Energy Market Interface

Submitting, Revising and Cancelling Energy Offers

IESO Training

August 2026

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AN IESO MARKETPLACE TRAINING PUBLICATION

This guide has been prepared to assist in the IESO training of market participants and has been compiled from extracts from the market rules or documents posted on the web site of Ontario's Independent Electricity System Operator. Users of this guide are reminded that they remain responsible for complying with all of their obligations under the market rules and associated policies, standards and procedures relating to the subject matter of this guide, even if such obligations are not specifically referred to herein. While every effort has been made to ensure the provisions of this guide are accurate and up to date, users must be aware that the specific provisions of the market rules or particular document shall govern.

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1. Introduction

The purpose of this guide is to provide detailed instructions on submitting, cancelling, and revising energy offers using the energy market interface (EMI).

This guide is mainly aimed at market participants (MPs) who are generators, including virtual generators, in the physical market.

MPs in Ontario's physical markets use EMI to do the following actions:

- Submit, review and revise energy and operating reserve bids and offers.
- Submit, review and revise energy and operating reserve import offers and export bids.
- Submit, review and revise schedules and forecasts.
- Submit, review and revise daily dispatch data.
- Submit, review and revise forebay dispatch data.
- Receive market messages related to submissions made.

1.1 Terms

Whenever possible, this document uses terms as defined in the market rules and market manuals. To avoid confusion, a few definitions have been included below:

Dispatch Day

The dispatch day is the actual day the resource is injecting or withdrawing energy. It is also referred to as the trade day or trading day. The dispatch day is defined in the market rules as "a period from midnight EST to the following midnight EST". In EMI, the dispatch day is called the Delivery Date.

Pre-dispatch Day

The pre-dispatch day is defined in the market rules as the day immediately prior to the dispatch day. For example, if the dispatch day is Tuesday, the pre-dispatch day is Monday.

Dispatch Data

Dispatch data is a collective term referring to bid/offer, daily data, schedule and forecast information input by MPs to represent their operational intentions under different economic conditions.

Standing Bid/Offer

A standing bid/offer is a bid/offer that is expected to be the same from day to day, or week to week. For example, MPs may submit a bid/offer that is the same for every Wednesday. If entered as a standing bid/offer, it only has to be submitted once. The system will then ensure that a normal or hourly bid/offer is submitted for every Wednesday thereafter as per the submitted standing bid/offer information.

Initial (or Hourly) Bid/Offer

An Initial bid/offer is a bid/offer that is submitted for any or all hours of one day. This document refers to bids or offers submitted from 6:00 am Eastern Prevailing Time (EPT) on the pre-dispatch day up until ten minutes prior to the dispatch hour as "hourly" bids or offers. Any changes to hourly bids/offers, must follow revision rules, and changed bids/offers are sometimes referred to as "revised" bids/offers.

The EMI designation for Hourly bids/offers is Normal bids/offers.

> **Note:** Restrictions apply to bids/offers submitted after two (2) hours prior to the dispatch hour. See Appendix B: Revising and Cancelling Offer Rules for more information.

Tie Point ID and Tie Line ID

The EMI uses the term Tie Point ID, which is the same as the Tie Line ID.

Day-Ahead Market (DAM)

The DAM allows electricity suppliers, consumers, and traders to buy and sell electricity one day before it is delivered. The market uses forecasts of electricity demand, generation availability, and system conditions to determine schedules and prices for each hour of the following day, helping participants plan ahead and supporting the reliable and efficient operation of Ontario's electricity system. The DAM has specific timeline requirements for submitting and revising dispatch data. For complete details on DAM timelines, please refer to the DAM Market Manual 4.2 Operation of the Day-Ahead Market available on the Market Rules and Manuals Library web page.

Real Time Market (RTM)

The RTM matches electricity supply with demand across the province in real time. Electricity prices are updated every five minutes based on actual market conditions, ensuring reliable grid operation and efficient use of available generation resources. The RTM has specific timeline requirements for submitting and revising dispatch data. For complete details on RTM timelines, please refer to Appendix B: Revising and Cancelling Bid Rules in this document as well as Market Manual 4.3 Operation of the Real-Time Market.

2. Accessing EMI

The energy market interface (EMI) is the market participant interface with Ontario's physical markets.

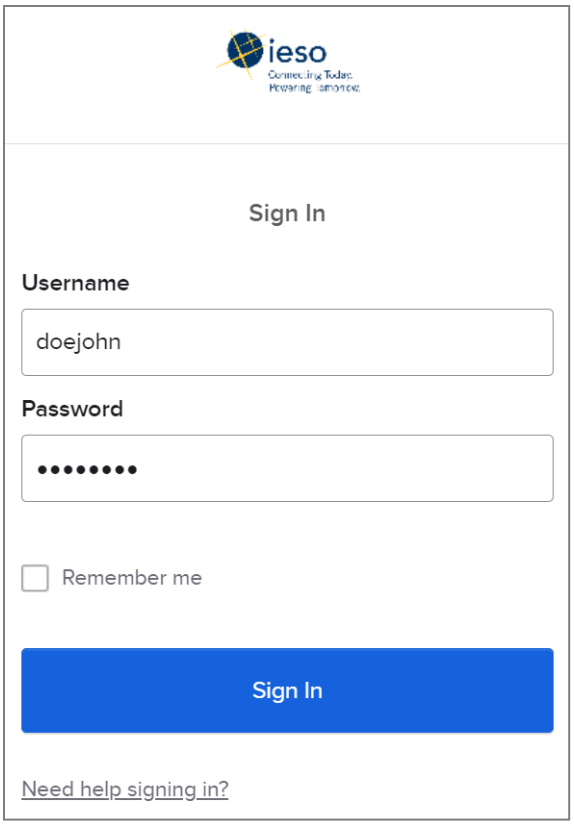
The EMI is used for:

- Participating in the day-ahead market, real-time market and operating reserve market: submitting, reviewing and revising dispatch data.
- Participating in inter-jurisdictional energy trading: submitting, reviewing and revising import offers and export bids.

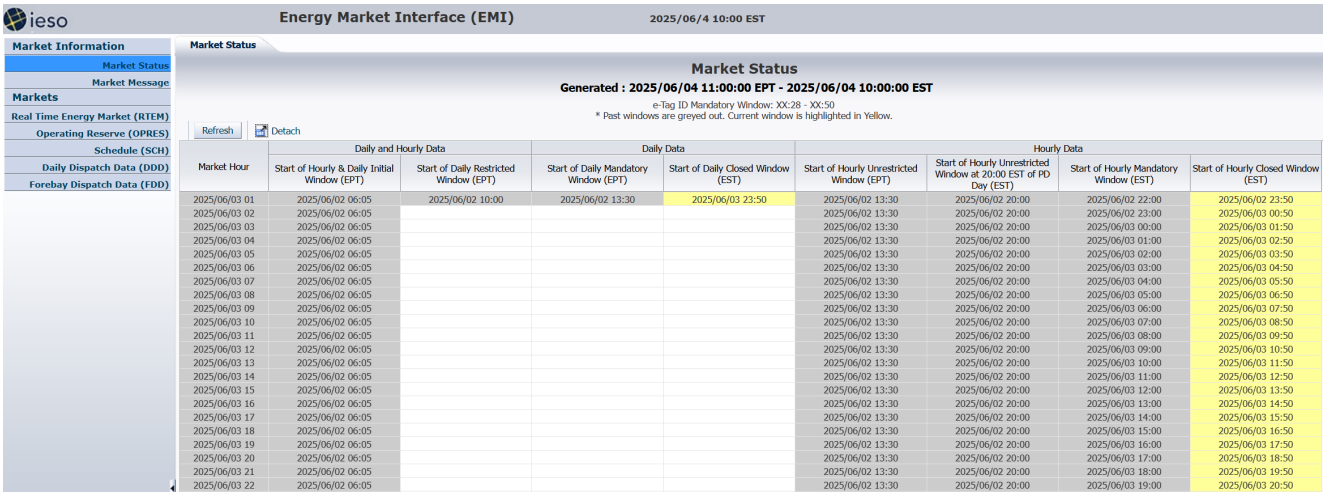
Note: To access EMI, a user needs to be assigned to a dispatch data viewer or dispatch data submitter contact role. In order for a dispatch data submitter to submit bids and offers in EMI, an applicant representative of the organization needs to create a user-resource relationship in Online IESO. Additionally, an active gateway account is required.

To access the EMI, complete the following steps:

1. Open the EMI URL (https://emi.ieso.ca) or open the IESO Gateway URL (https://gateway.ieso.ca) and navigate to EMI.
2. Enter the appropriate IESO Gateway Username, Password and click **Sign In.**



The EMI main page displaying the current **Market Status** will appear (shown below). The **Market Status** display continually updates and displays the current status for each of the physical markets.



Market Hour	Daily and Hourly Data		Daily Data		Hourly Data			
	Start of Hourly & Daily Initial Window (EPT)	Start of Daily Restricted Window (EPT)	Start of Daily Mandatory Window (EPT)	Start of Daily Closed Window (EST)	Start of Hourly Unrestricted Window (EPT)	Start of Hourly Unrestricted Window at 20:00 EST of PD Day (EST)	Start of Hourly Mandatory Window (EST)	Start of Hourly Closed Window (EST)
2025/06/03 01	2025/06/02 06:05	2025/06/02 10:00	2025/06/02 13:30	2025/06/03 23:50	2025/06/02 13:30	2025/06/02 20:00	2025/06/02 22:00	2025/06/02 23:50
2025/06/03 02	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/02 23:00	2025/06/03 00:50
2025/06/03 03	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 00:00	2025/06/03 01:50
2025/06/03 04	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 01:00	2025/06/03 02:50
2025/06/03 05	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 02:00	2025/06/03 03:50
2025/06/03 06	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 03:00	2025/06/03 04:50
2025/06/03 07	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 04:00	2025/06/03 05:50
2025/06/03 08	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 05:00	2025/06/03 06:50
2025/06/03 09	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 06:00	2025/06/03 07:50
2025/06/03 10	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 07:00	2025/06/03 08:50
2025/06/03 11	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 08:00	2025/06/03 09:50
2025/06/03 12	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 09:00	2025/06/03 10:50
2025/06/03 13	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 10:00	2025/06/03 11:50
2025/06/03 14	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 11:00	2025/06/03 12:50
2025/06/03 15	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 12:00	2025/06/03 13:50
2025/06/03 16	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 13:00	2025/06/03 14:50
2025/06/03 17	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 14:00	2025/06/03 15:50
2025/06/03 18	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 15:00	2025/06/03 16:50
2025/06/03 19	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 16:00	2025/06/03 17:50
2025/06/03 20	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 17:00	2025/06/03 18:50
2025/06/03 21	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 18:00	2025/06/03 19:50
2025/06/03 22	2025/06/02 06:05				2025/06/02 13:30	2025/06/02 20:00	2025/06/03 19:00	2025/06/03 20:50

3. Submitting Energy Offers

There are three types of offers in the day-ahead market (DAM) or real-time market (RTM): initial (or hourly) offers, standing offers, and revised offers.

Dispatchable generators must submit offers to the IESO using the EMI in order to supply energy to the IESO-controlled grid. Virtual generators looking to participate in the day-ahead market must also submit offers through the EMI.

Offer submissions must follow the market rules regarding price-quantity pairs, timing, ramp rates, revisions and cancellations, etc. set out in Market Rules (MR) Chapter 7 and Market Manuals (MM) 4.1 Submitting Dispatch Data in the Physical Markets available on the Market Rules and Manuals Library web page.

See Introduction to Ontario's Physical Markets on the IESO Training web page for more information.

3.1 Energy Offer Parameters, Terms and Timelines

This section describes the appropriate parameters, further defines terms and required timelines that MPs must understand and follow to successfully submit their energy offers.

There are three types of offers MPs may submit and each have associated timeline rules:

- Initial or Hourly Offers,
- Standing Offers, and
- Revised Offers.

Initial (or Hourly Offer)

Also called Normal in the EMI, this is an offer submitted from 06:00 EPT on the pre-dispatch day up until ten minutes prior to the dispatch hour. Offers submitted within two hours of the dispatch hour require IESO approval.

See Appendix B: Revising and Cancelling Offer Rules for more information.

Note: Under the DAM, dispatchable generators must submit offers by 10:00 EPT on the pre-dispatch day if they want to participate on the dispatch day. Refer to the DAM Market Manual 4.2 Operation of the Day-Ahead Market available on the Market Rules and Manuals Library web page.

Standing Offer

A standing offer is an offer that is expected to be the same from day to day, or week to week. Submitting a Standing Offer ensures that there is always an offer in the market, and it also decreases the amount of time spent on submissions, since it provides a form of automation.

Standing Offers are converted to Hourly Offers once a day at 06:00 EPT on the pre-dispatch day. For example, at 06:00 EPT on Monday, Standing Offers become Hourly Offers for Tuesday.

A Standing Offer only takes effect after it has been converted to an Hourly Offer. For example:

- If a Standing Offer is submitted for all days of the week after 06:00 EPT on Monday, the offer will convert to an Hourly Offer at 06:00 EPT on Tuesday to be effective for the trade date of Wednesday.

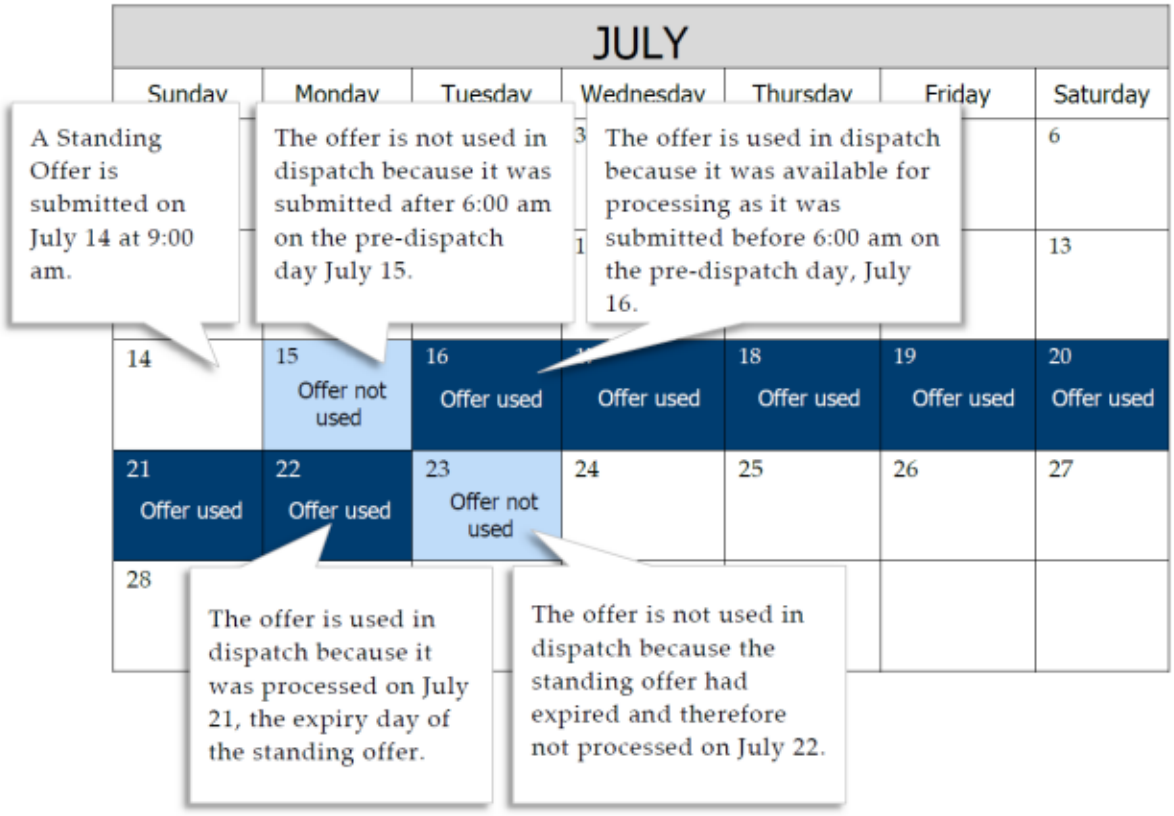
> **Note:** Standing Offers are converted to Hourly Offers for the NEXT day at 06:00 EPT.

- If the same Standing Offer is submitted before 06:00 EPT on Monday, it will be available for the 06:00 EPT conversion on that day and could be used for the Tuesday's dispatch.

Standing Offers for a single day of the week may be submitted as early as one (1) week prior to the first dispatch day covered by the offer.

Standing Offer Example

If an MP wishes to submit a standing offer to be used for July 16, 17, 18, 19, 20, 21 and 22. Therefore, the MP must submit their standing offers before 06:00 EPT on July 15th, with an expiry date of July 22. In this example, at 09:00 EST on July 15, the MP submits a standing offer for all days, with an expiry date of July 22.



Revised or Cancelling Offers

Both Standing Offers and Hourly Offers may be revised according to the rules for revising offers. See Section Appendix B: Revising and Cancelling Offer Rules for more information.

Expiry Date

An expiry date can be entered for a Standing Offer. The expiry date is the last date the offer will be converted to an Hourly Offer.

For example, if an expiry date of July 28 entered, the last time the offer will be converted to an Hourly Offer is at 6:00 EPT on July 28 and will be considered effective for the trade day of July 29.

Maximum Daily Energy Limit

The Maximum Daily Energy Limit is the maximum amount of energy (in MWh) that can be scheduled from a generation resource during a given day. This parameter is used in both day-ahead and in pre-dispatch.

Applicable for: Non-Quick Start Generation, Variable Generation, Hydro Electric Generation, Other Quick Start Generation and Electricity Storage (intending to inject) Resources.

Mandatory/Optional: Optional

Data Interval: Daily

When submitting the maximum daily energy limit MPs must select one of the following reason codes from the MAX DEL reason code field to be submitted with the maximum daily energy limit value:

- safety of any person;
- damage to equipment;
- violation of any applicable law; or
- fuel availability

When a maximum daily energy limit is not submitted, a null value will apply for the dispatch day.

> **Note:** Electricity storage participants who are offering energy from an electricity storage resource should use the maximum daily energy limit to reflect their state of charge limitations. Doing so will limit the schedules they receive to inject from the DAM calculation engine and the pre-dispatch calculation (PD) engine, as otherwise the schedules produced from these engines may exceed the ability of the resource to provide energy. Electricity storage participants entering a maximum daily energy limit should use 'fuel availability' as a reason code.

Minimum Daily Energy Limit

The Minimum Daily Energy Limit is the minimum amount of energy (in MWh) that must be supplied from a generation resource during a given day. This parameter is used in both day-ahead and in pre-dispatch.

Applicable for: Hydro Electric

Mandatory/Optional: Optional

Data Interval: Daily

When a minimum daily energy limit is not submitted, a null value will apply for the dispatch day.

Thermal State

The thermal State parameter will be used to provide a thermal state (hot, warm or cold) for use in DAM calculations. It will allow the DAM to select which of the hot, warm, or cold parameters to use when determining which start-up offer and ramp up energy to MLP profile to use in calculations.

The DAM, however, also will use the hot thermal state MGBDT to schedule a second or subsequent commitment for the day regardless of the thermal state submission. This allows the DAM to consider committing a resource to additional periods while ensuring that start-ups are separated by the minimum number of operationally feasible hours. However, the start-up offer and ramp up energy to MLP profile used by the DAM in its evaluation will be based on whatever thermal state was submitted as daily dispatch data. So, for example, if a cold thermal state was submitted, the DAM calculation engine will use the cold start-up offer and ramp up energy to MLP profile when determining if there will be subsequent starts.

Applicable for: Non-Quick Start resources

Mandatory/Optional: Mandatory

Data Interval: Daily

Daily Energy Ramp Rate

The daily energy ramp rate will indicate the speed, in megawatts per minute, at which a resource can increase or decrease its output. MPs may submit laminations that are different from those of the price-quantity pairs included in each hourly energy bid or energy offer. The daily energy ramp rate will be used in day-ahead and pre-dispatch calculations to determine the allowable difference between hourly schedules.

Applicable for: All dispatchable resources

Mandatory/Optional: Mandatory

Data Interval: Daily

Virtual Transaction Zonal Trading Entity

The virtual transaction zonal trading entity field represents virtual zonal resource. The submission of dispatch data for virtual transactions shall follow the same process that is generally used for physical transactions in the day-ahead market. A registered MP for a virtual trader may submit energy offers and energy bids in the day-ahead market. Dispatch data with respect to virtual transactions must be associated with one of the virtual zonal resources, corresponding to a virtual transaction zone, which have been established in the IESO's market systems. The IESO has established two virtual zonal resources for each virtual transaction zone, one resource for offers and one resource for bids, for which dispatch data can be submitted to facilitate virtual transactions. This means a registered virtual trader may submit no more than one energy offer or bid, as applicable, for each virtual zonal resource for a dispatch hour. An offer or bid submitted on a virtual zonal resource must specify whether the virtual zonal resource will be conducting a virtual sale ('VIRTUAL-GENERATOR') or a virtual purchase ('VIRTUAL-LOAD') of energy in the "Resource Type" field of the submission.

Applicable for: Virtual Generator & Virtual Load

Mandatory/Optional: Mandatory

Data Interval: hourly

Speed No Load Offer

Speed no-load offers will be the dollar amount offered to operate a resource in a synchronized state while injecting no net active energy to the grid. Speed no-load offers will be considered in both the day-ahead market scheduling process and in pre-dispatch.

Applicable for: Non-Quick Start Generation

Mandatory/Optional: Optional

Data Interval: hourly

Start Up Offer

A start up offer will be the dollar amount offered by the registered market participant to bring an off-line resource to its minimum loading point based on the resource's thermal state. Participants will be required to submit offers for a cold, warm or hot start. This information will be used in pre-dispatch as well as in the day-ahead market.

Applicable for: Non-Quick Start Generation

Mandatory/Optional: Optional

Data Interval: hourly

Minimum Hourly Output

Minimum Hourly Output parameter which indicates the minimum energy output that a resource must produce in an hour, if it is economic. The sum of all minimum hourly output submissions in a given dispatch day is not to exceed the resource's submitted maximum daily energy limit. A minimum hourly output value can only be submitted if:

1) spill restrictions are anticipated to prevent the generation resource from responding to dispatch instructions between zero megawatts and the minimum hourly output value; and

2) it reasonably could be expected that following a dispatch instruction between zero megawatts and the minimum hourly output value would require the resource to operate in a manner that could endanger the safety of any person, damage equipment, or violate any applicable law

Applicable for: Hydro Electric Resource

Mandatory/Optional: Optional

Data Interval: hourly

Hourly Must Run

Hourly Must-Run parameter is the hourly energy that a resource must produce, even if it is uneconomic. It will be used in the DAM and pre-dispatch and reflected as a constraint in real-time.

Applicable for: Hydro Electric Resource

Mandatory/Optional: Optional

Data Interval: hourly

Variable Generation (VG) Forecast Quantity

For the variable generation forecast quantity MPs may submit a VG Forecast Quantity for each dispatch hour. The VG forecast quantity, if submitted for the dispatch hour, replaces the IESO's centralized forecast quantity for the resource for the dispatch hour. Where no variable generation forecast quantity is submitted, the IESO's centralized forecast quantity for the resource will continue to be used for the dispatch hour

Applicable for: Variable Generation Resource

Mandatory/Optional: Optional

Data Interval: hourly

Hourly Ramp Rates

The hourly ramp rate is the rate at which a unit can increase or decrease its energy output expressed in megawatts per minute. MPs may submit up to five laminations that are different from those submitted as Daily Dispatch Data. The hourly ramp rates will be used only by the Real-Time calculation engine for dispatch schedule creation.

Applicable for: All dispatchable resources

Mandatory/Optional: Mandatory

Data Interval: hourly

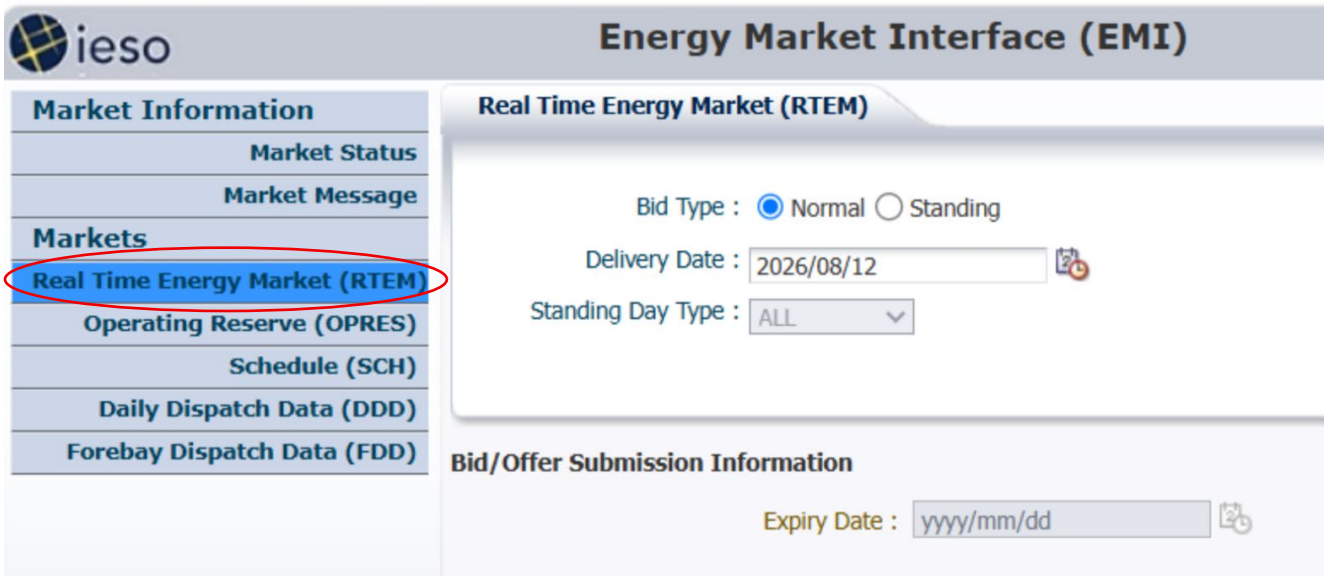
3.2 Preparing Initial or Standing Energy Offers

The following instructions apply to preparing an initial offer or a standing offer using the EMI. See Section 4, Revising and Cancelling Energy Offers, for information on revising or cancelling a previously submitted offer.

For submission timeline information for energy offers see Appendix B: Revising and Cancelling Offer Rules.

To submit an initial offer (called Normal in the EMI) or a standing offer, complete the following steps:

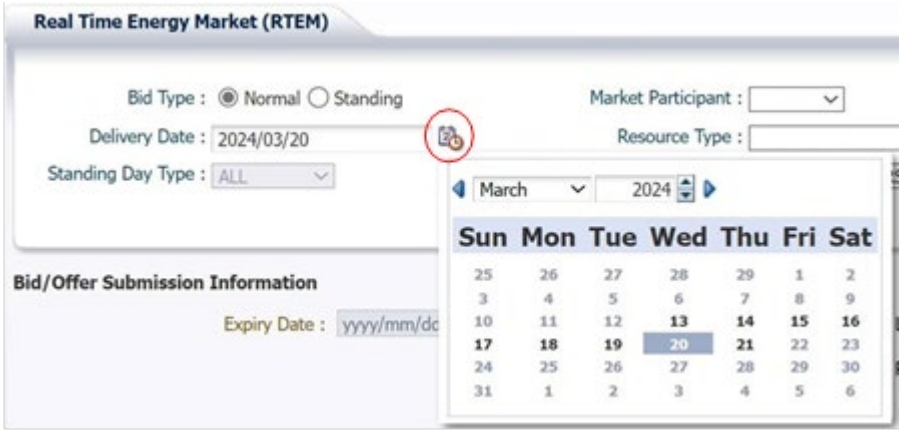
1. Select **Real Time Energy Market (RTEM)** under **Markets** from the menu on the left side of the EMI.



2. Select the **Bid Type** as either **Normal** or **Standing**.

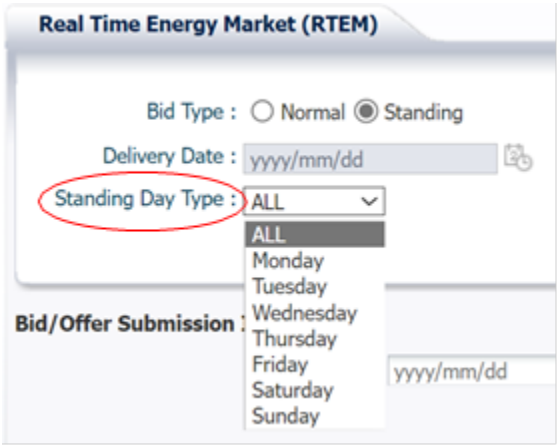
3. If submitting a **Normal** offer, select the **Delivery Date**. For standing offers, this field is not required and is therefore not selectable.

The **Delivery Date** defaults to the current dispatch day. If the offer is for the next dispatch day, click the calendar icon and select the appropriate date from the calendar.



If the **Delivery Date** is selected after having already selected the **Resource Type**, and **Resource Name**, the correct **Resource Type** and **Resource Name** may have to be selected again. EMI changes the resource type and resource name lists based on the delivery date.

4. If submitting a standing offer, select the Standing Day Type. If the standing offer is for all days of the week, select ALL. Otherwise, select the day of the week to which the standing offer applies.

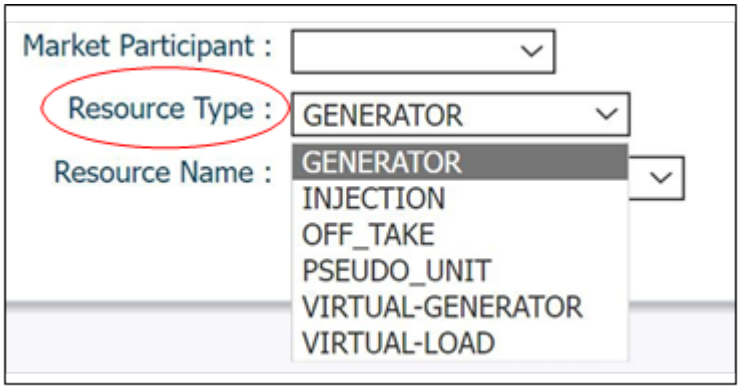


An **Expiry Date** can be included with a standing offer. The **Expiry Date** is the last date the standing offer will be valid for.

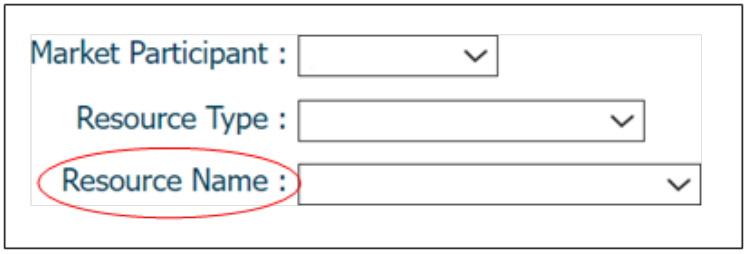
For example, if an Expiry Date of July 28 is submitted, the last time a standing offer will be converted to a normal offer is at 6:00 am EPT on July 27 and will be considered effective for the trade day of July 28

5. Click the drop-down next to Market Participant to see a list of the market participants that the user is authorized to enter dispatch data on behalf of.

Choose the desired **Market Participant** to enter an energy offer on behalf of and then click the drop- down next to **Resource Type** and select either **GENERATOR, PSEUDO_UNIT** or **VIRTUAL-GENERATOR**, as required.



6. Click the drop-down next to Resource Name and select the facility the offer is being submitted for.



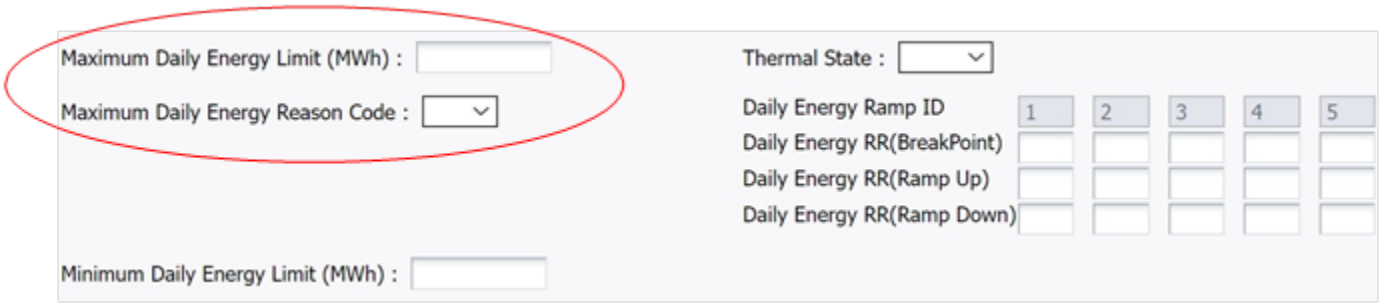
The **Resource Name** is the unique reference for a facility used when submitting bids and offers. It is also called the delivery point and is used as the point of settlement for Ontario's physical markets.

7. Proceed to Section 3.3, Submitting Offer Information, to complete the empty offer form, or see Section 4.1, Retrieving an Energy Offer, to populate the screen with dispatch data from that existing offer.

3.3 Submitting Energy Offer Information

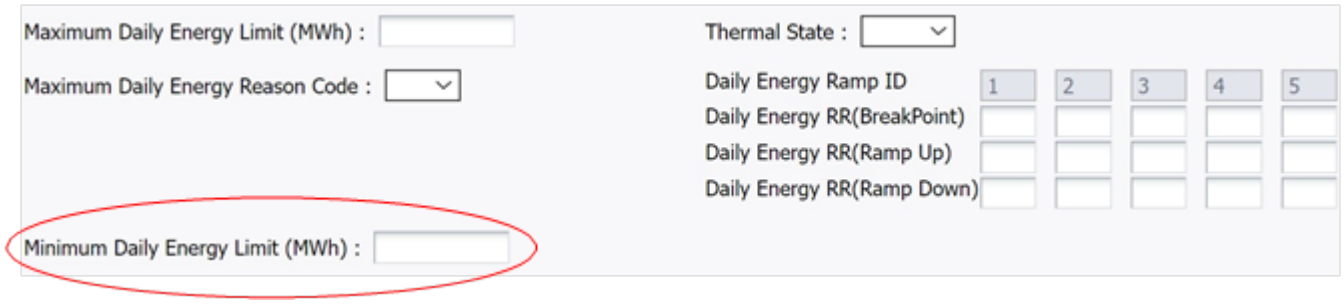
To enter offer information, complete the following steps, as applicable to the resource. Refer to section 3.1 of this guide to identify the relevant parameter(s) for each resource type:

1. Enter a **Maximum Daily Energy Limit** in MWh, up to one (1) decimal place, and select a **Maximum Daily Energy Reason Code** from the drop-down. A reason code must be provided if maximum daily energy limit is not blank. Refer to MM 4.1 s.2.1.10 for more information.

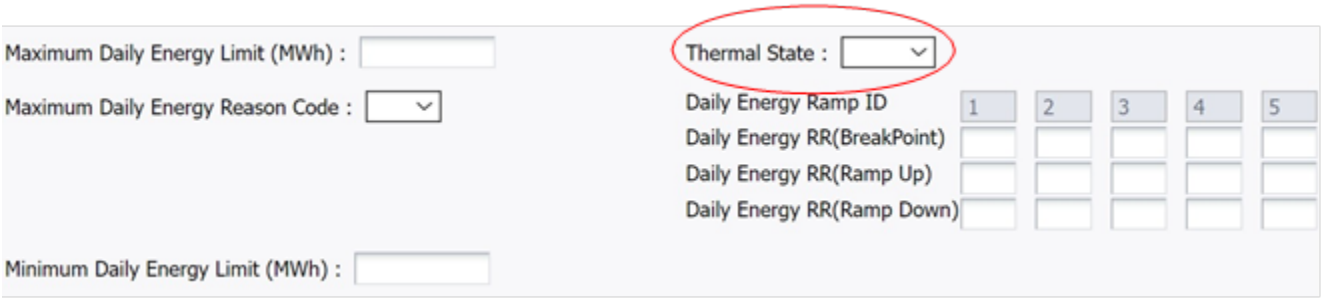


The only way to remove a submitted maximum daily energy limit, is to delete the existing value, leaving the field blank, and making the submission again. Entering a value of zero (0) does not remove the limit. Instead, it indicates that the facility has no energy at all that can be scheduled.

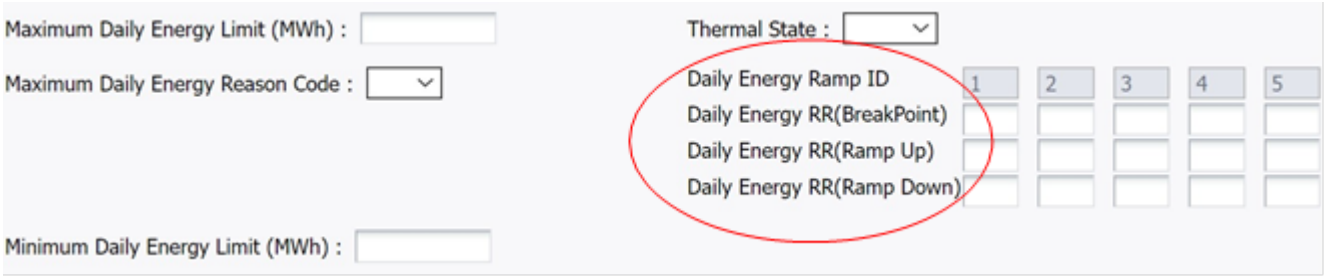
2. Enter a **Minimum Daily Energy Limit** in MWh, up to one (1) decimal place. Refer to MM 4.1 s.2.1.11 for more information.



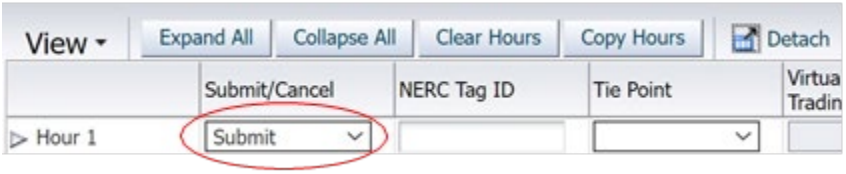
3. Select a **Thermal State** from the drop-down. Refer to MM 4.1 s.2.1.19 for more information.



4. In the **Daily Energy Ramp ID** section, enter up to 5 daily ramp rate sets. See Section 3.3.1 of this document for more information on the different components of the ramp rates.

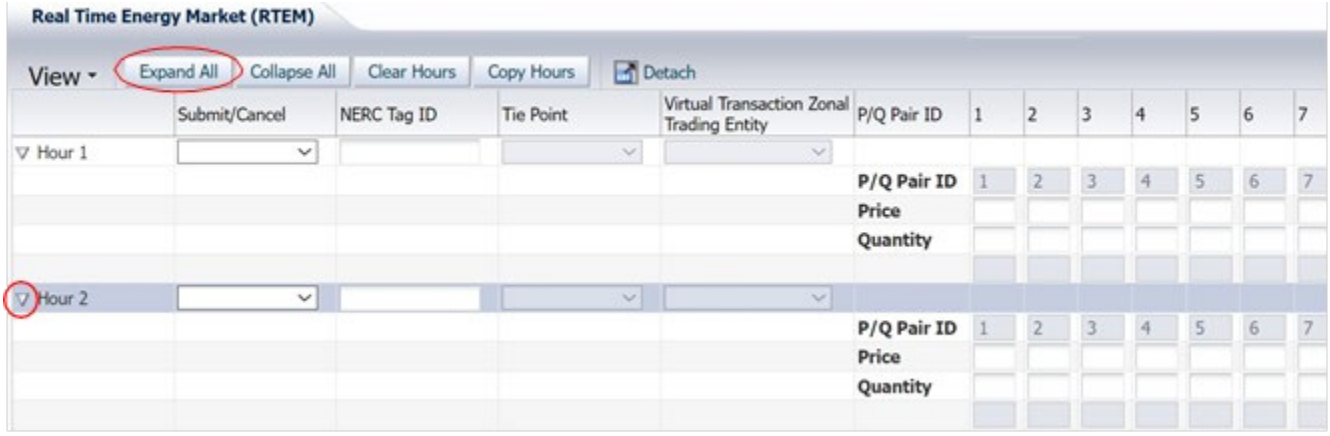


5. Select **Submit** from the drop-down next to the Hour number for each **hour** that an offer is to be submitted for.

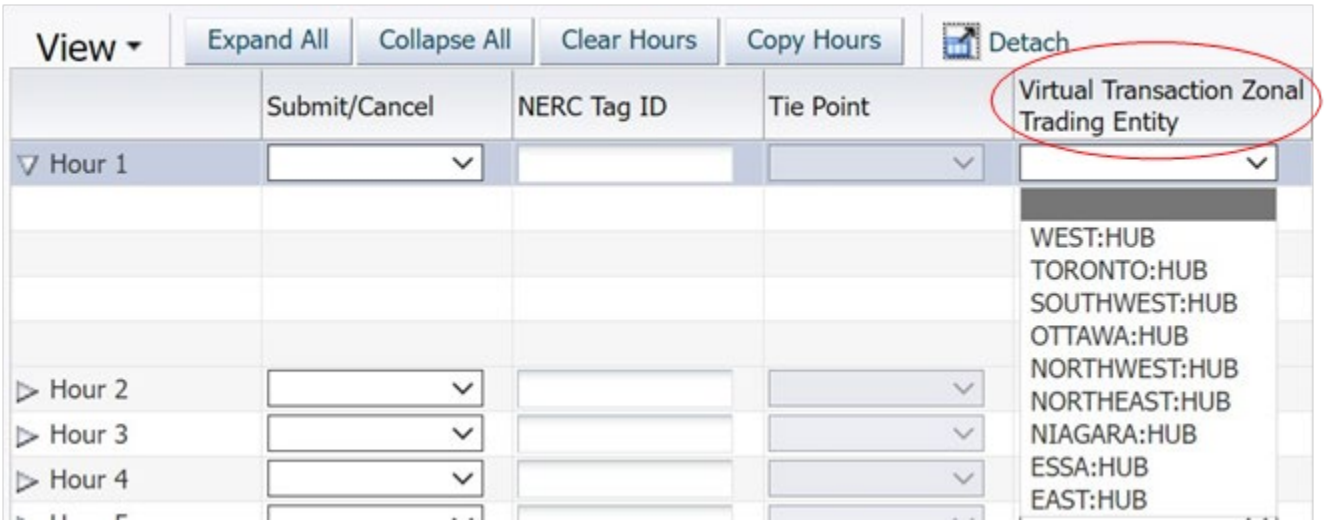


The market software tools use the "hour ending" convention. In other words, Hour 1 is the first hour of the day, which is the hour that starts at midnight and ends at 1:00 am. Hours 10-11 are the hours from 9:00 am to 11:00 am. Hours 1-24 are the hours from midnight one day through midnight the next day. Eastern Standard Time is used year-round.

6. Click the triangle next to the **Hour** number to expand the submission section, to enter up to 20 price-quantity (PQ) pairs for each hour or click **Expand All** to reveal the submission section for every hour. Clicking **Collapse All** will hide the submission section for all hours.

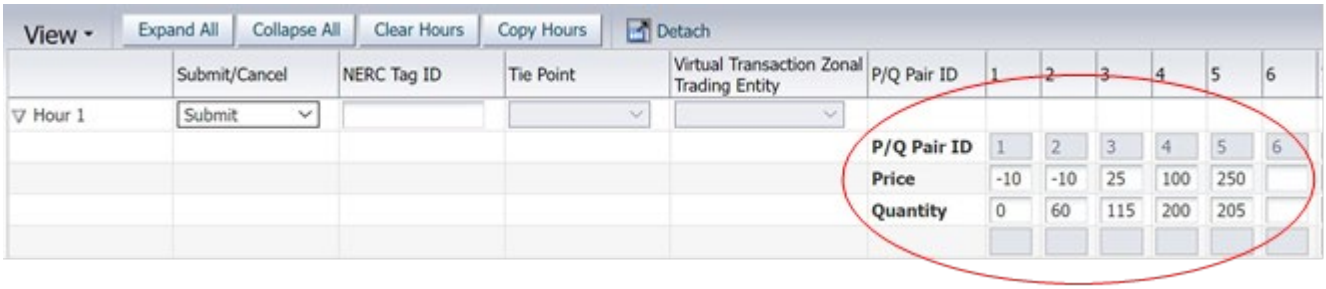


7. If submitting on behalf of a virtual generator, select a **Virtual Transaction Zonal Trading Entity** from the drop-down. Refer to MM 4.1 Appendix E for virtual zonal resource and virtual transaction zone resources.

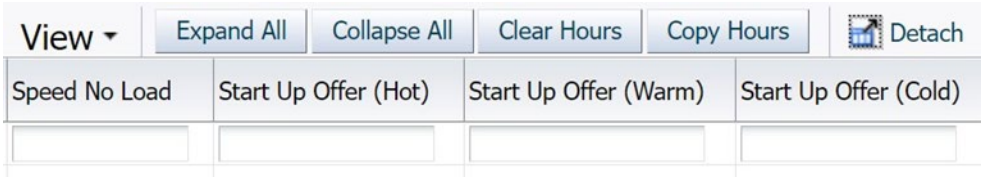


8. In the **P/Q Pair ID** section, enter:
   A. **Price** in dollars and cents, up to two decimal places, for each hourly offer. For example, $10 dollars may be entered as 10.00 or 10.0 or 10.
   B. **Quantity** in megawatts (MW), up to one decimal place, for each hourly offer.

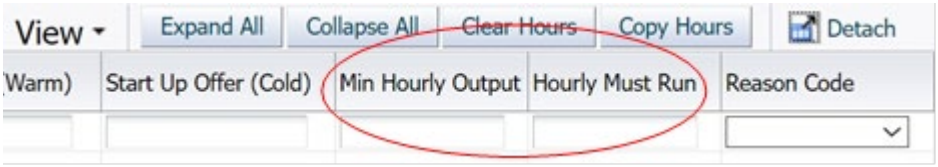
See Appendix A: Rules for Price/Quantity Pairs for more information about PQ pairs.



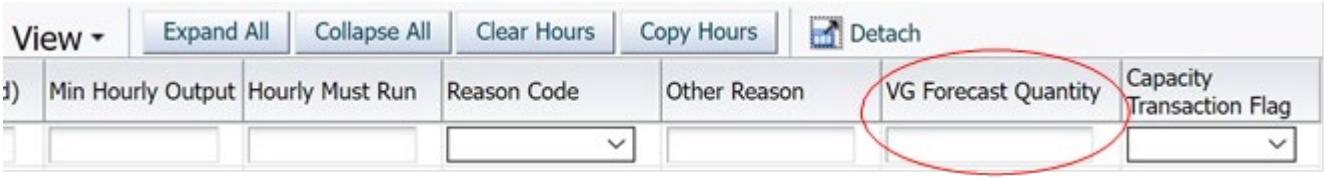
9. Enter **Speed No Load** and **Start Up Offer** (Hot, Warm and Cold) as applicable. Refer to MM 4.1 s.2.1.3 for more information.



10. Enter **Min Hourly Output** and **Hourly Must Run** as applicable. Refer to MM 4.1 s.2.1.5 and s.2.1.6 for more information.



11. If submitting on behalf of a variable generation resource, a **VG Forecast Quantity** may be entered. Refer to MM 4.1 s.2.1.7 for more information.



3.3.1 Submitting Daily, Hourly and Operating Reserve Ramp Rates

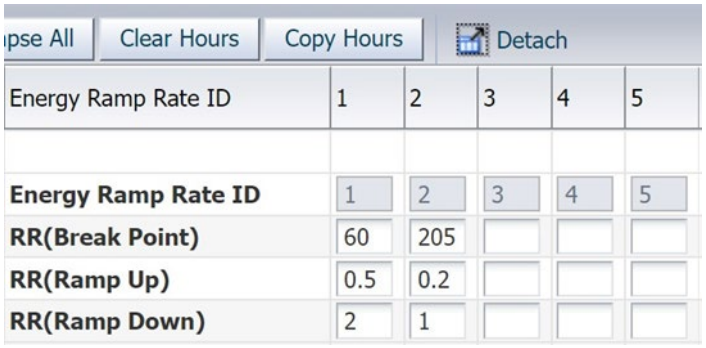
To enter energy ramp rates, complete the following steps. Refer to MM 4.1 s.2.1.4 for more information.

1. Enter up to 5 daily ramp rate breakpoints and associated daily ramp up and daily ramp down values starting with the first column.

Daily Energy Ramp ID	1	2	3	4	5
Daily Energy RR(BreakPoint)	20	75			
Daily Energy RR(Ramp Up)	0.3	5			
Daily Energy RR(Ramp Down)	10	10			

2. For an hour that has a price-quantity pair entered, enter up to 5 hourly ramp rate breakpoints and associated ramp up and ramp down values starting with the first column.

All ramp rate values are in MW to one decimal place. Ramp up and down MW are per minute values.



For any hour that has a submitted price-quantity pair and the resource type is authorized to submit operating reserve offers, a corresponding OR Ramp Rate must be submitted. Enter the ramp rate as MW per minute, rounded to one decimal place. Refer to MM 4.1 s.3.1.3 for more information.

> **Note:** Operating reserve offers must be submitted in the **OPRES** screen, and the corresponding **Operating Reserve (OR) ramp rate** must be entered in the **RTEM** screen within **EMI**.

3.3.2 Dispatch Data Parameters that are not Applicable

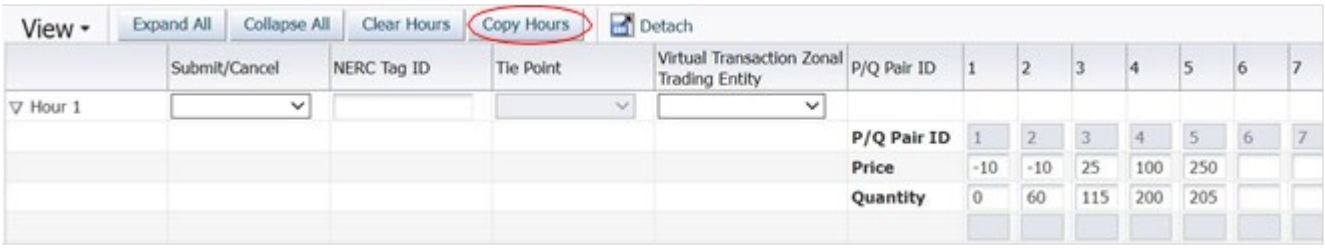
There are dispatch data parameters that are not applicable to dispatchable generators or virtual generators. The input fields for the following parameters should be left blank:

- NERC Tag ID
- Tie Point
- Capacity Transaction Flag

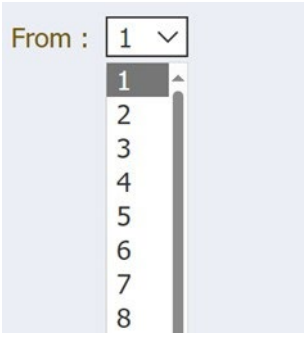
3.4 Entering the Same Offer for Multiple Hours

An efficient way to copy the information from a chosen hour to other selected hours is to use the **Copy Hours** button. If submitting the same hourly *offer* information for multiple hours in a day, complete the steps below.

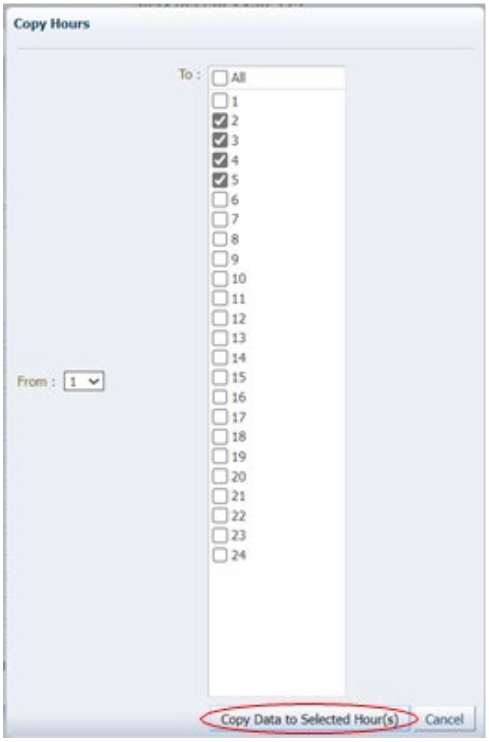
1. After entering price-quantity pairs and other dispatch data for a single hour click **Copy Hours**.



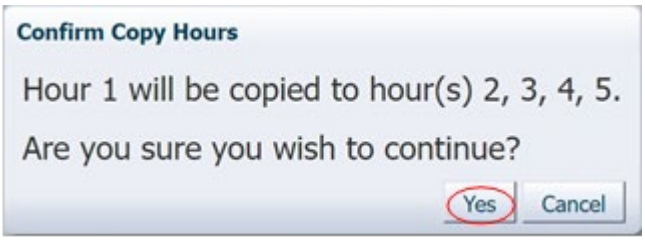
2. In the drop-down next to **From**, select the desired hour to copy.



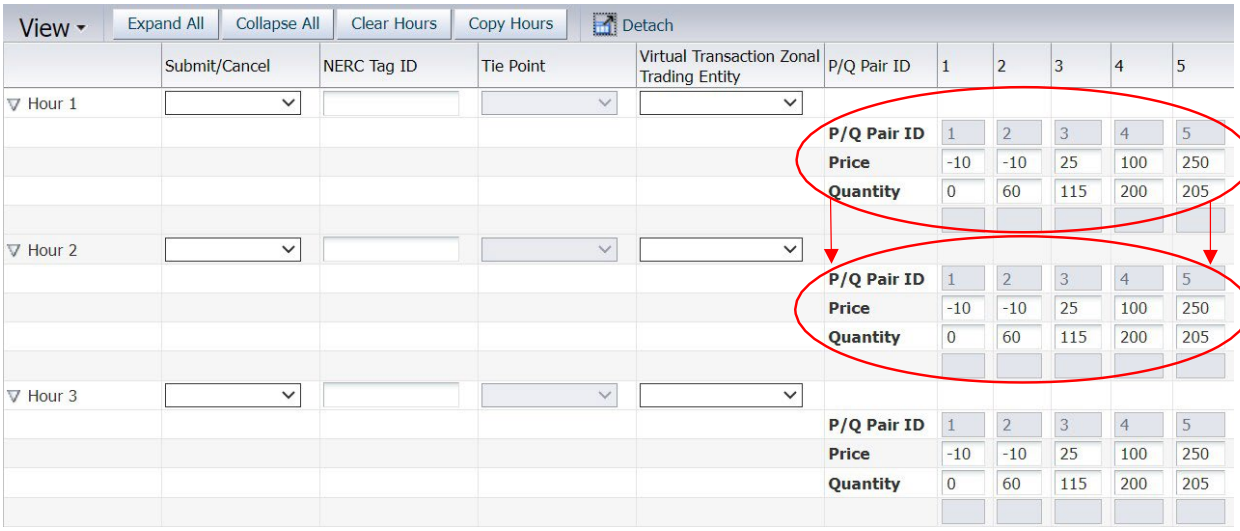
3. Select the hours to copy the *offers* to, or select **All**, then click **Copy Data to Selected Hour(s)**



4. Confirm the selection then click **Yes** to proceed.



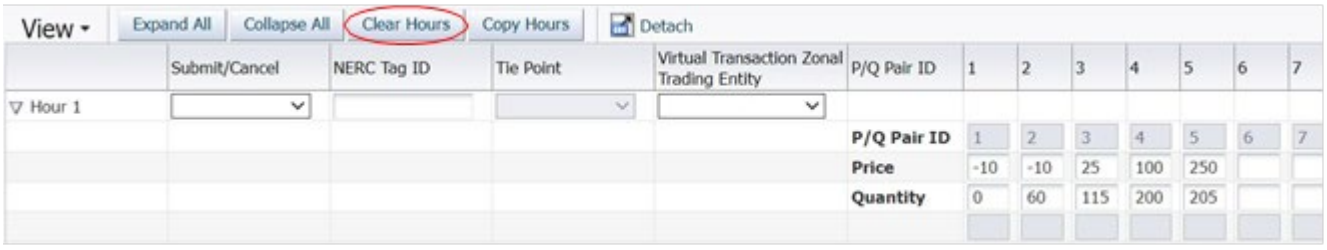
The price-quantity pairs and other dispatch data are copied to the hours selected.



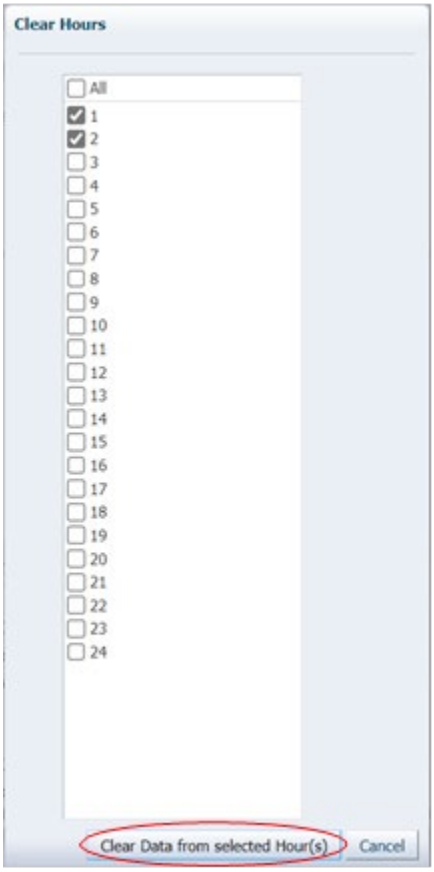
3.5 Clearing Data from Multiple Hours

Rather than deleting each *price-quantity pair* and other *dispatch data* for any hour(s) or all hours, offers can easily be deleted using the **Clear Hours** button.

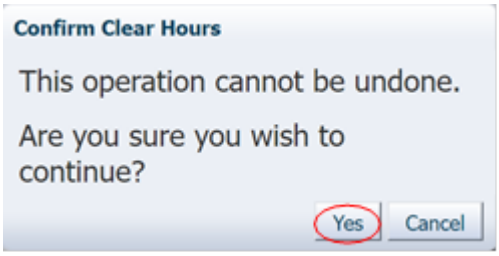
1. Click **Clear Hours** to remove all *offer* data for any hour(s) or all hours.



2. Select the hours to clear offers for, or select **All**, then click **Clear Data from selected Hour(s)**.



3. Click **Yes** to proceed.

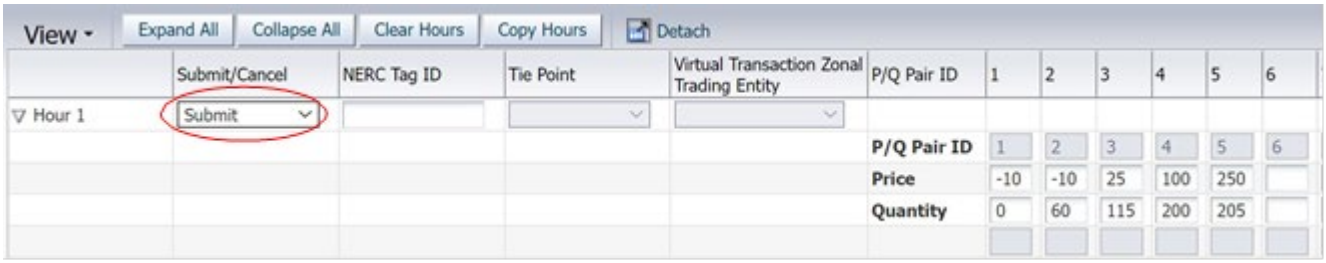


The price-quantity pairs, and other *dispatch data*, are cleared from the hours selected.

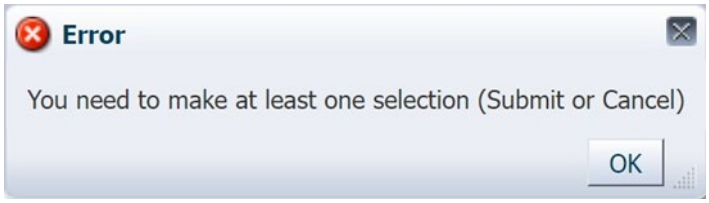
3.6 Submitting an Energy Offer

Once offer data has been entered and is ready to be submitted to the IESO. Complete the following steps to submit the offer:

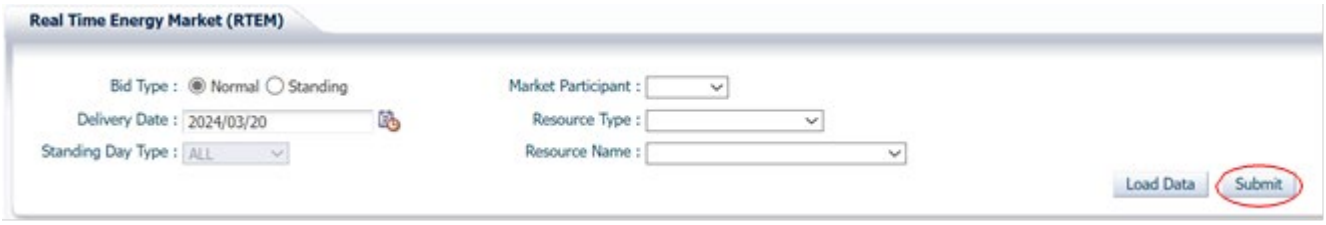
1. Verify that the offer information is correct and complete.
2. Select **Submit** from the drop-down next to the **Hour** number for the hours that are to be submitted as part of the offer.



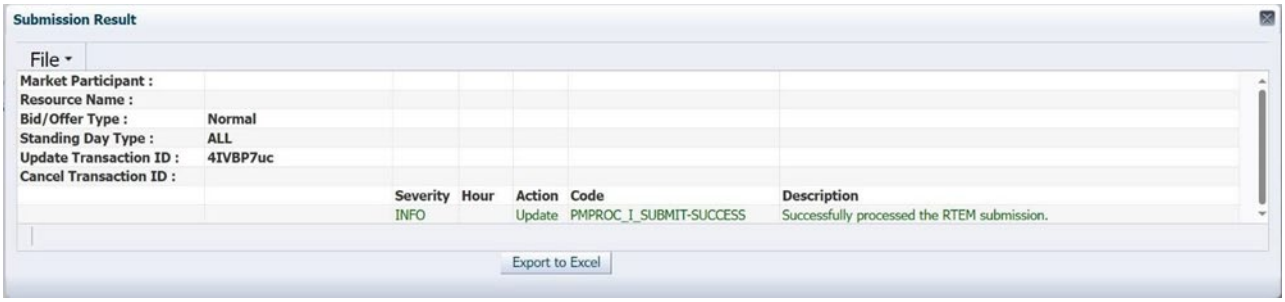
3. Otherwise, the following error message will appear when attempting to submit the offer to the IESO:



4. Click **Submit** to send the offer to the IESO.



5. A pop-up will appear within a few moments of submitting the offer, displaying the offer status. Review the **Submission Result** screen to ensure that the submission for all hours have been successfully updated and applied. Please note that while not applicable to **Normal** *offers*, **Standard Day Type** will return **ALL** in the output file due to default settings.



6. Click **Export to Excel** to produce a spreadsheet of the **Submission Result** screen, or take a screen print and/or record the **Update Transaction ID** number. The **Submission Result** screen cannot be retrieved again.

A sample Excel export is included below:

Market Participant :						
Resource Name :						
Bid/Offer Type :	Normal					
Standing Day Type :	ALL					
Update Transaction ID :	4IVBP7uc					
Cancel Transaction ID :						
		Severity	Hour	Action	Code	Description
		INFO		Update	PMPROC_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.

4. Revising and Cancelling Energy Offers

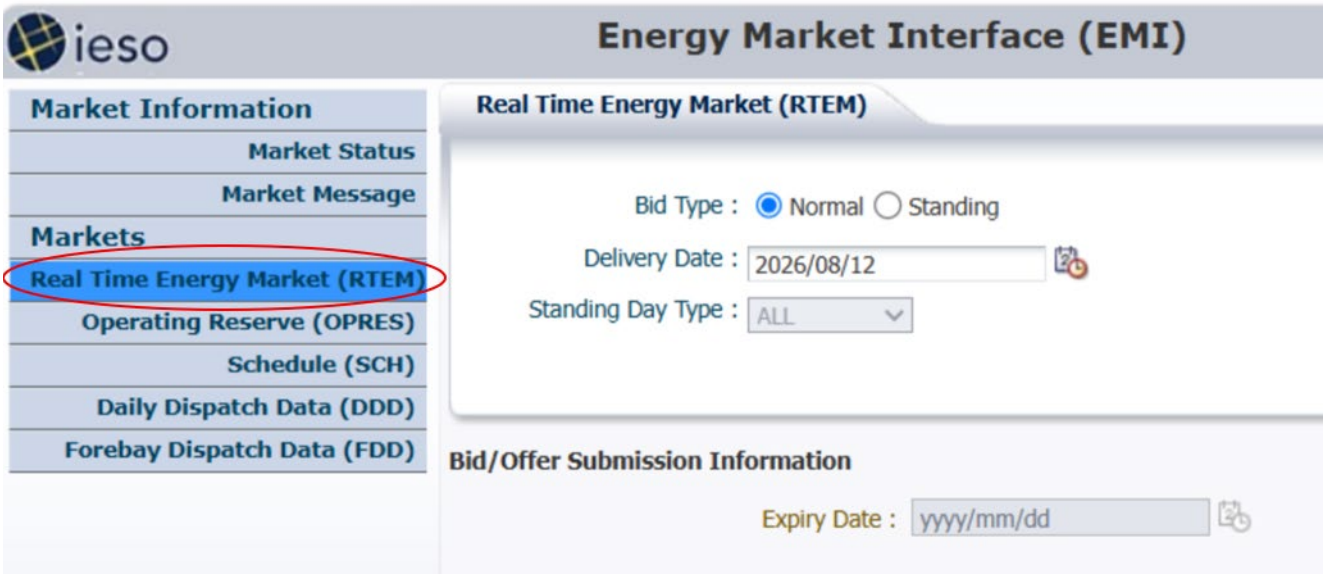
Initial offers may be revised provided the changes follow the rules for revised offers. See Market Rules Chapter 7 and Market Manual 4.1 for more information regarding submitting revised offers or cancelling offers. See Appendix B: Revising and Cancelling Offer Rules for more information regarding the rules for submitting revised offers or cancelling offers.

Note: If an operating reserve offer is associated with the energy offer, the operating reserve offer must be canceled before the system will allow the energy offer to be canceled.

4.1 Retrieving an Energy Offer

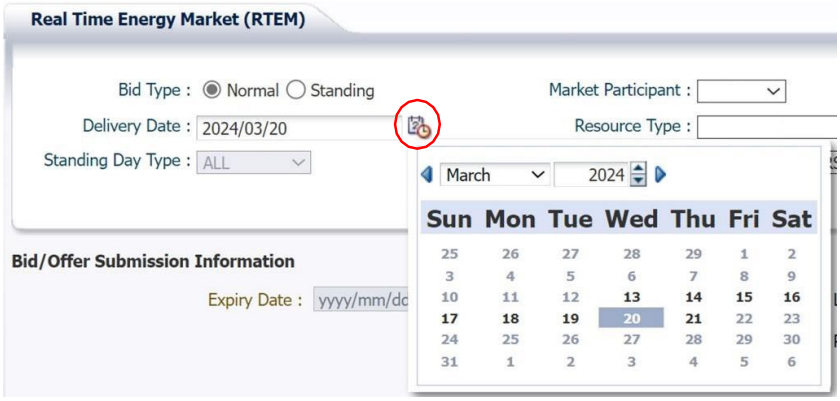
The easiest way to revise or cancel offers is to first retrieve the offers. To retrieve an offer, complete the following steps:

1. Select **Real Time Energy Market (RTEM)** under **Markets** from the menu on the left side of the EMI



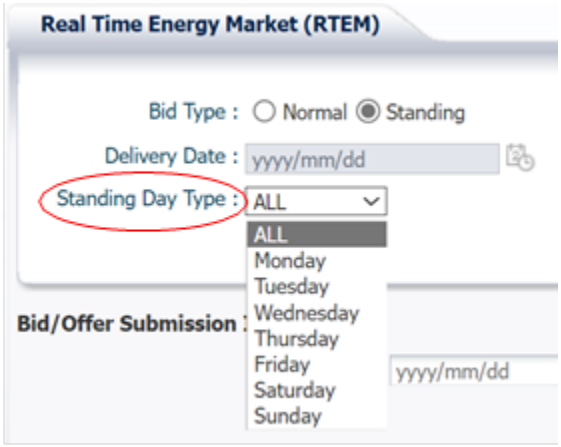
2. Select the **Bid Type** of the offer desired to be retrieved.

3. If revising a **Normal** offer, select the **Delivery Date** of the offer desired to be retrieved. For standing offers, this field is not required and is therefore not selectable.



If **Delivery Date** is selected after having already selected the **Resource Type**, and **Resource Name**, the correct **Resource Type** and **Resource Name** may have to be selected again. EMI changes the resource type and resource name lists based on the delivery date.

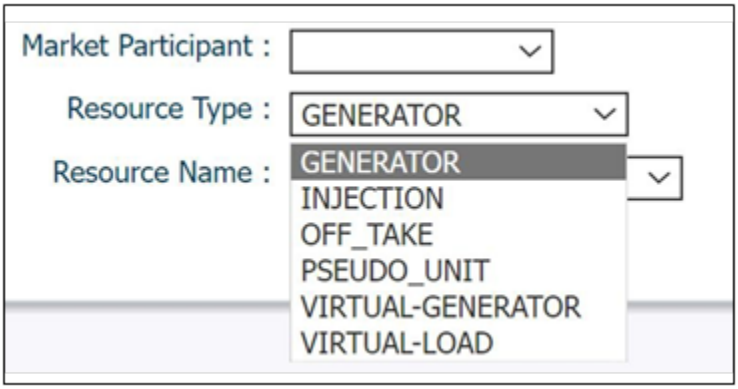
4. If retrieving a standing offer, select the **Standing Day Type**. If the standing offer is for all days of the week, select **ALL**. Otherwise, select the appropriate day of the week to which the standing offer applies.



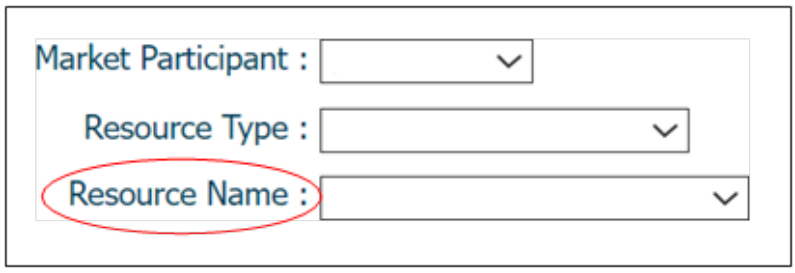
Note: If data has previously been retrieved for another resource on this screen, the **Expiry Date** field needs to be cleared or the matching **Expiry Date** will need to be inputted for the resource data is being retrieved for.

5. Click the drop-down next to **Market Participant** to see a list of the market participants the user is authorized to enter dispatch data on behalf of.

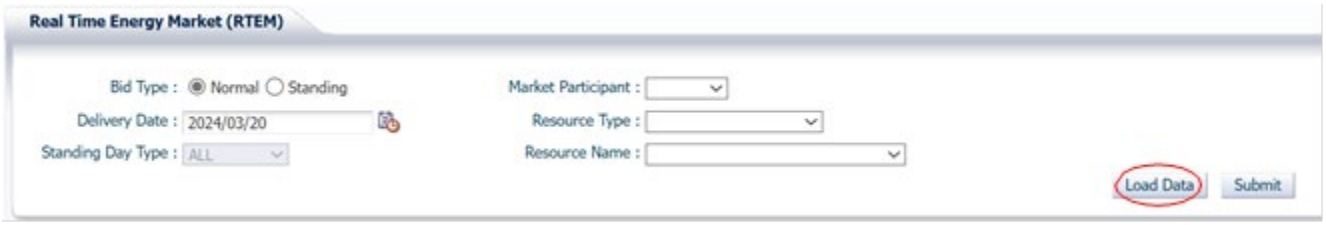
Choose the **Market Participant** associated with the energy offer desired to be retrieved then click the drop- down next to **Resource Type** and select either **GENERATOR, PSEUDO_UNIT or VIRTUAL- GENERATOR**, as required.



6. Click the drop-down next to **Resource Name** and select the resource that is associated with the offer to be retrieved.



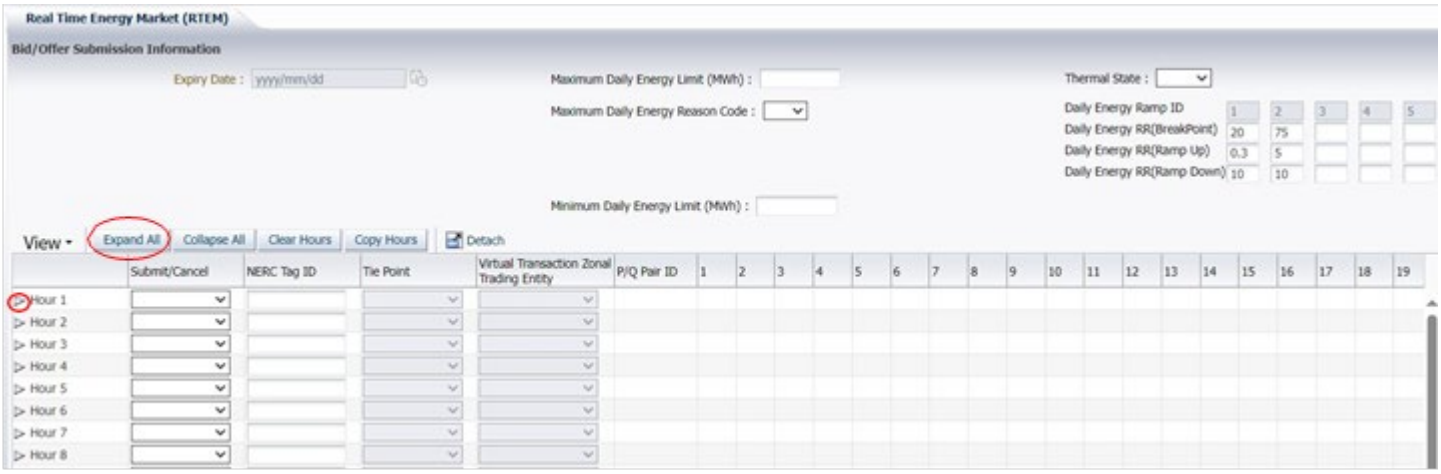
7. Click **Load Data** to populate the screen with the data from the offer being retrieved.



4.2 Revising an Energy Offer

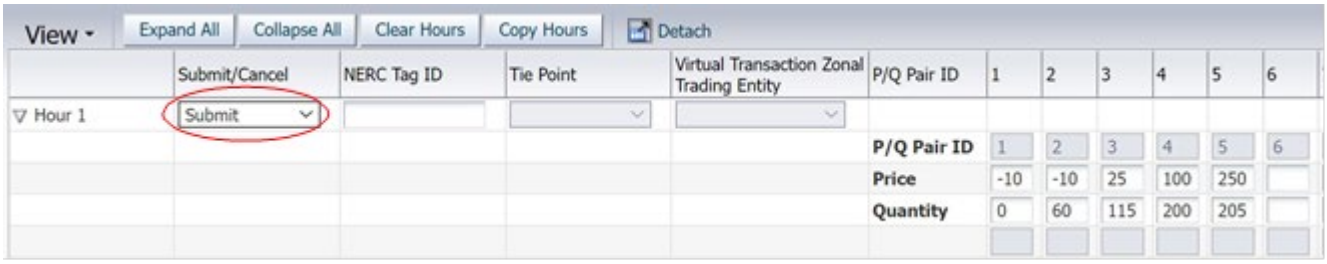
Once the offer has been retrieved the data can be revised as necessary. Below is an example of what will be seen after clicking **Load Data**.

Click **Expand All** to see the submission section for every hour. Alternatively, click the triangle next to the **Hour** number to expand any individual hours.



To revise the offer, follow these steps:

1. Ensure the **Delivery Date** represents the dispatch day of the offer being revised.
2. Select **Submit** from the drop-down next to the hour number for the hours being revised.



Revising a portion of the offer and canceling a portion of the offer, can be done in the same submission. Simply select **Cancel** for the hours to be canceled and follow the steps outlined in Section 4.3, Cancelling an Energy Offer.

3. Edit the price-quantity pairs and other dispatch data as required.

4. Select the appropriate **Reason Code** from the drop-down.

The following table defines the various reason codes available.

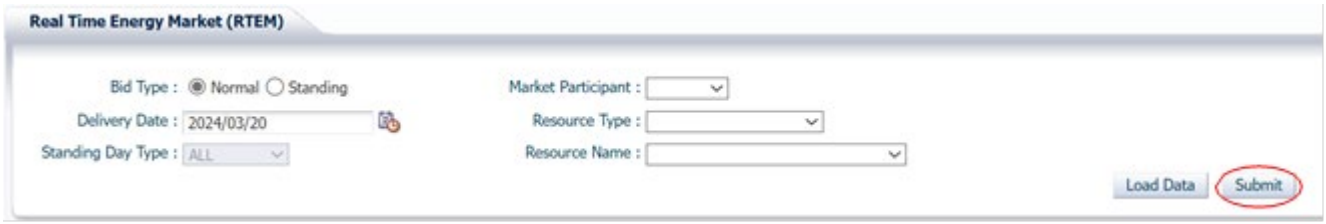
Table 1 | Reason Codes for Revising Offers[1]

Reason Code	Description
FO	Forced Outage
FD	Forced Derating
FO-ST	*Forced Outage* on Steam Turbine of Pseudo-unit
ERPO	Early Return from Planned Outage
LRPO	Late Return from Planned Outage
MPM-EORLI	Market Power Mitigation Energy Offer Reference Level Increase
WITHDRAW	Withdrawal from a commitment for equipment issues and failure
OTHER	Complete the **Other Reason** field

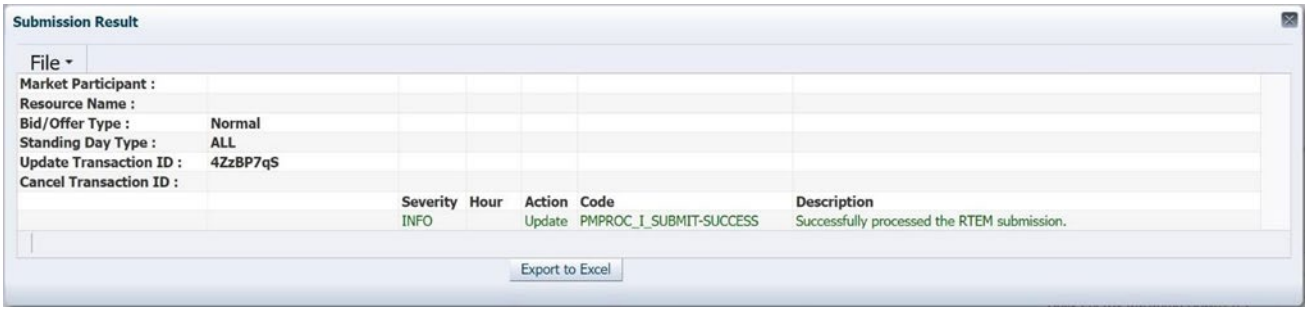
[1] Refer to MM 4.1 Appendix B for the conditions under which a reason code is required, and additional information and requirements for each condition.

If **OTHER**, is selected the **Other Reason** field must be completed. This is a free text field to enter a reason using up to 128 characters.

5. Repeat this process for each hour requiring a reason.
6. Click **Submit** to send the revised offer to the IESO.



7. A pop-up will appear within a few moments of submitting the revised offer, displaying the status of the offer. Review the **Submission Result** screen to ensure that the submissions for all hours have been successfully updated and applied. Please note that while not applicable to **Normal** offers, **Standing Day Type** will return **ALL** in the output file due to default settings.



8. Click **Export to Excel** to produce a spreadsheet of the **Submission Result** screen, or take a screen print and/or record the **Update Transaction ID** number. The **Submission Result** screen cannot be retrieved again.

A sample Excel export is included below:

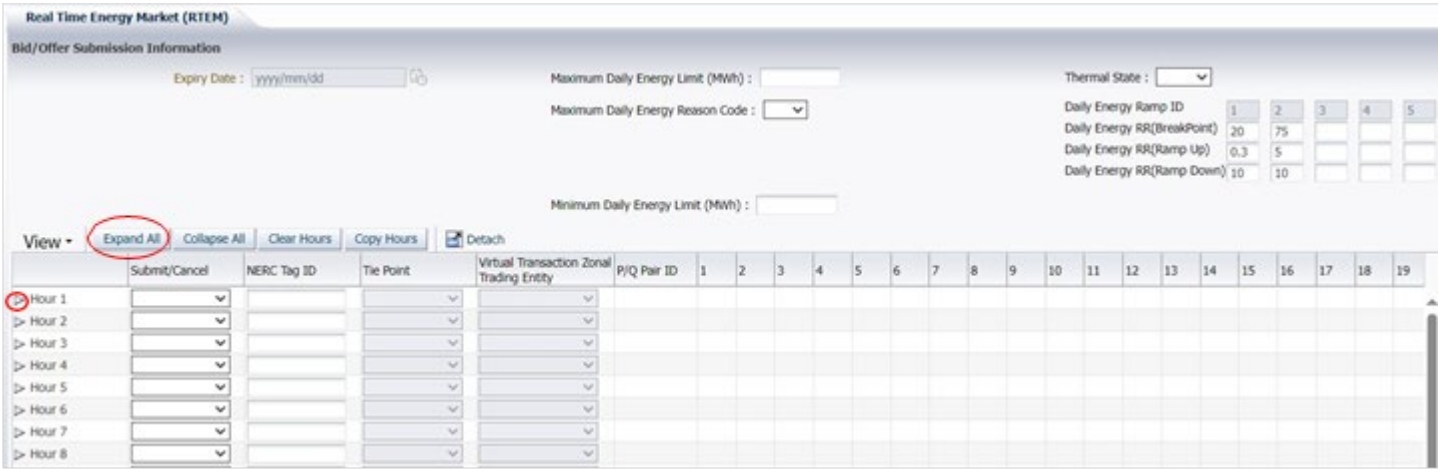
Market Participant :						
Resource Name :						
Bid/Offer Type :	Normal					
Standing Day Type :	ALL					
Update Transaction ID :	4ZzBP7qS					
Cancel Transaction ID :						
		Severity	Hour	Action	Code	Description
		INFO		Update	PMPROC_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.

9. Review the day-ahead, pre-dispatch and 5-minute reports, as applicable, to see which of offers have been scheduled.

4.3 Cancelling an Energy Offer

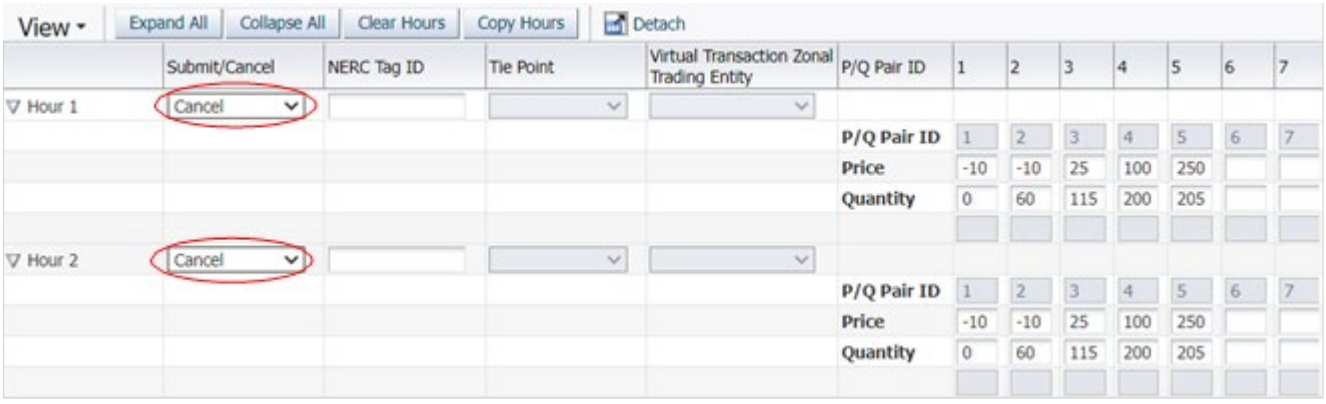
Once the offer has been retrieved, the data can be canceled as necessary. Below is an example of what will be seen after clicking **Load Data** to retrieve the offer.

Click **Expand All** to see the price-quantity pairs and other dispatch data for every hour. Alternatively, click the triangle next to the **Hour** number to expand any individual hours.



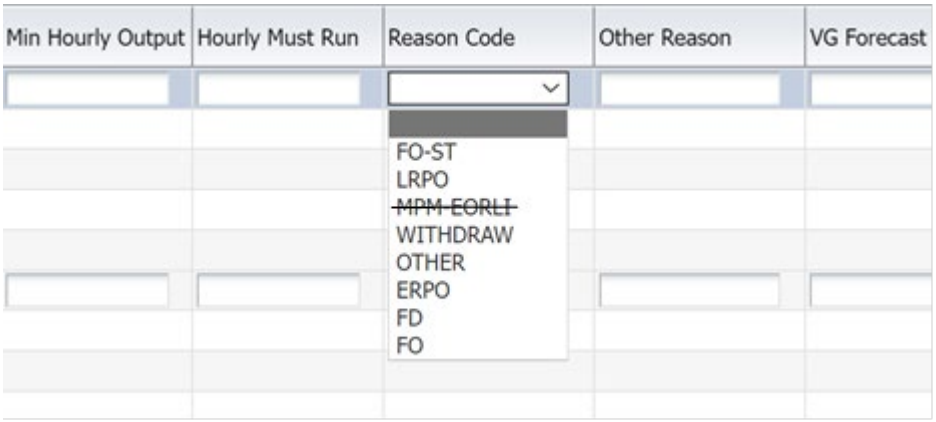
To cancel the offer, follow these steps:

1. Ensure the **Delivery Date** represents the date of the offer to cancel.
2. Select **Cancel** from the drop-down next to the hour number for the hours that to be cancelled. Use **Copy Hours** after selecting **Cancel** for one hour to copy that selection for every hour to be canceled or for all hours to cancel the entire offer.



A portion of the offer can be revised and canceled in the same submission. Simply select **Submit** for the hours to be revised and then follow the steps outlined in Section 4.2, Revising an Energy Offer.

3. Select the appropriate **Reason Code** using the drop-down. The following reason code, MPM-EORLI, is not valid for cancellations, only for revisions.



The following table defines the various reason codes available.

Table 2 | Reason Codes for Cancelling Offers[2]

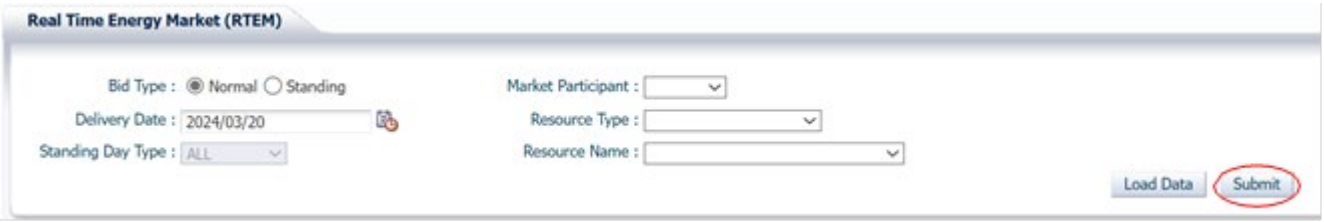
Reason Code	Description
FO	*Forced Outage*
FD	Forced Derating
FO-ST	*Forced Outage* on Steam Turbine of *Pseudo-unit*
ERPO	Early Return from *Planned Outage*
LRPO	Late Return from *Planned Outage*
WITHDRAW	Withdrawal from a commitment for equipment issues and failure
OTHER	Complete the **Other Reason** field

If **OTHER** is selected, the **Other Reason** field is selected. This is a free text field to type in the reason up to 128 characters.

4. Repeat this process for each hour requiring a reason.

[2] Refer to MM 4.1 Appendix B for the conditions under which a reason code is required, and additional information and requirements for each condition.

5. Click **Submit** to send the cancelled offer to the IESO.



6. A pop-up will appear within a few moments of submitting the cancelled offer displaying the status of the offer. Review the **Submission Result** screen to ensure that the offers for all applicable hours have been successfully cancelled. Please note that while not applicable to **Normal** offers, **Standing Day Type** will return **ALL** in the output file due to default settings.

7. Click **Export to Excel** to produce a spreadsheet of the **Submission Result** screen or take a screen print and/or record the **Cancel Transaction ID** number. The **Submission Result** screen cannot be retrieved again.

A sample Excel export is included below:

Market Participant :						
Resource Name :						
Bid/Offer Type :	Normal					
Standing Day Type :	ALL					
Update Transaction ID :						
Cancel Transaction ID :	4wbBP7qp					
		Severity	Hour	Action	Code	Description
		INFO		Cancel	PMPROC_I_CANCEL-SUCCESS	Successfully processed the RTEM cancellation.

8. Review the day-ahead, pre-dispatch and 5-minute reports, as applicable, to see which offers have been scheduled.

5. Appendix A: Rules for Price/Quantity Pairs

5.1 Price/Quantity Pairs

In the Day-Ahead and Real-time Energy Markets, offers are submitted in price/quantity pairs. A price/quantity pair specifies the amount of energy offered for a given hour. The price listed is the lowest price that the MP will accept for the energy offered. MPs may submit sets of price/quantity pairs for any or all hours of the dispatch day.

Offers are submitted separately for each facility. An MP may submit only one energy offer for each registered facility for any dispatch hour, but each energy offer may contain up to 20 price/quantity pairs.

See Market Manual 4:1 Submitting Dispatch Data in the Physical Markets for more information.

5.2 Rules for Offers: Price

The price must not decrease as the quantity increases.

The price in each price/quantity pair cannot be greater than Maximum Market Clearing Price + $2,000 (MMCP), nor lower than negative Maximum Market Clearing Price - $2,000.

5.3 Rules for Offers: Quantity

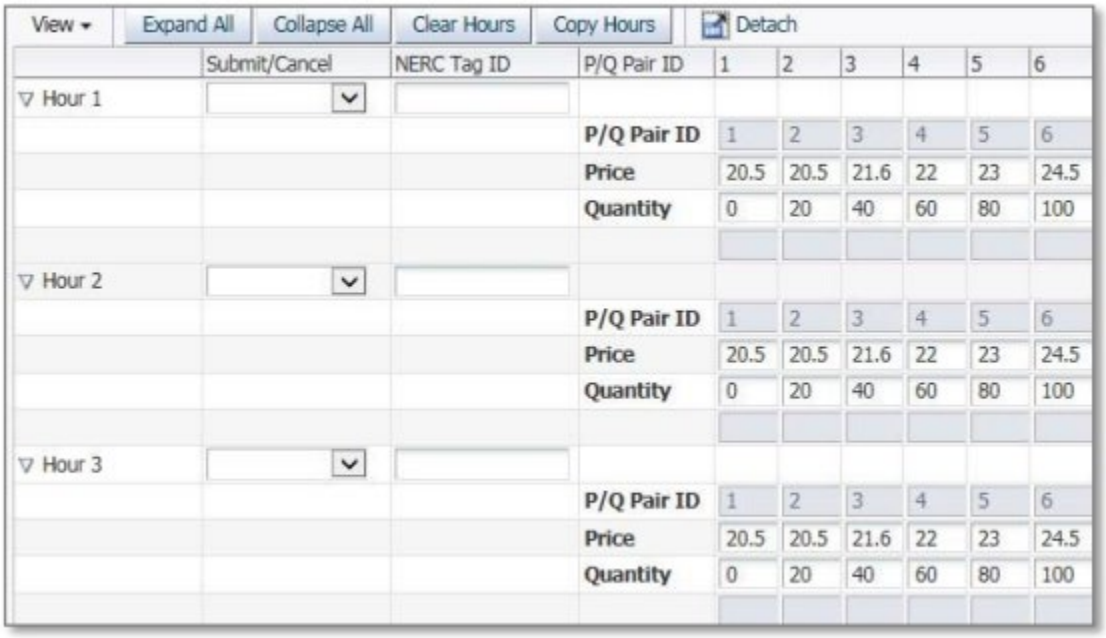
The largest quantity in an energy offer cannot be greater than:

- The maximum output of energy in an hour for the facility, according to facility registration information.
- The maximum quantity of energy that can be taken in the dispatch hour, as estimated by the registered market participant for the facility.
- The maximum allowed injection in the dispatch hour through the relevant connection point. This quantity is limited by the following:
    - The capacity of any radial line connecting the registered facility to the connection point,
    - The maximum injection as specified in the connection agreement,
    - The maximum injection permitted by the relevant transmitter.
        - Each offer must contain at least two price/quantity pairs.
        - The first price/quantity pair always shows a quantity of zero, with an associated price. The second price/quantity pair always shows a quantity greater than zero (0) as well as the same price as included with the first price/quantity pair.

Note: As per Market Rule Ch. 7 sec. 3.5.5.7 for a Non-Quick Start resource a PQ pair must be submitted at a quantity that is equal to its MLP.

5.4 Example of Offer Price/Quantity Pairs

Consider the following example:



In this example, the first two price/quantity pairs for Hours 1-3 are (20.5, 0) and (20.5, 20). This means that from 0 to 20 MW, energy is offered at $20.50/MW.

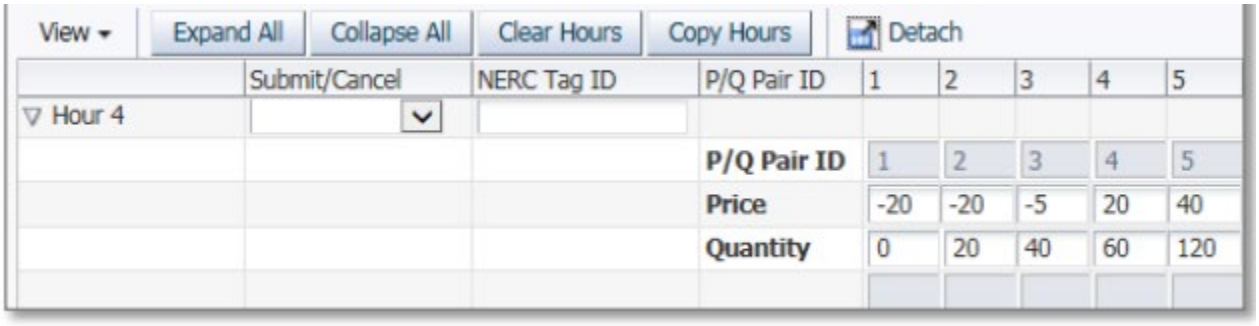
The remaining price/quantity pairs in the example are interpreted as follows:

- The offer from 20 to 40 MW is $21.60/MW
- The offer from 40 to 60 MW is $22.00/MW
- The offer from 60 to 80 MW is $23.00/MW
- The offer from 80 to 100 MW is $24.50/MW

5.5 Negative Prices

MPs may submit a negative price in their offer. A negative price means they are willing to pay up to that price for each MW of energy injected, rather than reduce their output. It may be more economical in the longer term for an MP to maintain a particular output for a short period, even at a loss.

For example, an offer may look like this



This offer indicates that for hour 4, the MP is willing to pay $20/MW to inject up to 20 MW, and $5/MW for each additional MW, up to 40 MW.

The remaining price/quantity pairs are positive. This indicates that at this point it is more cost effective for the MP to shut down than to pay to inject additional energy.

Negative prices may not be less than negative Maximum Market Clearing Price (MMCP).

6. Appendix B: Revising and Cancelling Offer Rules

6.1 Normal/Houry Offers

Normal/hourly Offers can be revised, keeping in mind the restrictions in place for the Day- Ahead Market (DAM), the 2-hour mandatory window and the close of the mandatory window.

Refer to Market Manual 4.1: Submitting Dispatch Data in the Physical Markets – Section 7 Submitting Dispatch Data, for information on restrictions that apply to the submission of dispatch data during the DAM (10:00 EPT to 13:30 EPT).

Unrestricted Window

After 13:30 EPT, MPs 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 Market Manual 4.1, until two hours prior to the dispatch hour for which the dispatch data or revision is being submitted. This is referred to as the unrestricted window.

Mandatory Window

2 Hours before the dispatch hour is referred to as the Mandatory window. During the 2-hour mandatory window, if the amount to be injected differs from the quantity expected to be delivered by more than the greater of 2% or 10 MW, the MP is required to inform the IESO (call the Control Room) promptly.

Refer to Market Manual 4.1 for details on the mandatory window.

Close of the Mandatory Window

10 minutes before the dispatch hour is referred to as the close of the mandatory window. During the close of the mandatory window MPs cannot make any changes to their offers, so if the MP's ability to materially meet their offer changes within this window, they must notify the IESO (call the Control Room) promptly.

MPs must submit Revised Offers for future hours if the ability to produce is expected to continue to fall short of their current offer.

Reliability of the IESO-controlled Grid

If the IESO determines that a revision to offer data will not allow it to maintain the reliability of the IESO-controlled grid, the IESO may refuse to accept a revision, or it may direct dispatchable generators to submit revisions.

6.2 Standing Offers

A Standing Offer can be updated; the new Standing Offer supersedes the previous submission. Be aware of when a revised Standing Offer will take effect. See the definition of a standing offer in Section 3.1 of this document for an example of when a Standing Offer converts to a Normal Offer.

7. Additional Resources

Training resources can be found on the Marketplace Training and Participant Tool Training web pages:

Workbooks

- Introduction to Ontario's Physical Markets
- Introduction to the IESO Settlement Process
- Interjurisdictional Energy Trading
- Revenue Metering

Participant Tool Guides

- Submitting, Revising and Cancelling Import Offers and Export

Market Rules & Manuals

- Market Rules Chapter 7 System Operations and Physical Markets
- Market Manual 4: Market Operations, Part 4.1: Submitting Dispatch Data in the Physical Markets

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