirm with the *IESO intertie* schedules and requests for segregation.
20	*IESO*	The *IESO publishes* advisory notices, which will notify *market participants* of any advisories, warnings and problems.
21	*IESO*	The *IESO* may reject *dispatch data* previously accepted or require specific *market participants* to submit or resubmit a revision to the quantity element of *dispatch data*, or both, based on the results of the pre-dispatch process. Such rejections, submissions or changes are based on maintaining the *reliability* of the *IESO-controlled grid*.

Step	Completed by…	Action
22	***Market Participant***	Specific *market participant*s receive a rejection of previously accepted data or a requirement to submit or resubmit a revision to the quantity element of *dispatch data*, or both, due to a *reliability* issue on the *IESO controlled grid*.
23	*IESO*	The *IESO* notifies each individual *market participant* of *pre-dispatch schedule*s and decision on their requests for segregation. All *market participants* are notified of aggregate data.
24	***Market Participant***	Receive notification from the *IESO* of ***energy* and *operating reserve pre-dispatch schedules*** including *market clearing prices* and cleared quantities for their own individual *facilities*. All *market participants* are notified of aggregate data and decision on their requests for segregation. See Appendix D: Pre-dispatch Information Release and Publication.

2.4 The Structure of Dispatch Data

2.4.1 Energy Offers and Bids

Each *energy offer* and *energy bid* for real time must contain at least two and may contain up to 20 *price-quantity pair*s 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)* (*MR* Ch. 7, Sec. 2.2.6A). Should a *market participant* wish to operate a *facility* below its registered *minimum loading point* (PMIN) an *outage* request is to be submitted to derate the *facility* to the output desired two 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.

Offers reflecting *flexible nuclear generation* are to be submitted when the nuclear *generator* determines, at its own discretion, that the unit has such capability under normal operations without requiring a unit shutdown and while respecting safety, equipment, environmental and regulatory

restrictions. For nuclear *generation facilities,* the *offer price* in the *price-quantity pair* corresponding to *flexible nuclear generation*, when available, must be no less than -$5/MWh.

Offers in respect of *variable generation* are to be submitted in the following manner:

The *offer price* in the *price-quantity pair* corresponding to Solar and Wind resources (excluding the last 10% of the available capacity of a wind *facility*) must be no less than -$3/MWh.

The *offer price* in the *price-quantity pair* corresponding to the last 10% of the available capacity of a wind *facility* must be no less than -$15/MWh.

The *IESO* will attempt to provide *market participants* with flexibility for all IESO-approved planned testing, provided:

- There are no reliability concerns, and
- The scope of the test (including the scope of any potential changes to the test plan) has been identified by the market participant at the time of the original submission.

Normally, dispatchable generators and dispatchable *electricity storage participants* are expected to *offer* at an appropriate price to be scheduled for the full capability of the test unit, and to use *outage* requests to derate the test unit to the required test output levels.

To ensure full capability for the test, the offer price in the price-quantity pair corresponding to solar and wind resources during an IESO-approved planned test may be less than -$15/MWh for the duration of the test.

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 (*MR* Ch. 7, Sec. 3.5.3).

Prices may be negative with such negative prices meaning (*MR* Ch. 7, Sec. 3.5.4):

- 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 (*MR* Ch. *7,* Sec. 3.5.4.1), 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 (*MR* Ch. *7,* Sec. 3.5.4.2).

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 pair*s contained in the *energy bid* or *energy offer* (*MR* Ch. 7, Sec. 3.5.5).

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.

CMPs must submit ramp up and ramp down values for each *HDR* resource that is equal to the *demand response capacity* of the *HDR* resource. For example, an *HDR* resource with a *demand response capacity* of 10 MW would submit ramp up and ramp down values of 10 MW/minute.

The largest quantity in any *energy offer* or *energy bid* for any *dispatch hour* must be at least 1 MWh but must not exceed the lesser of (*MR* Ch. 7, Sec. 3.5.6):

- *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 a bid 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 participan*t 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 E*nergy* 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 participan*t may use as a basis to revise its *energy offer*s in subsequent submissions (*MR* Ch. 7, Sec. 3.5.7).

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* or *electricity storage unit* proposing to inject 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,* a *self-scheduling electricity storage facility,* or a *transitional scheduling generator*), *electricity storage unit* proposing to inject ,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* (*MR* Ch. 7, Sec. 3.4.4).

Every submission of *dispatch data* with respect to a *dispatchable load facility, electricity storage unit* proposing to withdraw, 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* (*MR* Ch. 7, Sec. 3.4.5).

Every submission of *dispatch data* with respect to a *bid* 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.* (*MR* Ch. 7, Sec. 3.4.5)

A *demand response energy bid* is a *bid* greater than the *demand response bid* price threshold and less than the *MMCP*. The *demand response bid* price threshold is $100/MWh. A *CMP* wanting to meet its *capacity obligation* must submit a *demand response energy bid* equal to the *capacity obligation* for either a(n):

- *Dispatchable load,*
- *HDR* resource, or
- Combination of both,

for all hours of the *availability window* of the *obligation period* (as specified in Market Manual 12: Capacity Auctions).

For a dispatchable *electricity storage facility,* for a given *dispatch hour*, all *bid* prices from a given *electricity storage unit* proposing to withdraw *energy* must be less than all *offer* prices from that same *electricity storage unit* proposing to inject *energy*. Refer to MR Chapter 7, Section 21.5.[8]

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*) (*MR* Ch. 7, Sec. 3.3.18). 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 B.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 4.3: Real-Time Scheduling of the Physical Markets for more details.

For further certainty, a *market participant* registered as *an electricity storage facility* is not entitled

[8] This requirement ensures that the injecting and withdrawing resources do not receive conflicting dispatches.

to change its load status as identified in the preceding paragraphs and as set out in MR *Ch. 7, Sec. 3.3.18.* Withdrawing *electricity storage units* must follow the *outage* requirements set forth in Market Manual 7.3 to signal planned unavailability and the requirements set forth in Appendix B of this *market manual* for *state of charge* changes.

When a *market participant* whose *generation facility* or *electricity storage unit* is expected to undergo a test[9] 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* or injecting *electricity storage unit*. Where the test is instantly recallable, these *generation facilities* or injecting *electricity storage units* 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 A for content requirements of *dispatch data.*

2.4.2 OR Offers

A *registered market participan*t may not submit, for any *registered facility*, more than one *offer* to provide each class of *operating reserve* in any *dispatch hour* (*MR* Ch. 7, Sec. 3.6.1). 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 (*MR* Ch. 7, Sec. 3.3.8 and Ch. 7, App. 7.3, Sec. 1.1.4).

An *offer* to provide *operating reserve* must contain at least 2 and may contain up to five *price-quantity pair*s 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 (*MR* Ch. 7, Sec. 3.6.2).

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

See Appendix A for content requirements of dispatch data.

2.4.3 Operating Reserve Offers for Electricity Storage Facilities

In addition to the requirements set forth in Section 2.4.2, for an *electricity storage facility* participating in the *operating reserve* markets, for any given hour, the simultaneous submission of *offers* from an injecting *electricity storage unit* and a withdrawing *electricity storage unit* is not

[9] For more on *dispatch data* submission for *generator* and *electricity storage participant* tests with immediate recall, refer to Market Manual 7.3: Outage Management, Section 4.1.2.

permitted. Therefore, when offering *operating reserve*, an *electricity storage facility* must offer exclusively as either an injecting *electricity storage unit* or a withdrawing *electricity storage unit* (MR Ch. 7, Sec. 21.7).

In accordance with MR*,* Ch. *5,* App 5.1, Sec. 1.2.3, for a given *dispatch hour*, when activated, all *registered facilities* providing *operating reserve*, must be able to provide the required service for at least one hour. Given this one-hour requirement to sustain *operating reserve*, *registered facilities* may be required to provide *operating reserve* into the subsequent *dispatch hour* depending on time of activation within the applicable *dispatch hour*. As such, when submitting *dispatch data* to provide *operating reserve*, the following requirements apply:

When the *electricity storage facility* is offering *operating reserve* exclusively from the injecting component of an *electricity storage unit (MR* Ch.7, Sec. 21.7) the *remaining duration of service* until the *facility* is depleted of *energy* must be greater than or equal to 130 minutes at the end of the mandatory window (i.e., minute 50) for the applicable *dispatch hour*.

- The 130-minute requirement enables the unit when activated in minute 59 of the *dispatch hour* to have adequate *remaining duration of servic*e to provide energy for *operating reserve* for the next *dispatch hour*. The 130 minutes covers: the remaining 10 minutes of the mandatory window, the *dispatch hour* in which the *facility* was scheduled and activated to provide *operating reserve,* and the following *dispatch hour* in which the *facility* must provide *energy* due to the one hour *operating reserve* activation requirement explained above.

When the *electricity storage facility* is offering to provide *operating reserve* exclusively from the withdrawing component of the *electricity storage unit (MR* Ch.7, Sec. 21.7) the *remaining duration of service* to full *state of charge* is greater than or equal to 70 minutes at the end of the mandatory window (i.e., minute 50) for the applicable *dispatch hour*.

- The 70-minute requirement enables the unit, when activated in minute 59 of the *dispatch hour,* to have sufficient *remaining duration of service* to provide loading relief for *operating reserve* for the next dispatch hour. The 70 minutes covers: the remaining 10 minutes of the mandatory window and the *dispatch hour* in which the *facility* was scheduled and activated to provide *operating reserve*.

See Appendix A.3 for further details, examples, and rationale for electricity storage *dispatch data* requirements.

2.4.4 Energy Schedules and Forecasts

A *registered market participan*t must submit the following *dispatch data* for each *self-scheduling generation facility*, *self-scheduling electricity storage facility*, *transitional scheduling generator*, and *intermittent generator* that it has registered with the *IESO* detailing (*MR* Ch. 7, Sec. 3.7, 3.8, and 3.8A) either:

- The amount of *energy* (in MWh) that it reasonably expects to be provided by the *self-scheduling generation facility* or *self-scheduling electricity storage 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*, or
- The total installed capacity of the *variable generation,* net any derates or *outages* that have been submitted through the outage process, 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 zero[10] (*MR* Ch. 7, Sec. 3.4.4A).

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

2.4.5 Standing Dispatch Data

In addition to the items noted above for *energy offer*s and *bids* and *operating reserve offer*s, 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 (*MR* Ch. 7, Sec. 3.3.9).

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

2.5 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 reser*ve 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 participan*t 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 Canada Energy Regulator[11] export authorization (*MR* Ch. 7, Sec. 2.2.7).

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 *offer*s received from a *market participant* against this initial registration information (or any subsequent updates). Refer to Market Manual 1.5: Market Registration Procedures.

2.5.1 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.

[10] This price may not be less than negative MMCP. A price must be provided, otherwise *dispatch data* will be rejected.

[11] For more information please visit the Canada Energy Regulator web page.

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 *offer*s 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 area*s. Appendix E lists the available *boundary entity* resources that should be used when submitting *bids* and *offer*s 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 E 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* 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.

All *capacity import resources* must be offered on the designated *boundary entity* associated with the *control area* for which the *capacity import resource* originates.

Due to scheduling restrictions[12] 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.

2.5.2 Ramp Rates

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

[12] 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.

2.5.3 e-Tagging

An e-Tag ID[13] must be submitted with each *bid* or *offer* and the e-Tag must be submitted through the e-tagging system in accordance with *NERC* reliability standards (*MR* Ch. 7, App. 7.1, Sec. 1.2.11). Operation in segregated mode with Hydro Quebec also requires submission of e-Tags in accordance with *IESO* requirements.

System backed capacity imports will be required to include the letters "SCAP" in between the Balancing Authority identification.

Appendix F comprises some Ontario specific requirements for e-Tags.

*e-Tag*s must be submitted at least 32 minutes[14] prior to *dispatch hour*. However, *market participants* are encouraged to submit 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 *offer*s 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 e-Tag replacement within the 2 hour window prior to dispatch without *IESO* approval. Refer to Market Manual 4.3: Real-Time Scheduling of the Physical Markets for more information on the e-Tag submission process.

Normally*, registered market participants* submitting *dispatch data* associated with a *boundary entity* are required to submit all *offers* or *bids* by two hours prior to the *dispatch hour* through EMI (**Energy Market Interface)**.

Market participants, however, may make short notice changes, if necessary, to the *e-Tag* ID via EMI up to 32 minutes prior to dispatch hour as specified in Appendix B.2.3.

Furthermore, *market participants* are required to submit the e-Tag(s) corresponding to the above *dispatch data* (same e-Tag ID) and scheduled MW quantity[15] (*dispatch* instruction) to the e-Tag system at least 32 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 *di*spatch hour. Should the pre-dispatch short report fail or run late, the *IES*O will allow comparable latitude with the IESO's 32-minute e-Tag submission timeline. However, in such situations the *IESO* encourages the *market participants* to submit the e-Tag 32 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 11, *market participants* shall not update their e-Tag MW schedule according to the *IESO pre-dispatch schedule* short report. To ensure that any required e-Tag MW schedule changes are not

[13] The Transaction ID is not the tag itself rather the unique ID # that will be used when an e-Tag is submitted through the e-Tag system.

[14] *Market Participants* are responsible for submitting or adjusting impacted *e-Tag*s 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.

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

rejected by the NYISO, the sink *control area* will make these adjustments on behalf of *market participants*.

Missing or late *e-Tag*s 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**[16] with the following reason: missing *e-Tag*. If an *e-Tag* is:

- Submitted late,
- Has incorrect data (MW quantity does not match *dispatch instruction*), or
- Has yet to be submitted after 32 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 reasonable effort basis.[17]

Where required for reliability reasons:

- In the case of a missing or late *e-Tag* (no *e-Tag* corresponding to the *dispatch data* (*e-Tag* ID) or no *e-Tag* submitted by 32 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 e-Tag, submit or enter the corrections into the *e*-Tag system to ensure the *interchange schedule* will flow[18] and notify the *IESO* when complete,
- In the case of a missing *e-Tag* ID, the *IESO* will, provided it is identified by the *market participant*, link the correct *e-Tag*, in the market tools, and
- In the case of incorrect *e-Tag* data (MW quantity does not match *dispatch instruction*, or the *interchange schedule* is curtailed), the *IESO* will adjust the *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):
    - External curtailment (e.g. external *control area* TLR),
    - Internal curtailment, or
    - Scheduling disagreement, and
    - In the case of the MW quantity mismatches, notifications for *e-Tag* MW quantity adjustments made by the *IESO* to match the *dispatch instruction* are automatically issued via the *e*-Tag system with the following reason: *IESO* Market Results.

If, however, the *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

[16] 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 e-Tag adjustments by telephone.

[17] Although the *interchange schedule* may be approved for *reliability* reasons after 32 minutes prior to the *dispatch hour*, it is still deemed a breach of the *market rules* and no CMSC payments will apply.

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

adjusted MW quantity into the e-Tag 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).

2.5.4 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 *e-Tag* ID for the import, where Ontario would be designated in the *e-Tag* as the sink *control area*. The *dispatch data* for the interchange *bid* must be accompanied by a separate *e-Tag* ID for the export, where Ontario would be designated in the *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 adverse 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 *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 *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 e-Tag ID obtained from the *e-Tag* 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 e-Tag ID, but would be included in the 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 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 e-Tag ID submitted to the *IESO* as *dispatch data* for the export.

Appendix F 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 *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 (*MR* Ch. 7, Sec. 3.5.8).

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

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

2.5.5 Validation

Bids and *offer*s 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 *e-Tag* source/sink corresponds with the boundary entity resource, as set out in Appendix E,
- The *e-Tag* is consistent with the tie point identified in the *dispatch data* submission,
- The *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 two hours prior to the *dispatch hour* but will seek to undertake validation on a reasonable 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 failure[19]. 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 participant*s directly of validation failures on a reasonable 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 E. In addition, *market participants* should ensure that they have the appropriate e-Tags within the required timeframe.

2.6 Capacity Exports

Market participants with Ontario-based *generation units* and the injecting component of *electricity storage units* may be eligible to export capacity to designated external *control areas* during specified periods of time, subject to *IESO* pre-approval[19].

When a resource has committed its capacity to an external *control area*, the delivery of the *energy* associated with the committed capacity will be in the form of an energy export to that external *control area*. Capacity exports differ from other energy exports with respect to eligibility requirements (see Market Manual 13.1), real-time *dispatch* data requirements (described below) and real-time scheduling and curtailment (see Market Manual 4.3, Section 6.7: Capacity Export Scheduling and Curtailment).

2.6.1 Dispatch Data Requirements for Scheduling a Called Capacity Export

When the owner of a Capacity Resource has committed capacity from the resource to an external *control area*, it assumes the responsibility of responding to capacity calls by that external *control area*.

[19] Capitalized terms in this section are defined in Market Manual 13.1: Capacity Export Requests, Appendix A: Glossary of Capacity Export Terms. Also, see Market Manual 13.1 for an explanation of capacity export eligibility and approval requirements.

In order to receive export curtailment treatment as a *called capacity export* the Capacity Seller is required to:

- Submit an *energy* export for delivery to the external *control area* for the duration of the capacity call by *bidding* at *MMCP* prior to the closing of the mandatory window for the *dispatch hour*[20], where, in addition to normal export *bidding*, the export *bid* submission must contain the following:
    - B*id* quantity must be in a single lamination and shall not exceed the called export MW quantity,
    - "Other Reason" field must include a six-digit resource ID (format ######) identifying the Capacity Resource that has committed capacity,
    - "Tie Point ID" must be selected in the direction of the calling external *control area*, and
    - "Delivery Date" and "Delivery Hour" shall span the period (between start and end date) of the call as stipulated by the calling jurisdiction
    - "NERC Tag ID" field must include the correct tag naming convention as described below
- Submit an e-Tag which contains "ICAP" in the e-Tag ID number and the registered resource name of the Capacity Resource that is the subject of the capacity call in the Comments section.
- Telephone the *IESO* Control Room and indicate the e-Tag ID number of the export, the Capacity Resource, and the expected duration of the capacity call during which the export is to be treated as a *called capacity export*.

Note: Capacity Resources may still offer *operating reserve* in the *IESO-administered markets*. Capacity Sellers must manage any *operating reserve offers* from their resource for the duration of capacity call to ensure that there is sufficient capacity and *energy* available to supply the energy to support the *called capacity export* and to fully respond to any *operating reserve* activations.

2.6.2 Changes/Updates to Called Capacity Exports or Capacity Resources

The *market participant* must also telephone the *IESO* Control Room:

- If the quantity of energy called changes or if the expected duration of the capacity call changes,
- If the Capacity Resource becomes unavailable at any time throughout the duration of the capacity call, and/or
- When the end time of the capacity call is confirmed to the Capacity Seller by the external *control area*.

[20] External *control areas* will not call on committed capacity after 135 minutes prior to the start of the dispatch hour. This provides *market participants* sufficient time to update their *bids* and *offers*. External *control areas* and *market participants* are also required to respect the mandatory window requirements outlined within this manual, as they pertain to changes/updates to the capacity call (e.g., changes in end times, MW quantities etc.).

2.7 Requests for Segregated Mode of Operation

To operate in *segregated mode of operation (SMO)*, generators must:

- Submit a request to the *IESO* to operate their facility in *SMO*,
- Submit *dispatch data* for their *generation facilities* to allow *dispatch* in Ontario should *SMO* be recalled,
- Submit an *outage* request for the period that the *facility* will operate in *SMO*, and
- Submit *e-Tags* as detailed below.

Generators may submit requests to operate their *generation facilities* in a *segregated mode of operation* on the *pre-dispatch day* and no later than two hours prior to the start of the first *dispatch hour,* unless otherwise agreed by the *IESO* (*MR* Ch. 7, App. 7.7, Sec. 1.3). *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. *SMO* requests submitted before 09:00 will be assessed by the *IESO*. *SMO* requests received after 09:00 and before 10:00 will be assessed on a reasonable effort basis. *Market participants* are required to have *offers* in the Ontario market for their *SMO generation facilities* prior to 10:00 day-ahead.

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

- The start time of the *SMO*,
- The expiry time (duration) of the *SMO*,
- A list of the registered *generation facilities* that are intended to operate in the *SMO*, and
- An hourly schedule.

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

Knowing that *SMO* can be recalled at any time for *reliability*, a *market participant* who intends for a *registered facility* to operate in an *SMO* shall continue to provide *dispatch data* and an *outage* request[21] for that *registered facility* for each *dispatch hour* during which a *registered facility* will or is intended to operate in *SMO*.

When submitting requests for *SMO*, *market participants* will use the *outage* process described in Market Manual 7.3: Outage Management. 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 *SMO* (*MR* Ch. 7, App. 7.7, Sec. 1.3.4).

If the *SMO* request is approved, the IESO shall:

[21] The submission of the *outage* request will fulfill the obligations with respect to the submission of *dispatch data* as set out in *MR* Ch. 7, App. 7.7.

- 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 *SMO* and reconnect the segregated *transmission* and *generation facilities* to the *IESO-controlled grid* at the expiry time, 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 operate in an *SMO*.

The *IESO* may at any time revoke its approval to operate a *registered facility* in an *SMO* (*MR* Ch. 7, App. 7.7, Sec. 1.3.6). In this case, the *IESO* shall notify the relevant *generator* and revoke any direction issued to affect the *SMO* for the relevant *registered facility*.

The *IESO* may at any time terminate the operation of a *registered facility* in an *SMO* (*MR* Ch. 7, App. 7.7, Sec. 1.3.6)*. In this case, the IESO shall:*

- Notify the relevant *generator*,
- Direct the relevant *transmitte*r on the switching of applicable equipment or facilities required to cease implementation of the *SMO*, 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 *SMO*.

2.7.1 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 an *SMO*, the *IESO* will:

- Confirm the *SMO* 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,
- Determine and distinguish on an hourly granularity the inadvertent accumulation in both the *SMO* and non-SMO 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 weekly basis, provide applicable market participants individual *intertie SMO* inadvertent accumulation data regarding hourly, peak, off peak, and daily totals,
- Track total inadvertent accumulation with the neighbouring *control areas*.

Market participants shall be responsible for arranging payback of *SMO* inadvertent accumulation, by scheduling imports/exports from/to the applicable neighbouring *control area* into/out of Ontario, unless otherwise mutually agreed to between the *market participant(s)* and the applicable *control area* operator.

By the sixth (6th) *calendar day* of each month, *market participants* shall report to the *IESO* the quantities of inadvertent accumulation paid back so that the *IESO* may maintain an accurate and up-to-date running balance.

2.8 Publication of Pre-dispatch Schedules

The *IESO* must determine, *publish* and release *pre-dispatch schedule*s 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 hour*s of each *dispatch day* no later than 16:00 EST on the pre-*dispatch day* (*MR* Ch. 7, Sec. 5.5). Valid *dispatch data* provided by *market participants* are used to help determine the *pre-dispatch schedule*. Appendix D 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*, *self-scheduling electricity storage facilities, transitional scheduling generators,* and *intermittent generators*, are used by the *IESO* to develop its own forecast of intermittent generation, self-scheduled generation, and self-scheduled energy storage injections to be used in the pre-dispatch process. For *variable generation*, the *IESO* uses forecasts provided by a *forecasting entity*[22].The pre-dispatch process then optimizes the *energy* and *operating reserve* recognizing projected constraints on the *IESO-controlled grid* and *interties*. 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 near term *security* and *adequacy* assessments provided up to day 34. The assessments are located in the Adequacy Report, Transmission Facility All in Service Limits Report, and the Transmission Facility Outage Limits Report.
- Since *bids* and *offers* can be changed without limits up to two hours prior to the *dispatch* hour, *pre-dispatch* schedules will be more stable as the *dispatc*h hour approaches. Pre-*dispatch s*chedules 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 (*MR* Ch. 7, Sec. 3.3.12):

[22] At the discretion of the *IESO,* we may manually adjust the *variable generation* forecast provided by the *forecasting entity* to account for conditions such as, but not limited to, actual weather that differs from forecast weather.

- Sending out an advisory notice 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), and/or
- Sending out directives requesting *offers/bids* to relieve local area inadequacies (MW or MVAR), directives would be targeted specifically to relevant *generators/loads/electricity storage facilities* in the areas expected to experience local area inadequacies (*MR* Ch. *7, Sec.* 3.3.13, 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).

– End of Section –

Appendix A: 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.

A.1 Bid/Offer Data Requirements

Refer to the "Energy Market Graphical User Interface User's 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 website (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* & *bid*s,
- *OR offers* (including imports),
- Standing *operating reserve offers* & *bids*,
- *Energy market* schedules (for self-scheduling *generation facilities*, *self-scheduling electricity storage facilities*, transitional scheduling *generators*, and intermittent *generators*),
- Total installed capacity net *outages* and derates (for variable generation) and
- *Bids* to reduce *energy* withdrawals.

A.2 Schedules and Forecasts

Refer to the "Energy Market Graphical User Interface 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 website (www.ieso.ca).

A.3 Schedules and Forecasts

The *bid/offer* and *state of charge/remaining duration of service* requirements outlined in Section 2.4 of this *market manual* for *electricity storage participant* participation in the *energy market* and *operating reserve markets* are applied as a safeguarding *reliability* measures, and to help *electricity storage participants* comply with *dispatch instructions*.

The example below illustrates an *electricity storage facility's* operating scenario. In *dispatch hours* 1, 2 and 3, the *facility* has an *offer* in the *energy market*, and in hours 1, 4 and 5 the *facility* has a *bid* in the *energy market*. In this example below, suppose that the unit proposing to inject is activated for *operating reserve* in the last *dispatch interval* of the second *dispatch hour*. As per the MR, Ch 5, Appendix 5.1, Sec. 1.2, the *facility* is required to meet its obligation of having the capability to inject *energy* for at least one hour when activated for *operating reserve*. To meet this obligation, the *facility* must also act as a dispatchable injecting *electricity storage unit* in the third *dispatch hour*.

The *facility* cannot have a *bid* in the *energy market* in the third *dispatch hour* because it cannot simultaneously follow an injecting *electricity storage unit dispatch* and a withdrawing *electricity storage unit dispatch* in the third *dispatch hour*.

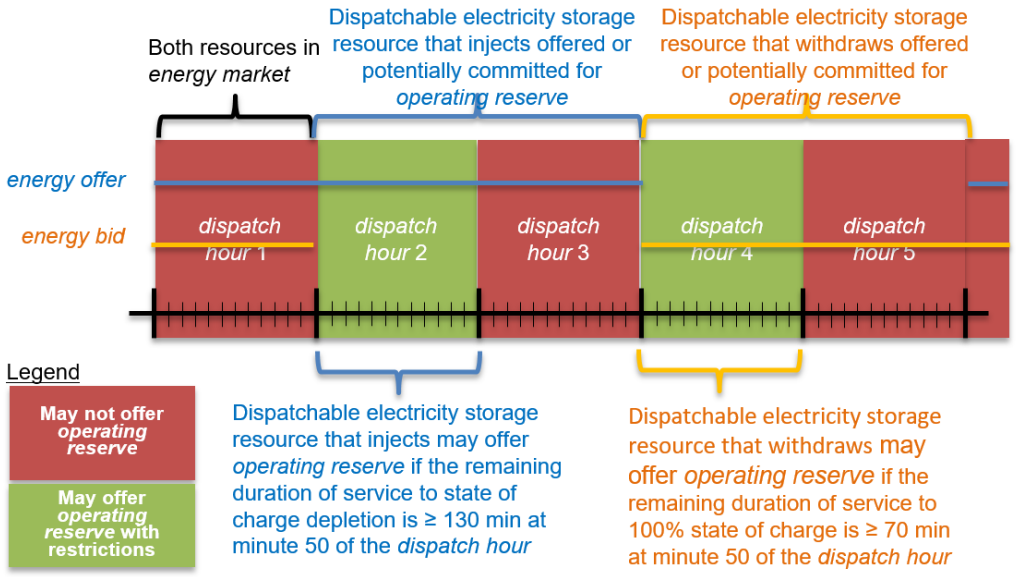

Figure A-1 - Electricity Storage Dispatch Data Example

A.3.1 Examples – Minimum duration of service requirements explained

Rationale for the 130-minute minimum duration of service requirement for the injecting resource:

Electricity storage participants proposing to *offer operating reserve* must submit their *offers* such that that there is at least 130 minutes of duration prior to the closing of the mandatory (i.e., the cut-off) window when providing *operating reserve*. This accounts for:

- The duration between the mandatory cut-off and the *dispatch hour* (10 minutes);
- The possibility that the *electricity storage unit* could be called to provide OR as late as minute 59 of the *dispatch hour* (60 minutes), and;
- The subsequent obligation to provide *energy* for one hour after being activated (60 minutes).

Note, changes to *operating reserve offers* within the mandatory window are only permitted as a result of *state of charge* related submission and revisions in accordance with section 2.4.3 of this *market manual*; otherwise changes must be done outside of the mandatory window.

Rationale for the 70 minutes minimum duration of service requirement for the withdrawing resource:

Electricity storage participants proposing to *offer operating reserve* must submit their *offers* such that there is at least 70 minutes of duration prior to the closing of the mandatory window when providing *operating reserve*. This accounts for:

- The duration between the mandatory cut-off and the *dispatch hour* (10 minutes); and,
- The possibility that the *electricity storage unit* could be called to provide OR as late as minute 59 of the *dispatch hour* (60 minutes).

Note, changes to OR *offers* within the mandatory window are only permitted as a result of *state of charge* related submission and revisions in accordance with Section 2.4.3 of this *market manual*; otherwise changes must be done outside of the mandatory window.

– End of Section –

Appendix B: Short Notice Change Criteria

B.1 Introduction

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

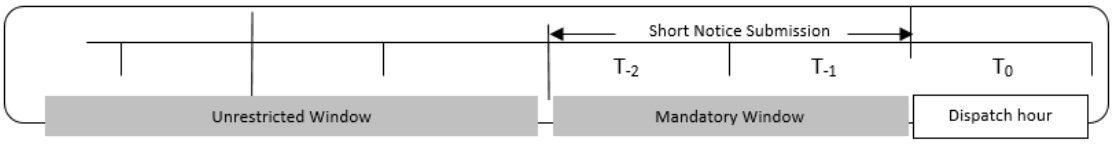

Figure B-1: Short Notice Submission Window

All new and revised dispatch data submitted within two 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 B.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 urgent 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,* or *electricity storage facility* to prevent violation of any *applicable law*, endangering the safety of any person, or damage to property or the environment,
    - Due to the prevailing *state of charge* and *remaining duration of service*, the *electricity storage participant* recognizes that the quantity scheduled differs

from the quantity the *electricity storage participant* reasonably expects to inject or withdraw by more than the greater of 2% or 10 MW,

- Due to the prevailing *state of charge* and *remaining duration of service,* in accordance with Section 2.4.3 of this *market manual,* the *electricity storage participant* must update *operating reserve offers*,
- The *market participant* recognizes that the quantity of any p*hysical 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,
- Is associated with an *HDR* resource,
- 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 *offer*s or decreases *bids* of *energy*,
- A System Advisory for over-generation (i.e., a Minimum Generation Alert or Event)[23] has been issued, and the new or revised *dispatch data* decreases *offer*s 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 *offer*s of *operating reserve*.

B.2 Submission Criteria

B.2.1 Intentionally Left Blank

B.2.2 Mandatory Window Submission

The mandatory window is the period less than two 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 review[24]. *Electricity storage participants* revising *dispatch data* within the mandatory window for *state of charge* related reasons must include the term "SOC" in their reason for

[23] Refer to Market Manual 7.2: Near Term Assessments and Reports, section 4.3 for information regarding Minimum Generation states.

[24] See the Energy Market Graphical User Interface User's Guide for detailed descriptions of the standard reasons for change that are available.

change. All *state of charge* related revisions can only be reductions in quantity and must be submitted prior to the closing of the mandatory window.

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 d*ispatchable 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.

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*.

B.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 B.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, Section 7.3: Boundary Entities).

By two hours prior to the dispatch hour, *market participants* must submit new *dispatch data* to reflect the correct e-Tag IDs; failure to do so will be treated as a breach of the market rules

Market participants may submit revisions to e-Tag IDs up to 32 minutes prior to the start of the dispatch hour, i.e. prior to the opening of the e-Tag ID mandatory window, for automatic acceptance. The e-Tag ID mandatory window is the period less than 32 minutes 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 the e-Tag ID in the e-Tag ID mandatory window. 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 review. The *IESO* will manually review the submitted e-Tag ID and associated reason(s) before approval to accept the change.

The *IESO* may initiate a direct conversation with the *market participant* to clarify the reason(s) provided.

For clarity, if boundary entities submit changes to dispatch data and e-Tag ID for approval more than 1 hour prior to dispatch hour, outside of the e-Tag ID mandatory window, then changes to dispatch data require approval from the IESO, and changes to e-Tag ID are automatically accepted without IESO approval.

B.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 EEA2[25] (*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).*

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

Note: The bidding window will still remain closed for any changes to an *intertie scheduling limit* or to an operating *security limit.*

All other changes submitted by *market participants* in the mandatory window, if opened, will only be approved by the *IESO* in accordance with *MR* Ch 7. Sections 3.3.6 and 21.6, where the revision relates solely to generating injecting, or withdrawing (insofar as an *electricity storage facility* is concerned) 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."

B.3 Summary of Allowable Dispatch Data Changes

Table B-1: Summary of Allowable Dispatch Data Changes

Reason for Bid/Offer Change	Changes Allowed		
	2 hours+	**2-0 Hours**	**Market Rule Reference**
Market-based changes	Unrestricted changes to *dispatch data* except where *reliability* issue identified in *pre-dispatch schedule*	None	Chapter 7 Section 3.3.3, 3.3.10
Forced outages or urgent outages, *generation unit* or *dispatchable load or electricity storage unit* limitations: > the greater of 2% or 10 MW		*Offers* do not need to be revised as long as an *outage* request is entered into the *outage* management system to reflect actual capability as long as derating does not last more than two hours.[26]	Chapter 7 Section 3.3.8
		Bids need to be revised to: ○ reflect what the *dispatchable load* reasonably expects to withdraw, ○ indicate if their status changes to or from being dispatchable[27], and ○ identify when *operating reserve* capability is restored following the *outage*.	
HDR resources		Reflect what the HDR resource reasonably expects to withdraw.	

[26] *Electricity storage participants* should not use *outage requests* to signal *state of charge* capability revisions – rather they should use the provisions set forth in this table.

[27] 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 B.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
Electricity Storage Participants revisions for *state of charge* changes that exceed the greater of 2% or 10 MW		For *state of charge* related revisions, o*ffers* and *bids* setting out the quantity that the *electricity storage participant* reasonably expects to inject and withdraw needs to be revised prior to the closing of the mandatory window. Note: only quantity reductions are permitted.	Chapter 7 Section 21.6
• Personnel/Public Safety • Property Damage • Legal requirement • Environmental *Regulation*		Quantity and price changes to reflect actual capability	Chapter 7 Section 3.3.6
*Offer*s/*bids* created or revised in *response* to a System Advisory issued by the *IESO* for under-generation		Increased quantities in existing *energy offer*s (*generators*, *wholesale sellers* and *electricity storage participants*) Decreased quantities in existing load *bids* (*dispatchable loads,* and *electricity storage participants*) New *offer*s from *generators* and *electricity storage participants*.	Chapter 7 Section 12.2
*Offer*s/*bids* created or revised in *response* to a System Advisory issued by the *IESO* for over-generation		Decreased quantities in existing *energy offer*s (*generators*, *wholesale sellers,* and *electricity storage participants*) Increased quantities in existing load *bids* (*dispatchable loads* and *electricity storage participants*) New *bids* from *dispatchable loads* and *electricity storage participants*.	Chapter 7 Section 12.2
*Offer*s created or revised in *response* to a System Advisory issued by the *IESO* for an *operating reserve* shortfall		Increased quantities in existing *operating rese*rve *offer*s New *operating rese*rve *offer*s	Chapter 7 Section 12.2

Reason for Bid/Offer Change	Changes Allowed		
	2 hours+	2-0 Hours	Market Rule Reference
When *IESO* has directed a *market participant* to *bid*/*offer* for *reliability* reasons identified in *pre-dispatch schedule* (includes High-Risk Operating Conditions).		Increased quantities in existing *offer*s New *offer*s	Chapter 7 Section 3.3.13
When *IESO* has directed a *market participant* to *bid*/*offer* under terms of a *Reliability Must Run Contract*.		Increased quantities in existing *offer*s New *offer*s	Chapter 5 Section 4.8
Where *IESO* refuses a request for *Segregated Mode of Operation*		Increased quantities in existing *offer*s New *offer*s	Appendix 7.7 Section 1.2
Where *IESO* refuses request by generator or *electricity storage participant* for de-synchronization from the *IESO-controlled grid*		Increased quantities in existing *offer*s New *offer*s	Chapter 7 Section 11.2.3
Interchange schedule – Quantity Changes		Quantity reductions allowed up to 60 minutes prior to the dispatch hour, due to external *control area* schedules	
Interchange schedule – e-Tag ID changes		e-Tag identification changes allowed up to 32 minutes prior to the *dispatch hour*	
Where *IESO* directs the Ancillary Services Provider to change the *regulation* requirements with less than 5 hours notice		Increased quantities in existing *offer*s New *offer*s	
Where the *Ancillary Services Provider* must change the *regulation* requirements due to a forced outage or urgent outage or a de-rating to its equipment.		Increased quantities in existing *offer*s New *offer*s	
Where the market participant submits a replacement energy offer due to a forced outage or urgent outage		Revised dispatch data for a related generation facility	Chapter 7 Section 3.3

– End of Section –

Appendix C: Contingency Plan

C.1 Triggering Events

This appendix contains information on the *IESO*'s contingency plan for operating the real-time *energy* and *operating reser*ve 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.

C.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*/*offer*s, default *bids*/*offer*s, or zero *bids*/*offer*s (which attract MCP).

The *IESO* will do its best to accept *bids*/*offer*s 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. (Refer to Market Manual 4.5: Market Suspension and Resumption for more details on this process.)

C.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*/*offer*s 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 *offer*s on behalf and on the instruction of the *market participants*. The following alternatives are available:

- Email 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 five *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.

C.3.1 Email 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*/*offer*s 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 "Energy Market Graphical User Interface User's Guide".

The format requirements for the bidding files are published in Market Manual 6: Participant Technical Reference Manual, section 5.1.2. 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*.

C.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 awaiting restoration of service.

For a c*ontingency event* affecting **Market System** tools, the *IESO* may:

- 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 in the unrestricted window if ***Market System*** tools return to service),
- Suspend the *market*[28] and instruct *market participants* to remain at the last *dispatch* instruction at hour 2, i*f* ***Market System*** tools have not returned*,*
- *Approve revisions to dispatch data as per the Short Notice Change Criteria in* Appendix B *, 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 –

[28] *Administrative pricing* may apply. Refer to Market Manual 4.3, Section 9: Administrative Pricing.

Appendix D: Pre-dispatch Schedule Production and Publication

D.1 Overview

Pre-dispatch is one of a series of activities that the *IESO* undertakes to assess the *reliability* of the *IESO-controlled grid*. The pre-dispatch scheduling process occurs each hour for the remaining hours of today and for all hours of tomorrow at a certain point mid-afternoon on any trade date. It is preceded by a number of *IESO* processes that also assess *reliability,* including the Reliability Outlook and the Day Ahead Commitment Process. Pre-dispatch is followed by the IESO's real-time scheduling process.

Reliability assessments are performed using the output of the pre-dispatch scheduling algorithms. However, *security* and *adequacy* for any trade date will have been assessed many times by various longer-term *IESO* processes (with increasing granularity) in advance of the first pre-dispatch run for any day. Consequently, pre-dispatch assessments focus upon the impact of new and/or changed information relative to the previous assessments.

In the *pre-dispatch* process, the *IESO* uses a number of inputs including an hourly Ontario demand forecast and market participant supply offers (e.g. generation/injections and imports) and demand *bids* (e.g. dispatchable load, demand response, *electricity storage facilities* and exports) to calculate an optimized energy and operating reserve dispatch. Like the adequacy reports, *pre-dispatch* looks at adequacy in each hour. However, pre-dispatch uses *market participant offers* and *bids* as well as the effects of parallel path flows on tie-line capacity that are not available for other reports[29].

Specifically, 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 Ramp Hours[30] 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*.

Real-time dispatch uses a load predictor to prepare automatically[31] prepare an Ontario demand forecast for the next five minutes based on previous Ontario 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

[29] The Adequacy Report and Transmission Facility Limit Reports use items such as *generation capacity,* tie-line capacity and *outage*s (including their impact on tie-line capacity) to assess *adequacy* of resources to meet forecast Ontario *demand*.

[30] *IESO* Ramp Hours are defined as any hour in which the peak demand forecast exceeds the average demand forecast by at least 300 MW.

[31] At the discretion of the *IESO,* we may manually adjust the Ontario *demand* forecast to account for limitations of our automated load predictor to accurately forecast expected load profiles.

schedules are not implemented. The output of the real-time schedule dispatches Ontario resources for the next five 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 participan*t 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 *security* and *adequacy* assessments, Pre-dispatch and Dispatch processes are summarized in Figure D-1, overleaf.

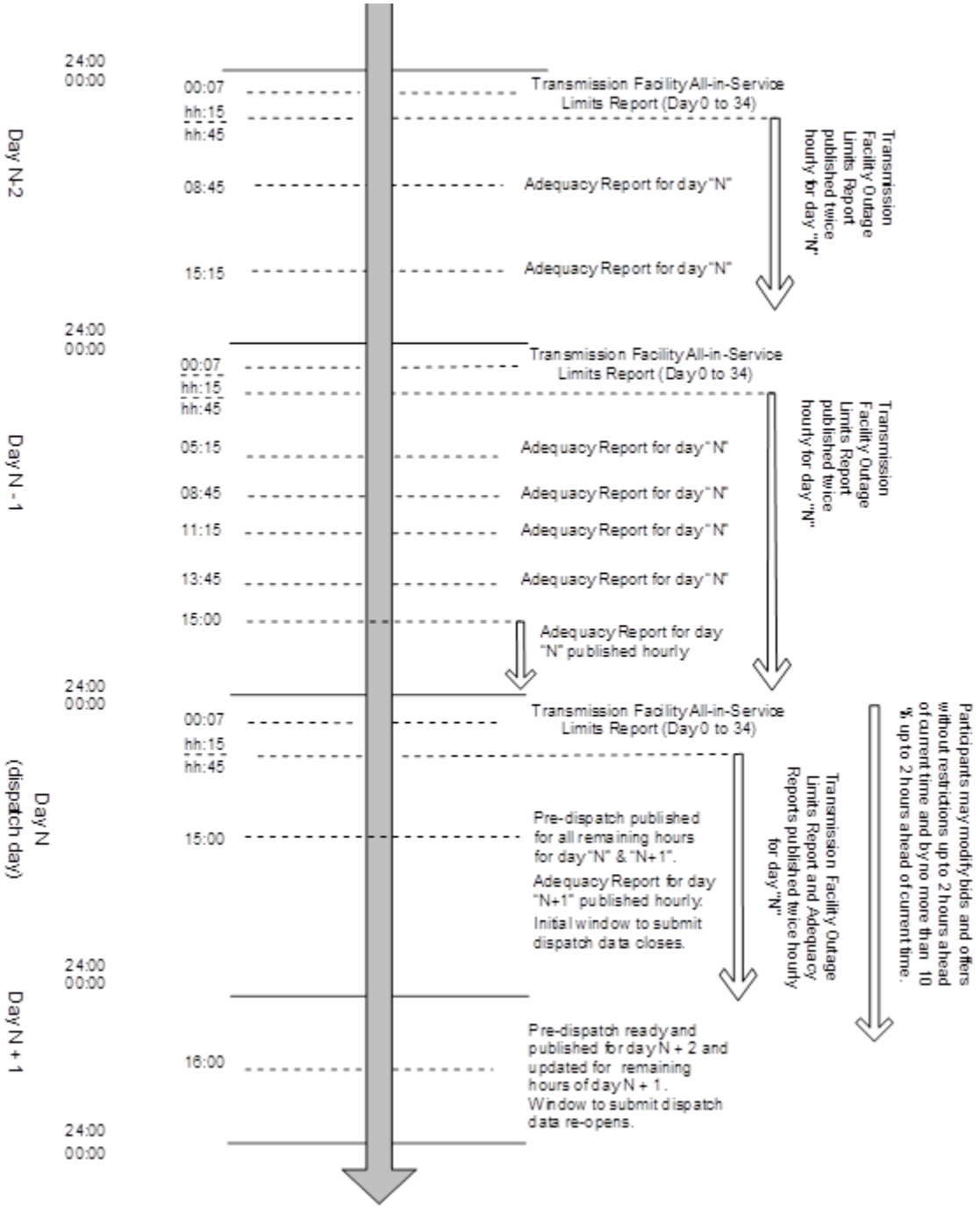

Figure D-1: Adequacy Report, Transmission Limits Report, Pre-dispatch and Dispatch Process Coordination Timing Chart

D.2 Time-line Definition for Pre-dispatch

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

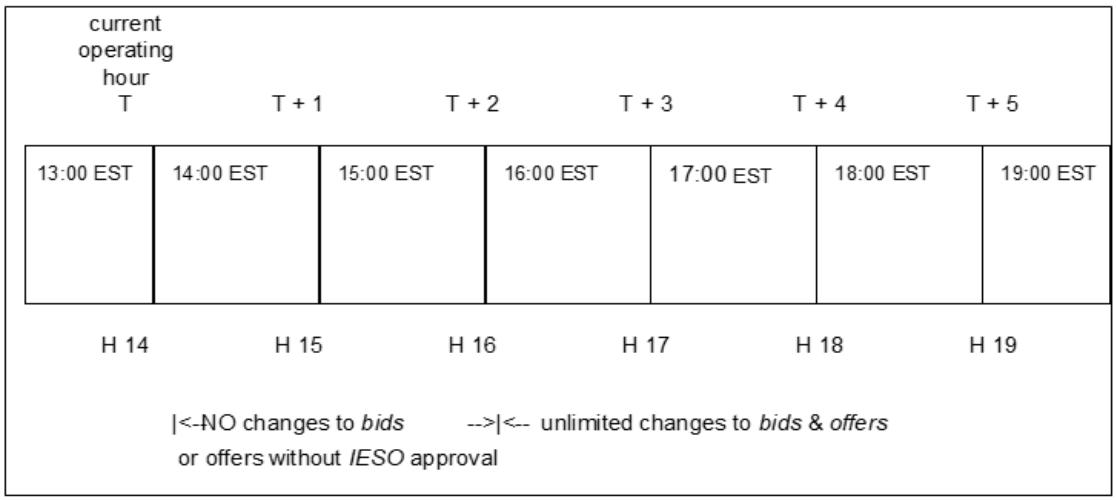

Figure D-2: Sample time-line for pre-dispatch

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) = (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) = (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 schedule*s are calculated for the remaining hours of the current day (including the current hour) based on the *offer*s 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 *offer*s/*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*/*offer*s 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 use the results of the previous pre-dispatch run 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 schedule*s for the entire 24-hour period of the next *dispatch day* are calculated for the first time. At the same time, the *pre-dispatch schedule*s 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 *offer*s 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 or* urgent 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* urgent outages *or early returns to service of equipment.*

During the time preceding the 'first mode' run of the pre-dispatch in hour H16, 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.

D.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 assessments:

- *P*ower system configuration,
- *Operating Security Limits (OSLs),*
- Area reserve control actions,
- Transmission Loading Relief (TLR) / Lake Erie Emergency Re-dispatch (LEER),
- I*nterchange schedules*,
- A*ncillary services*,
- Voltage, and

- R*egulation.*

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

- The pre-dispatch output is not the first assessment of *security* and *adequacy* for a trade date. Assessments will have been made a number of times for a dispatch hour or day before the first pre-dispatch runs are prepared. Consequently, the assessments for pre-dispatch benefit from the information gathered in previous assessments including the Day Ahead Commitment Process and *security* and *adequacy* assessments. Since bids and offers can be changed without limit up to two hours prior to the dispatch hour, pre-dispatch schedules will be more stable as the dispatch hour approaches, pre-dispatch schedules for 3+ 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* and *adequacy* concerns are identified, the *IESO* will undertake remedial action that may include (but is not limited to) the following:

- Sending out an advisory notice requesting *offers/bids* to relieve *local are*a 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 *IESO*, but probably within 12 hours of the *dispatch* hour), or
- Modifying one of more of the following *pre-dispatch* inputs prior to the next *pre-dispatch* run:
    - Changing selected *regulation*, based on the pre-dispatch *security* and *adequacy* assessment, the *IESO* will review available *regulation* resources, select *regulation* contracts that provide *regulation* in the correct location, and de-activate *regulation* contracts, as necessary,
    - Changing the selected Net Interchange Scheduling Limit (NISL) value, based on the pre-dispatch *security* and *adequacy* assessment, the *IESO* will increase the NISL value if this action is likely to provide assistance. After system *security* and *adequacy* are restored, the NISL value will be set back to its default value,
    - 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 *intertie* circuit loading,
    - Considering the cancellation or rescheduling of *outage*s that have not yet started or the recall of *outage*s already in progress[32],
    - Considering the selection of alternative OSLs where the *outage* assumptions are altered and implementing correct OSLs 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.

[32] Cancellation, rescheduling or recall of *outage*s is detailed in the Market Manual 7.3*:* Outage Management*.* However, the *IESO* will be guided by outage priority and aim to allow as many *outage*s to proceed as possible.

D.3.1 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 data[33] 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.

D.3.2 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 forecast, produced by the *forecasting entity*, for the *energy* expected to be provided by that *registered facility*, which is a *variable generation facility,* in each hour over the next 48 hours,
- 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*

D.3.3 Data Released to All Market Participants

The *IESO* shall release to all *market participant*s 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 c*onstraints that affect the *pre-dispatch schedule,*
- The most current *security* and *adequacy* assessment,
- the projected uniform *market prices* of *energy a*nd *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.*

[33] Confidentiality is usually ensured by:
- Removing individual names, prices, and similar information, and
- Aggregating information in order to avoid identification.

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

- 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 E: Boundary Entity Resources

E.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.

E.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*.)

Table E-1: Boundary Entity Resources

Intertie	MSP[34] Name	Boundary Entity resource Name	# of BER Resources	Description
Manitoba 115 kV	MBSK	MB.SEVENSISTERS.SINK	2	Export via *IESO*/Manitoba 115kV *intertie*

[34] MSP - Market scheduling point or "tie point".

Intertie	MSP[34] Name	Boundary Entity resource Name	# of BER Resources	Description
		MB.SEVENSISTERS.SOURCE	2	Import via *IESO*/Manitoba 115kV *intertie*
Manitoba 230 kV	MBSI	MB.WHITESHELL.CAN.SINK	15	Export to Canada via *IESO*/Manitoba 230kV *intertie*
		MB.WHITESHELL.SOURCE.SBACK	1	System-Backed Capacity Import Resources via IESO/Manitoba 230kV *intertie*
		MB.WHITESHELL.CAN.SOURCE	15	Import via *IESO*/Manitoba 230kV *intertie*
		MB.WHITESHELL.US.SINK	5	Export to US via *IESO*/Manitoba 230kV *intertie*
Michigan	MISI	MI.LUDINGTON.SINK	50	Export to US (except PJM) via *IESO*/Michigan *intertie*
		MI.LUDINGTON.SOURCE	50	Import via *IESO*/Michigan *intertie* from the US (except PJM)
		WC.PRAIRERANGES.SINK	5	Export to Canada via *IESO*/Michigan *intertie*
		MD.CALVERTCLIFF.SINK	40	Export to PJM via *IESO*/Michigan *intertie*
		MD.CALVERTCLIFF.SOURCE	40	Import via *IESO*/Michigan *intertie* from PJM
Minnesota	MNSI	MN.INTFALLS.US.SINK	10	Export to US via *IESO*/Minnesota *intertie*
		MN.INTFALLS.US.SOURCE	10	Import via *IESO*/Minnesota *intertie*
		MN.INTFALLS.CAN.SINK	5	Export to Canada via *IESO*/Minnesota *intertie*
New York	NYSI	NY.ROSETON.SINK	50	Export to US (except PJM) via *IESO*/NYISO *intertie*
		NY.ROSETON.SOURCE	50	Import via *IESO*/NYISO *intertie* from the US (except PJM)
		EC.MARITIMES.SINK	2	Export to Canada via *IESO*/NYISO *intertie*
		MD.CALVERTCLIFF.SINK	40	Export to PJM via *IESO*/NYISO *intertie*
		MD.CALVERTCLIFF.SOURCE	40	Import via *IESO*/NYISO *intertie* from PJM

Intertie	MSP[34] Name	Boundary Entity resource Name	# of BER Resources	Description
Quebec B5D/B31L[35]	PQBE	PQ.BEAUHARNOIS.SOURCE	20	Import via *IESO*/Quebec *intertie* B5D/B31L
Quebec X2Y	PQXY	PQ.BRYSON.SINK	5	Export via *IESO*/Quebec *intertie* X2Y
		PQ.BRYSON.SOURCE	5	Import via *IESO*/Quebec *intertie* X2Y
Quebec H4Z	PQHZ	PQ.KIPAWA.SINK	5	Export via *IESO*/Quebec *intertie* H4Z
		PQ.KIPAWA.SOURCE	5	Import via *IESO*/Quebec *intertie* H4Z
Quebec D5A	PQDA	PQ.MACLAREN.SINK	5	Export via *IESO*/Quebec *intertie* D5A
		PQ.MACLAREN.SOURCE	5	Import via *IESO*/Quebec *intertie* D5A
Quebec H9A	PQHA	PQ.MASSON.SINK	5	Export via *IESO*/Quebec *intertie* H9A
		PQ.MASSON.SOURCE	5	Import via *IESO*/Quebec *intertie* H9A
Quebec P33C	PQPC	PQ.PAUGAN.SINK	5	Export via *IESO*/Quebec *intertie* P33C
		PQ.PAUGAN.SOURCE	5	Import via *IESO*/Quebec *intertie* P33C
Quebec Q4C	PQQC	PQ.QUYON.SOURCE	5	Import via *IESO*/Quebec *intertie* Q4C
Quebec D4Z	PQDZ	PQ.RAPIDDESISLE.SINK	5	Export via *IESO*/Quebec *intertie* D4Z
		PQ.RAPIDDESISLE.SOURCE	5	Import via *IESO*/Quebec *intertie* D4Z
Quebec A41T/A42T	PQAT	PQ.OUTAOUAIS.SINK	20	Export via *IESO*/Quebec *intertie* A41T/A42T
		PQ.OUTAOUAIS.SOURCE.SBACK	1	System-Backed Capacity Import Resources via IESO/Quebec *intertie* A41T/A42T
		PQ.OUTAOUAIS.SOURCE	20	Import via *IESO*/Quebec *intertie* A41T/A42T
		PQ.OUTAOUAIS.US.SINK	20	Export to US via *IESO*/Quebec *intertie* A41T/A42T

– End of Section –

[35] 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.

Appendix F: Ontario Specific e-Tag Requirements

F.1 Specific requirements for e-Tag

The following requirements are associated with the Physical Path section of the e-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. Table F-1 lists the proper PORs and PODs.

  Note: POD/POR information is available on the OATI webRegistry (login required).

Table F-1: Interface PORs and PODs

Interface		Imports (POR)	Exports (POD)
Manitoba	MBSI	ONT.IMPORT.WHITSHELL.PS	ONT.EXPORT.WHITSHELL.PS
Michigan	MISI	ONT.IMPORT.MECS.PS	ONT.EXPORT.MECS.PS
Minnesota	MNSI	ONT.IMPORT.INTFALLS.PS	ONT.EXPORT.INTFALLS.PS
New York	NYSI	ONT.IMPORT.NYIS.PS	ONT.EXPORT.NYIS.PS
Outaouais	PQAT	ONT.IMPORT.AT	ONT.EXPORT.AT

Interface		Imports (POR)	Exports (POD)
Beauharnois	PQBE	ONT.IMPORT.LAW	ONT.EXPORT.LAW
D5A	PQDA	ONT.IMPORT.D5A	ONT.EXPORT.D5A
D4Z	PQDZ	ONT.IMPORT.D4Z	ONT.EXPORT.D4Z
H9A	PQHA	ONT.IMPORT.H9A	ONT.EXPORT.H9A
H4Z	PQHZ	ONT.IMPORT.H4Z	ONT.EXPORT.H4Z
P33C	PQPC	ONT.IMPORT.P33C	N/A
Q4C	PQQC	N/A	ONT.EXPORT.Q4C
X2Y	PQXY	ONT.IMPORT.X2Y	ONT.EXPORT.X2Y

Examples:

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

(1) For a wheel tag from HQ/PQAT through ONT to Michigan, both ONT.IMPORT.AT and ONT.EXPORT.MECS.PS would appear on the path.

SE Column

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

F.2 Examples of *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 *e-Tag* IDs would indicate a linked wheeling through *interchange schedule*:

- WI_GGGG_**ONT**MM1234567_LLLL, and
- WX_GGGG_**ONT**MM1234567_LLLL.

Example 2

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

For example, a linked wheel through interchange schedule from Michigan to New York through Quebec must be tagged MECS-ONT-HQT[36]

Where:

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

An additional *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 *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 –

[36] 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
PRO-408	Market Manual 1.5: Market Registration Procedures
MDP_PRO_0022	Market Manual 2.6: Treatment of Compliance Issues
MDP_PRO_0024	Market Manual 2.8: Reliability Assessments Information Requirements
IMP_PRO_0024	Market Manual 2.11: Reliability Outlook and Related Information Requirements
MDP_PRO_0030	Market Manual 4.5: Market Suspension and Resumption
MDP_PRO_0033	Market Manual 5.5: Physical Markets Settlement Statements
IMO_MAN_0024	Market Manual 6: Participant Technical Reference Manual
MDP_PRO_0040	Market Manual 7.1: IESO-Controlled Grid Operating Procedures
IMP_PRO_0033	Market Manual 7.2: Near Term Assessments and Reports
IMP_PRO_0035	Market Manual 7.3: Outage Management
PRO-357	Market Manual 13.1: Capacity Export Requests

– End of Document –