

Energy Market Interface

Submitting, Revising and Cancelling Import Offers and Export Bids

IESO Training
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This training manual 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 training manual 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 training manual, even if such obligations are not specifically referred to herein. While every effort has been made to ensure the provisions of this training manual 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 import offers and export bids using the Energy Market Interface (EMI).

This guide is mainly aimed at market participants who are importers and exporters in the physical market.

Participants in the Ontario physical markets use the EMI to do the following actions:

- Submit, review and revise bids and offers
- Submit, review and revise import offers and export bids
- Submit, review and revise schedules and forecasts
- Receive market notices issued by the IESO
- Submit, review and revise physical bilateral contract data

1.1 Terms

Whenever possible, this document uses terms as defined in the market rules and market manuals. To avoid confusion, we are including a few definitions:

Dispatch Day

The dispatch day is the actual day you are 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.

Standing Bid/Offer

A bid/offer you expect to be the same from day to day, or week to week. For example, you may submit a bid/offer that is the same for every Wednesday. If you enter it as a standing bid/offer, you only have to submit it once. The system will then ensure that an Initial or Daily bid/offer is submitted for every Wednesday thereafter as per your submitted information.

Initial (or Daily) Bid/Offer

A bid/offer you submit for any or all hours of one day. In this document we refer to bids or offers submitted from 6:00 am on the pre-dispatch day up until ten minutes prior to the dispatch hour as “daily” bids or offers. If you change your daily bid/offer, you must follow revision rules, and your changed bid/offer is sometimes referred to as your “revised” offer.

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

Note: Restrictions apply to bids/offers submitted after two (2) hours prior to the dispatch hour. See Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information.

Tie Point ID and Tie Line ID

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

Day-Ahead Commitment Process (DACP)

The Day-Ahead Commitment Process has specific timeline requirements for submitting and revising dispatch data. For complete details on DACP timelines, please refer to the DACP Market Manuals available on the [Market Rules and Manuals Library](#) web page.

– End of Section –

2. Accessing EMI

The Energy Market Interface (EMI) is the market participant interface with Ontario's physical energy markets. The EMI is used for:

- Participating in the Real-time Energy and Operating Reserve Markets: Submitting, reviewing and revising dispatch data (i.e., offers, bids, schedules, forecasts)
- Participating in inter-jurisdictional energy trading: submitting, reviewing and revising import offers and export bids
- Submitting, reviewing and revising physical bilateral contract data To access the EMI, complete the following steps:

1. Open the EMI URL (<https://emi.ieso.ca>).
2. Enter your IESO User Account Name (the same user account name used to access the IESO Portal) and click Continue.



The screenshot shows the IESO EMI login page. At the top right, there is a link: "Return to IESO Portal Welcome Page". The IESO logo and tagline "Power to Ontario. On Demand." are on the left. The main heading is "Sign In with User Account Name and Password". Below it, the instruction "Enter your User Account Name." is followed by a text input field labeled "User Account Name:" and a "Continue" button. To the right, there are two sections: "Forgot your password?" with instructions to enter the user ID and click the forgot password link, and "Not a registered user?" with instructions to ask the Organization's Rights Administrator to register. A link for "Other questions?" is also present. At the bottom, there is a disclaimer for Market Participants and a copyright notice: "Copyright IESO 2013; Contact the IESO Portal Administrator for technical questions or feedback."

3. Enter your password then click enter.



Result: 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 financial and physical markets.

Market Hour	Start of Initial Window	Start of Mandatory Window	Start of Closed Window
2016/04/01 00	2016/03/31 06:00	2016/03/31 22:00	2016/03/31 23:50
2016/04/01 01	2016/03/31 06:00	2016/03/31 23:00	2016/04/01 00:50
2016/04/01 02	2016/03/31 06:00	2016/04/01 00:00	2016/04/01 01:50
2016/04/01 03	2016/03/31 06:00	2016/04/01 01:00	2016/04/01 02:50
2016/04/01 04	2016/03/31 06:00	2016/04/01 02:00	2016/04/01 03:50
2016/04/01 05	2016/03/31 06:00	2016/04/01 03:00	2016/04/01 04:50
2016/04/01 06	2016/03/31 06:00	2016/04/01 04:00	2016/04/01 05:50
2016/04/01 07	2016/03/31 06:00	2016/04/01 05:00	2016/04/01 06:50
2016/04/01 08	2016/03/31 06:00	2016/04/01 06:00	2016/04/01 07:50
2016/04/01 09	2016/03/31 06:00	2016/04/01 07:00	2016/04/01 08:50
2016/04/01 10	2016/03/31 06:00	2016/04/01 08:00	2016/04/01 09:50
2016/04/01 11	2016/03/31 06:00	2016/04/01 09:00	2016/04/01 10:50
2016/04/01 12	2016/03/31 06:00	2016/04/01 10:00	2016/04/01 11:50
2016/04/01 13	2016/03/31 06:00	2016/04/01 11:00	2016/04/01 12:50
2016/04/01 14	2016/03/31 06:00	2016/04/01 12:00	2016/04/01 13:50
2016/04/01 15	2016/03/31 06:00	2016/04/01 13:00	2016/04/01 14:50
2016/04/01 16	2016/03/31 06:00	2016/04/01 14:00	2016/04/01 15:50
2016/04/01 17	2016/03/31 06:00	2016/04/01 15:00	2016/04/01 16:50
2016/04/01 18	2016/03/31 06:00	2016/04/01 16:00	2016/04/01 17:50
2016/04/01 19	2016/03/31 06:00	2016/04/01 17:00	2016/04/01 18:50
2016/04/01 20	2016/03/31 06:00	2016/04/01 18:00	2016/04/01 19:50
2016/04/01 21	2016/03/31 06:00	2016/04/01 19:00	2016/04/01 20:50
2016/04/01 22	2016/03/31 06:00	2016/04/01 20:00	2016/04/01 21:50
2016/04/01 23	2016/03/31 06:00	2016/04/01 21:00	2016/04/01 22:50
2016/04/02 00	2016/04/01 06:00	2016/04/01 22:00	2016/04/01 23:50
2016/04/02 01	2016/04/01 06:00	2016/04/01 23:00	2016/04/02 00:50
2016/04/02 02	2016/04/01 06:00	2016/04/02 00:00	2016/04/02 01:50
2016/04/02 03	2016/04/01 06:00	2016/04/02 01:00	2016/04/02 02:50
2016/04/02 04	2016/04/01 06:00	2016/04/02 02:00	2016/04/02 03:50
2016/04/02 05	2016/04/01 06:00	2016/04/02 03:00	2016/04/02 04:50
2016/04/02 06	2016/04/01 06:00	2016/04/02 04:00	2016/04/02 05:50
2016/04/02 07	2016/04/01 06:00	2016/04/02 05:00	2016/04/02 06:50

3. Import Offers and Export Bids

Import offers and export bids are submitted using the EMI in much the same way that offers from Ontario generators and bids from dispatchable loads are submitted. Import offers and export bids must include the following information:

- Boundary entity resource ID,
- Tie line ID, and
- NERC tag.

See Appendix A: Boundary Entities and Boundary Entity Resources for more information on boundary entities and boundary entity resources.

3.1 Import Offer and Export Bid Terms and Timelines

You must follow the required timelines for your import offers and export bids.

There are three types of import offers/export bids you may submit and each have associated timeline rules:

- Initial (or Daily) Offers/Bids,
- Standing Offers/Bids, and
- Revised Offers/Bids.

In order to discuss the timeline rules, we must first define several terms:

Dispatch Day or Trade Day

The actual trading day, called Delivery Date in the EMI.

Pre-dispatch Day

The day immediately prior to the dispatch (trade) day.

Initial (or Daily) Bid/Offer

Also called **Normal** in the EMI, this is an offer/bid submitted from 6:00 am on the pre- dispatch day up until 60 minutes prior to the dispatch hour.

Offers submitted within two hours of the dispatch hour require IESO approval. See Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information.

Keep in mind that under DACP, offers and bids must be submitted by 10:00 am on the pre-dispatch day to participate on the dispatch day. Please refer to the DACP Market Manuals available on the [Market Rules and Manuals Library](#) web page for complete details.

Standing Bid/Offer

A standing bid/offer is a bid or offer you expect to be the same from day to day, or week to week. Submitting a Standing Bid/Offer ensures that there is always a bid or offer in the market, and it also decreases the amount of time spent on submissions.

Standing Bids and Offers are converted to Daily Bids and Offers once a day at 6:00 am on the pre-dispatch day. For example, at 6:00 am on Monday, Standing Offers become Daily Offers for Tuesday.

Standing Bids and Offers only take effect after it has been converted to Daily Bids and Offers. For example:

- If you submit a Standing Offer for all days of the week after 6:00 am on Monday, the offer will convert to a Daily Offer at 6:00 am on Tuesday to be effective for the trade date of Wednesday.

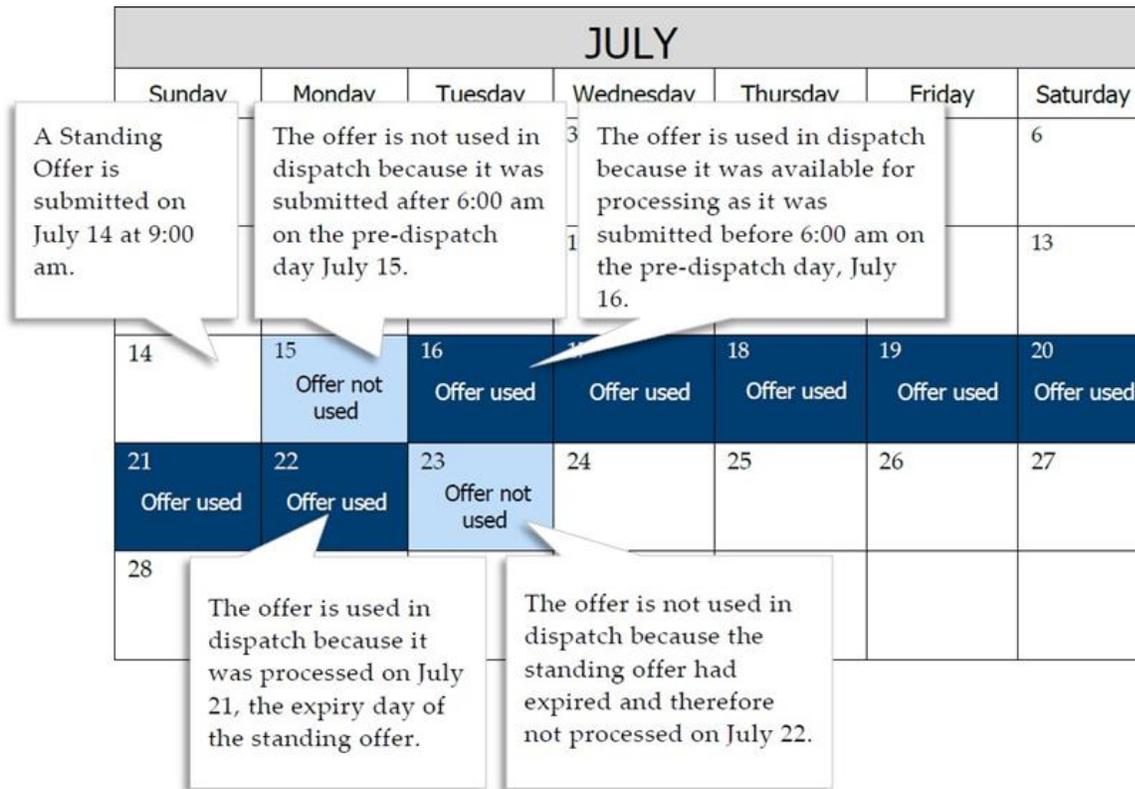
Remember: Standing Offers are converted to Daily Offers for the NEXT day at 6:00 am.

- If you submit the same Standing Offer before 6:00 am on Monday, it will be available for the 6:00 am 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

You wish to submit a standing offer to be used for July 16, 17, 18, 19, 20, 21 and 22. Therefore, you must submit your standing offer before 6:00 am on July 14, with an expiry date of July 21. In this case, at 9:00 am on July 14, you submit a standing offer for all days, with an expiry date of July 21. You would leave the Delivery date field at the default setting.



Revising or Cancelling Bids/Offers

Both Standing Offers/Bids and Daily Offers/Bids may be revised according to the rules for revising offers. See Section Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information.

Expiry Date

If you wish, you may include an expiry date with a Standing Offer/Bid. **The expiry date is the last date the offer will be converted to a Daily Offer/Bid.**

Remember, the conversion takes place on the pre-dispatch day. For example, if you enter an expiry date of July 28, your offer will be converted to a Daily Offer/Bid at 6:00 am on July 28, and will be considered in the pre-dispatch schedule and dispatch schedule for the trade day of July 29.

3.2 Preparing Import Offers and Export Bids – Daily or Standing

The following instructions apply to preparing a Daily Import Offer/Export Bid or a Standing Import Offer/Export Bid using the EMI. See Section 4, Revising and Cancelling Import Offers, for information on revising or cancelling a previously submitted offer/bid.

To submit an import offer or export bid, complete the following steps:

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

Market Hour	Start of Initial Window	Start of Mandatory Window	Start of Closed Window
2016/04/01 00	2016/03/31 06:00	2016/03/31 22:00	2016/03/31 23:50
2016/04/01 01	2016/03/31 06:00	2016/03/31 23:00	2016/04/01 00:50
2016/04/01 02	2016/03/31 06:00	2016/04/01 00:00	2016/04/01 01:50
2016/04/01 03	2016/03/31 06:00	2016/04/01 01:00	2016/04/01 02:50
2016/04/01 04	2016/03/31 06:00	2016/04/01 02:00	2016/04/01 03:50
2016/04/01 05	2016/03/31 06:00	2016/04/01 03:00	2016/04/01 04:50
2016/04/01 06	2016/03/31 06:00	2016/04/01 04:00	2016/04/01 05:50
2016/04/01 07	2016/03/31 06:00	2016/04/01 05:00	2016/04/01 06:50
2016/04/01 08	2016/03/31 06:00	2016/04/01 06:00	2016/04/01 07:50
2016/04/01 09	2016/03/31 06:00	2016/04/01 07:00	2016/04/01 08:50
2016/04/01 10	2016/03/31 06:00	2016/04/01 08:00	2016/04/01 09:50
2016/04/01 11	2016/03/31 06:00	2016/04/01 09:00	2016/04/01 10:50
2016/04/01 12	2016/03/31 06:00	2016/04/01 10:00	2016/04/01 11:50
2016/04/01 13	2016/03/31 06:00	2016/04/01 11:00	2016/04/01 12:50
2016/04/01 14	2016/03/31 06:00	2016/04/01 12:00	2016/04/01 13:50
2016/04/01 15	2016/03/31 06:00	2016/04/01 13:00	2016/04/01 14:50
2016/04/01 16	2016/03/31 06:00	2016/04/01 14:00	2016/04/01 15:50
2016/04/01 17	2016/03/31 06:00	2016/04/01 15:00	2016/04/01 16:50
2016/04/01 18	2016/03/31 06:00	2016/04/01 16:00	2016/04/01 17:50
2016/04/01 19	2016/03/31 06:00	2016/04/01 17:00	2016/04/01 18:50
2016/04/01 20	2016/03/31 06:00	2016/04/01 18:00	2016/04/01 19:50
2016/04/01 21	2016/03/31 06:00	2016/04/01 19:00	2016/04/01 20:50
2016/04/01 22	2016/03/31 06:00	2016/04/01 20:00	2016/04/01 21:50
2016/04/01 23	2016/03/31 06:00	2016/04/01 21:00	2016/04/01 22:50
2016/04/02 00	2016/04/01 06:00	2016/04/01 22:00	2016/04/02 00:50
2016/04/02 01	2016/04/01 06:00	2016/04/01 23:00	2016/04/02 01:50
2016/04/02 02	2016/04/01 06:00	2016/04/02 00:00	2016/04/02 02:50
2016/04/02 03	2016/04/01 06:00	2016/04/02 01:00	2016/04/02 03:50
2016/04/02 04	2016/04/01 06:00	2016/04/02 02:00	2016/04/02 04:50
2016/04/02 05	2016/04/01 06:00	2016/04/02 03:00	2016/04/02 05:50
2016/04/02 06	2016/04/01 06:00	2016/04/02 04:00	2016/04/02 06:50
2016/04/02 07	2016/04/01 06:00	2016/04/02 05:00	2016/04/02 07:50

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

Note: In EMI, Normal refers to Initial (Daily) Bids/Offers



Real Time Energy Market (RTEM)

Bid Type : Normal Standing

Delivery date : 2016/04/04

Standing Day Type :

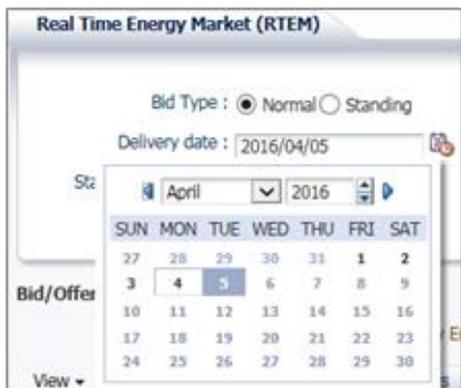
Market Participant :

Resource Type :

Resource Name :

3. If you are submitting a Normal offer/bid, select the Delivery date. For Standing offers/bids, this field is not required and is therefore not selectable.

The **Delivery date** defaults to the current trading date. If your offer is for the next trading date, click the Calendar icon and select the appropriate date from the calendar. The remaining highlighted dates in the calendar are only used when submitting bilateral contract data.



Real Time Energy Market (RTEM)

Bid Type : Normal Standing

Delivery date : 2016/04/05

St: April 2016

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

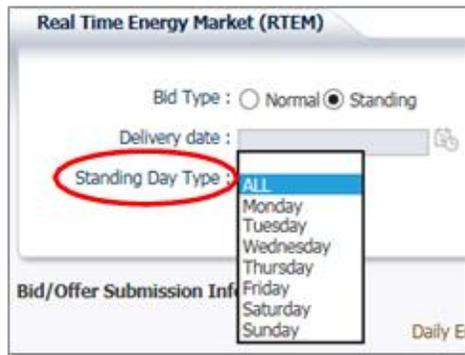
Bid/offer

View

If you select the **Delivery date** after having already selected the Resource Type, and Resource Name, you may have to select the correct Resource Type and Resource Name again. EMI Workspace changes the Resource Type and Resource Name lists based on the **Delivery date**.

- If you are submitting a Standing offer/bid, select the **Standing Day Type**. If your Standing offer/bid is for all days of the week, select **ALL**. Otherwise, select the day of the week to which the Standing offer/bid applies.

Note: See Section 3.1, Import Offer and Export Bid Terms and Timelines, on Page 5 for more information about Standing offer/bid timelines.



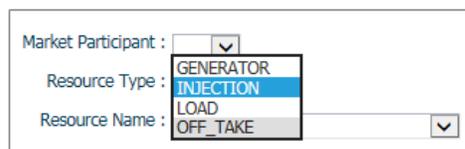
The screenshot shows the 'Real Time Energy Market (RTEM)' interface. At the top, there are radio buttons for 'Bid Type': 'Normal' and 'Standing' (which is selected). Below this is a 'Delivery date' field. A dropdown menu labeled 'Standing Day Type' is open, showing options: 'ALL', 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', and 'Sunday'. The 'ALL' option is highlighted in blue. A red circle highlights the 'Standing Day Type' label and the dropdown menu.

- Click the drop down next to **Market Participant** to see a list of the market participants on whose behalf you are authorized to enter dispatch data (e.g., offers, bids, schedules, etc.).

Choose the Market Participant for which you wish to enter an import offer or export bid.

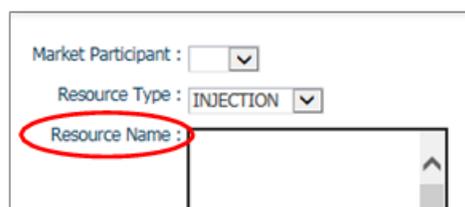
- Importers:** Click the drop-down next to **Resource Type** and select **INJECTION**.

Exporters: Click the drop-down next to **Resource Type** and select **OFF_TAKE**.



The screenshot shows a form with three fields: 'Market Participant', 'Resource Type', and 'Resource Name'. The 'Resource Type' dropdown menu is open, showing options: 'GENERATOR', 'INJECTION' (highlighted in blue), 'LOAD', and 'OFF_TAKE'. The 'Resource Name' field has a dropdown arrow next to it.

- Click the drop-down next to **Resource Name** and select the boundary entity resource for which you are submitting an import offer or export bid.

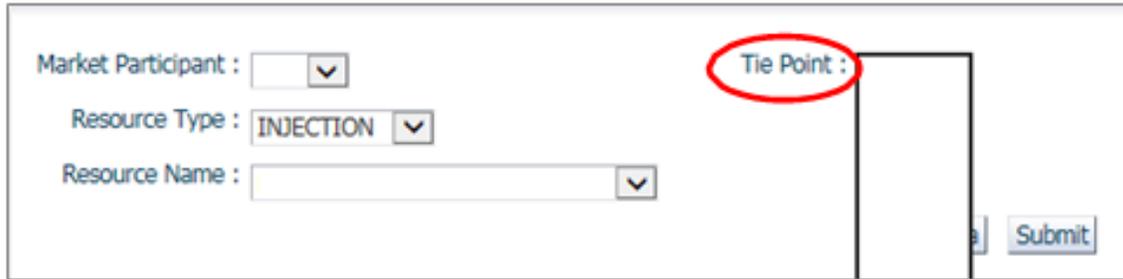


The screenshot shows the same form as the previous one, but now the 'Resource Name' dropdown menu is open. The 'Resource Name' label is circled in red. The dropdown menu is currently empty.

The **Resource Name** is the unique reference for a facility/boundary entity resource used when submitting bids and offers. It is also called the “Delivery Point” and is used as the point of settlement for the IESO’s physical markets.

3. Import Offers and Export Bids

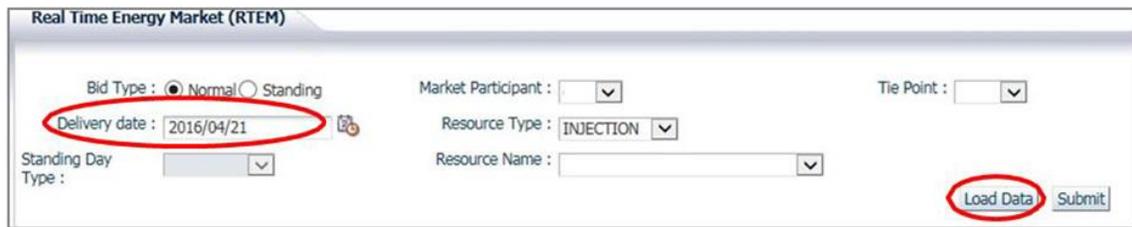
8. Select the four-letter **Tie Point** for your boundary entity resource from the drop-down.



Market Participant :
Resource Type : INJECTION
Resource Name :
Tie Point :

Optional Step:

Select a date that you have previously submitted an import offer/export bid for and then click Load Data to populate the screen with data from that existing data. The offer/bid data can then be modified to create a new offer or bid by then selecting the date you wish to submit an offer/bid for.



Real Time Energy Market (RTEM)
Bid Type : Normal Standing
Market Participant :
Tie Point :
Delivery date : 2016/04/21
Resource Type : INJECTION
Resource Name :
Standing Day Type :

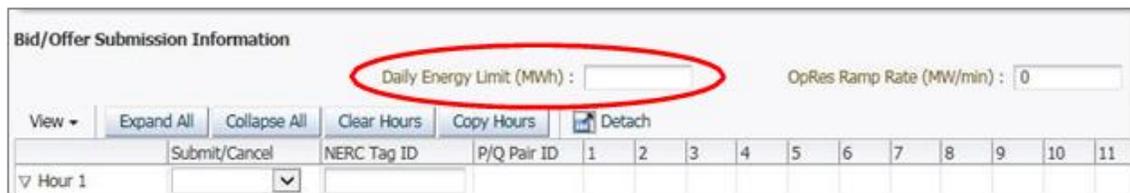
9. Proceed to Section 3.3, Submitting Price/Quantity Pairs, to complete the empty offer form.

3.3 Submitting Price/Quantity Pairs

To enter your import offer or export bid information, complete the following steps:

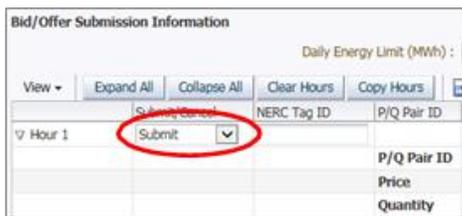
1. Do not enter a quantity in the Daily Energy Limit (MWh) field. Leave this field blank.
2. Enter **999.9** in the **OpRes Ramp Rate** field only if you plan to submit an operating reserve (OR) offer/bid along with your import offer or export bid.

Note: Ramp rates are not relevant to boundary entity resources but EMI Workspace requires a value in this field. No matter what value is entered, the system will default to 999.9 but you must enter a “dummy” ramp rate and it must be entered with the correct format: rounded to one decimal place.



The screenshot shows a web form titled "Bid/Offer Submission Information". At the top, there are two input fields: "Daily Energy Limit (MWh) : " and "OpRes Ramp Rate (MW/min) : 0". The "Daily Energy Limit" field is circled in red. Below these fields are several buttons: "View", "Expand All", "Collapse All", "Clear Hours", "Copy Hours", and "Detach". At the bottom, there is a table with columns for "Hour", "Submit/Cancel", "NERC Tag ID", "P/Q Pair ID", and hours 1 through 11. The "Hour 1" row has a dropdown menu with "Submit" selected, which is also circled in red.

3. Select **Submit** from the drop-down next to the hour number for the hour that you are submitting an import offer or export bid.



This is a close-up of the "Hour 1" row in the table from the previous screenshot. The "Submit/Cancel" dropdown menu is open, and the "Submit" option is circled in red.

The market software tools use the “hour ending” convention. I.e., Hour 1 is the first hour of the day; it 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.

4. Enter your **NERC tag ID** in the designated column for the hour that you are submitting an import offer or export bid.

Note: All transmission in Ontario is firm; the IESO recommends using 7-F (firm) when creating your NERC tag. If this is for a wheel-through, include WI at the beginning of the NERC tag for the import leg of the transaction, and WX at the beginning of the NERC tag for the export leg.

The screenshot shows the 'Bid/Offer Submission Information' interface. At the top, there are input fields for 'Daily Energy Limit (MWh):' and 'OpRes Ramp Rate (MW/min): 0'. Below these are buttons for 'View', 'Expand All', 'Collapse All', 'Clear Hours', 'Copy Hours', and 'Detach'. The main table has columns for 'Hour' (1-10), 'P/Q Pair ID' (1-10), 'Price', and 'Quantity'. The 'Hour 2' row is highlighted in blue, and a red circle is drawn around the expand triangle icon next to it.

- Click the triangle next to the Hour number to expand the Price and Quantity section, enabling you to enter up to 20 price/quantity pairs for each hour.

Or, click **Expand All** to reveal the price/quantity pair section for every hour. Clicking **Collapse All** will hide the price/quantity pair section for all hours.

- Enter the price in dollars and cents, up to two decimal places for each offer/bid. E.g., \$10 dollars may be entered as 10.00 or 10.0 or 10.
- Enter the quantity in whole megawatts (MW), with no decimal place, for each offer/bid.

See Appendix B: Rules for Price/Quantity Pairs for more information about price/quantity pairs.

- Enter at least one ramp rate set, including a **ramp rate breakpoint** and associated **ramp up** and **ramp down** values.

Note: Ramp rate sets are not relevant to boundary entity resources but EMI Workspace requires a value in these fields. No matter what values are entered, the system will default them to 999.9 but you must enter “dummy” ramp data and it must be entered with the correct format: rounded to one decimal place.

The screenshot shows the 'Bid/Offer Submission Information' interface with the 'Ramp Rate ID' section expanded. The 'Daily Energy Limit (MWh):' is 0 and 'OpRes Ramp Rate (MW/min):' is 999.9. The 'Hour 1' row is expanded, showing 'P/Q Pair ID' (1-20), 'Price', and 'Quantity'. A red circle is drawn around the 'Ramp Rate ID' section, which includes 'RR(Break Point)', 'RR(Ramp Up)', and 'RR(Ramp Down)', all with a value of 999.9.

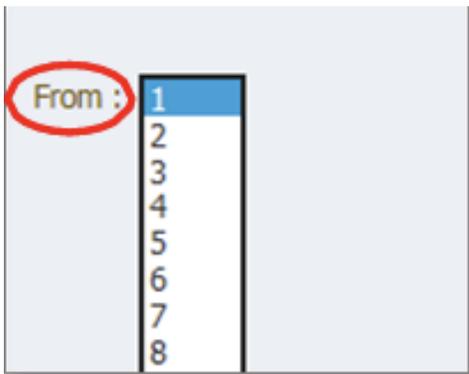
3.3.1 Entering the Same Offer/Bid for Multiple Hours

Copy Hours is an efficient way to copy the information from a chosen hour to other selected hours. Therefore if you submit the same hourly offer/bid information for multiple hours in a day, complete the steps below.

1. Click Copy Hours after completing your price/quantity pairs for a single hour.

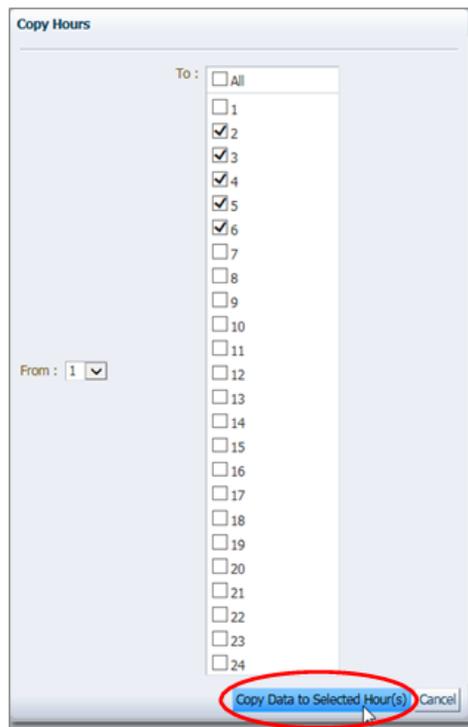


2. In the drop-down next to **From**, select the hour you wish to copy.

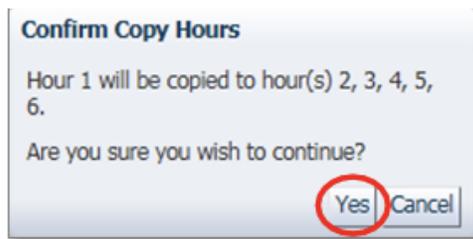


3. Import Offers and Export Bids

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



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



The price/quantity pairs are copied to the hours selected.

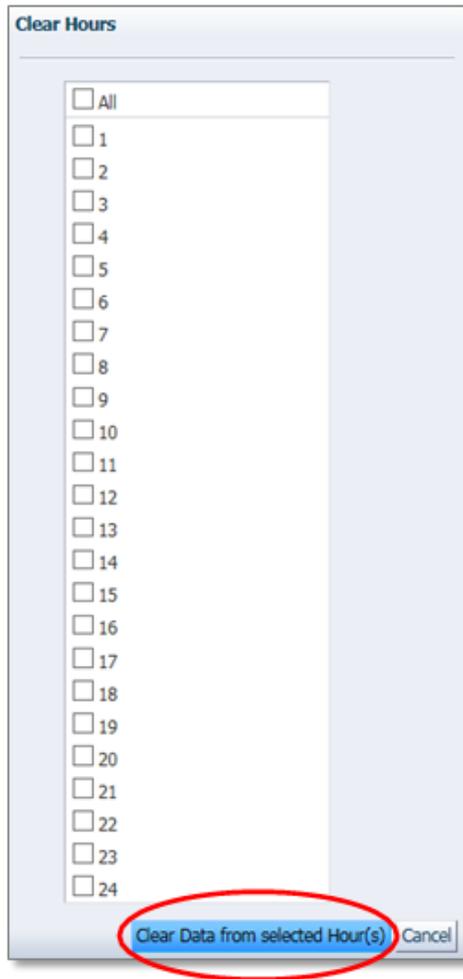
3.4 Clear Hours

Rather than deleting each price/quantity pair and other energy offer/bid data for any hour(s) or all hours, you can easily delete all offers using the Clear Hours button.

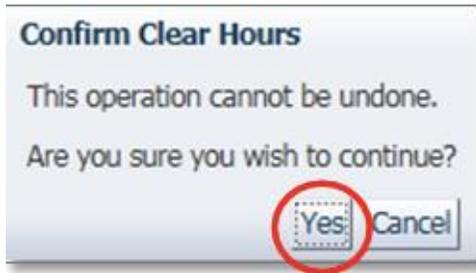
1. Click **Clear Hours** to remove all offer data for any hour(s) or all hours.



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



- Click Yes to proceed.



The price/quantity pairs, and other offer data, are cleared from the hours selected.

3.5 Submitting Your Import Offer or Export Bid

Once you have finished entering your price/quantity pairs for an established timeframe, you are ready to submit your import offer or export bid to the IESO. Complete the following steps to submit your import offer or export bid:

- Verify that the offer/bid information is correct and complete.
- Select **Submit** from the drop-down next to the hour number for the hours that you are submitting as part of your import offer or export bid.

Bid/Offer Submission Information		Daily Energy Limit (MWh) : 0					OpRes		
View	Expand All	Collapse All	Clear Hours	Copy Hours	Detach				
Hour 1	Submit	▼	NERC Tag ID	P/Q Pair ID	1	2	3	4	5
				P/Q Pair ID	1	2	3	4	5
				Price	-500	-500	50	100	150
				Quantity	0	75	100	110	120
Hour 2	Submit	▼							
				P/Q Pair ID	1	2	3	4	5
				Price	-500	-500	50	100	150
				Quantity	0	75	100	110	120

Otherwise, you may see the following error message when attempting to submit your offer/bid to the IESO:

- Click Submit to send your import offer or export bid to the IESO.

Real Time Energy Market (RTEM)

Bid Type: Normal Standing
 Delivery date: 2016/04/19
 Standing Day Type: [v]

Market Participant: [v]
 Resource Type: [v]
 Resource Name: [v]

Tie Point: [v]

Load Data: [v] **Submit**

Bid/Offer Submission Information

Daily Energy Limit (MWh): [0]
 OpRes Ramp Rate (MW/min): [0]

View: [Expand All] [Collapse All] [Clear Hours] [Copy Hours] [Detach]

Hour	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Ramp Rate ID	1	2				
Hour 1	Submit		P/Q Pair ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Ramp Rate ID	1	2				
			Price	-500	-500	50	100	150																	RR(Break Point)	40	50			
			Quantity	0	75	100	110	120																		RR(Ramp Up)	3	4		
																										RR(Ramp Down)	6	8		
Hour 2	Submit		P/Q Pair ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Ramp Rate ID	1	2				
			Price	-500	-500	50	100	150																		RR(Break Point)	40	50		
			Quantity	0	75	100	110	120																			RR(Ramp Up)	3	4	
																											RR(Ramp Down)	6	8	
Hour 3	Submit		P/Q Pair ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Ramp Rate ID	1	2				
			Price	-500	-500	50	100	150																			RR(Break Point)	40	50	
			Quantity	0	75	100	110	120																				RR(Ramp Up)	3	4
																											RR(Ramp Down)	6	8	

- You will receive a submission result within a few moments of submitting your offer or bid, displaying its status. **Review** the Submission Result screen to ensure that your import offers or export bids for all hours have been successfully updated and applied.

Submission Result

File -

Market Participant: [v]
 Resource Name: [v]
 Bid/Offer Type: Normal
 Standing Day Type: [v]
 Daily Energy Limit: 0.0
 OpRes Ramp Rate: [v]
 Update Transaction ID: WSuQYt11
 Cancel Transaction ID: [v]

Severity	Hour	Action	Code	Description
INFO	01	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
INFO	02	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
INFO	03	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.

Export to Excel

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

A sample Excel export is included below:

3. Import Offers and Export Bids

Market Participant :						
Resource Name :						
Bid/Offer Type :	Normal					
Standing Day Type :						
Daily Energy Limit :	0					
OpRes Ramp Rate :						
Update Transaction ID :	W6RQY11a					
Cancel Transaction ID :						
		Severity	Hour	Action	Code	Description
		INFO	1	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
		INFO	2	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
		INFO	3	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.

– End of Section –

4. Revising and Cancelling Import Offers and Export Bids

Initial (Daily) Import Offers and Export Bids may be revised provided the changes follow the rules for revised offers. See Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information regarding the rules for submitting revised offers/bids or cancelling offers/bids.

After the pre-dispatch has been run one hour prior to the dispatch hour, the algorithm is unable to accept changes to offers/bids from boundary entities. Any changes after this time will be dealt with manually by the IESO.

After the Schedule of Record is issued, the following general rules apply for imports:

- You may resubmit offers in real-time to ensure your resulting real-time schedule reflects your Pre-dispatch of Record schedule.
- You will pay a charge if you fail to flow at least the quantity that was scheduled day-ahead. This charge may be waived if the reason for failure was bona fide.
- After the Schedule of Record is issued, the following general rules apply for exports:
- You may submit your export bids by 10:00 am on the pre-dispatch day if you want to participate in the day-ahead process.
- You will pay a charge if you fail to flow at least the quantity that was scheduled day-ahead. This charge may be waived if the reason for failure was bona fide.
- You may also schedule a linked wheel-through day-ahead.

4.1 Retrieving Your Import Offer or Export Bid

The easiest way to revise or cancel your import offer or export bid is to first retrieve it. To retrieve your import offer or export bid, complete the following steps:

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

The screenshot shows the Energy Market Interface (EMI) with the 'Real Time Energy Market (RTEM)' menu item highlighted in red. The main window displays a table of market windows with the following columns: Market Hour, Start of Initial Window, Start of Mandatory Window, and Start of Closed Window. The table contains data for various market hours from 00 to 07 on 2016/04/01 and 00 to 07 on 2016/04/02.

Market Hour	Start of Initial Window	Start of Mandatory Window	Start of Closed Window
2016/04/01 00	2016/03/31 06:00	2016/03/31 22:00	2016/03/31 23:50
2016/04/01 01	2016/03/31 06:00	2016/03/31 23:00	2016/04/01 00:50
2016/04/01 02	2016/03/31 06:00	2016/04/01 00:00	2016/04/01 01:50
2016/04/01 03	2016/03/31 06:00	2016/04/01 01:00	2016/04/01 02:50
2016/04/01 04	2016/03/31 06:00	2016/04/01 02:00	2016/04/01 03:50
2016/04/01 05	2016/03/31 06:00	2016/04/01 03:00	2016/04/01 04:50
2016/04/01 06	2016/03/31 06:00	2016/04/01 04:00	2016/04/01 05:50
2016/04/01 07	2016/03/31 06:00	2016/04/01 05:00	2016/04/01 06:50
2016/04/01 08	2016/03/31 06:00	2016/04/01 06:00	2016/04/01 07:50
2016/04/01 09	2016/03/31 06:00	2016/04/01 07:00	2016/04/01 08:50
2016/04/01 10	2016/03/31 06:00	2016/04/01 08:00	2016/04/01 09:50
2016/04/01 11	2016/03/31 06:00	2016/04/01 09:00	2016/04/01 10:50
2016/04/01 12	2016/03/31 06:00	2016/04/01 10:00	2016/04/01 11:50
2016/04/01 13	2016/03/31 06:00	2016/04/01 11:00	2016/04/01 12:50
2016/04/01 14	2016/03/31 06:00	2016/04/01 12:00	2016/04/01 13:50
2016/04/01 15	2016/03/31 06:00	2016/04/01 13:00	2016/04/01 14:50
2016/04/01 16	2016/03/31 06:00	2016/04/01 14:00	2016/04/01 15:50
2016/04/01 17	2016/03/31 06:00	2016/04/01 15:00	2016/04/01 16:50
2016/04/01 18	2016/03/31 06:00	2016/04/01 16:00	2016/04/01 17:50
2016/04/01 19	2016/03/31 06:00	2016/04/01 17:00	2016/04/01 18:50
2016/04/01 20	2016/03/31 06:00	2016/04/01 18:00	2016/04/01 19:50
2016/04/01 21	2016/03/31 06:00	2016/04/01 19:00	2016/04/01 20:50
2016/04/01 22	2016/03/31 06:00	2016/04/01 20:00	2016/04/01 21:50
2016/04/01 23	2016/03/31 06:00	2016/04/01 21:00	2016/04/01 22:50
2016/04/02 00	2016/04/01 06:00	2016/04/01 22:00	2016/04/01 23:50
2016/04/02 01	2016/04/01 06:00	2016/04/01 23:00	2016/04/02 00:50
2016/04/02 02	2016/04/01 06:00	2016/04/02 00:00	2016/04/02 01:50
2016/04/02 03	2016/04/01 06:00	2016/04/02 01:00	2016/04/02 02:50
2016/04/02 04	2016/04/01 06:00	2016/04/02 02:00	2016/04/02 03:50
2016/04/02 05	2016/04/01 06:00	2016/04/02 03:00	2016/04/02 04:50
2016/04/02 06	2016/04/01 06:00	2016/04/02 04:00	2016/04/02 05:50
2016/04/02 07	2016/04/01 06:00	2016/04/02 05:00	2016/04/02 06:50

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

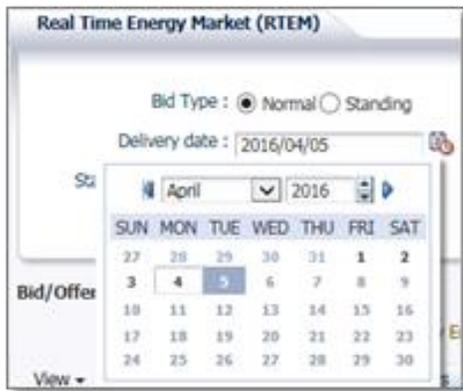
Note: In EMI, Normal refers to Initial (Daily) Bids/Offers.

The screenshot shows the Real Time Energy Market (RTEM) form with the following fields:

- Bid Type:** Normal Standing
- Delivery date:** 2016/04/04
- Standing Day Type:** [Dropdown menu]
- Market Participant:** [Dropdown menu]
- Resource Type:** [Dropdown menu]
- Resource Name:** [Dropdown menu]

4. Revising and Cancelling Import Offers and Export Bids

- If you are retrieving a Normal offer/bid, select the **Delivery date**. For Standing offers/bids, this field is not required and is therefore not selectable.



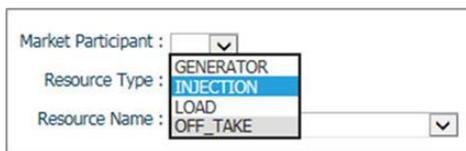
If you select the **Delivery date** after having already selected the Resource Type, and Resource Name, you may have to select the correct Resource Type and Resource Name again. EMI changes the Resource Type and Resource Name lists based on the **Delivery date**.

- If you are retrieving a Standing offer/bid, select the **Standing Day Type**. If your Standing offer/bid is for all days of the week, select ALL. Otherwise, select the day of the week to which the Standing offer/bid applies.
- Click the drop down next to **Market Participant** to see a list of the market participants on whose behalf you are authorized to enter dispatch data (e.g., offers, bids, schedules, etc.).

Choose the Market Participant for which you wish to retrieve an import offer or export bid.

- Importers:** Click the drop-down next to Resource Type and select **INJECTION**.

Exporters: Click the drop-down next to Resource Type and select **OFF_TAKE**.



4. Revising and Cancelling Import Offers and Export Bids

- Click the drop-down next to **Resource Name** and select the boundary entity resource for which you are retrieving an import offer or export bid.

The **Resource Name** is the unique reference for a facility/boundary entity resource used when submitting bids and offers. It is also called the “Delivery Point” and is used as the point of settlement for the IESO’s physical markets.

- Select the four-letter **Tie Point** for your boundary entity resource from the drop-down.
- Click **Load Data** to populate the screen with the data from the import offer or export bid you are retrieving.

4.2 Revising Your Import Offer or Export Bid

Once you have retrieved your import offer or export bid, you can revise the data as necessary. Below is an example of what is displayed after clicking **Load Data** to retrieve your offer/bid.

Click **Expand All** to see the price/quantity pairs and/or ramp rate sets for every hour. Alternatively, click the triangle next to the Hour number to expand any individual hours.

- Ensure the **Delivery Date** represents the date of the offer/bid you wish to revise.

4. Revising and Cancelling Import Offers and Export Bids

2. Select **Submit** from the drop-down next to the hour number for the hours that you are revising.

Bid/Offer Submission Information

Daily Energy Limit (MWh) : 0 OpRes

View ▾ Expand All Collapse All Clear Hours Copy Hours Detach

	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5
Hour 1	Submit ▾							
			P/Q Pair ID	1	2	3	4	5
			Price	-500	-500	50	100	150
			Quantity	0	75	100	110	120
Hour 2	Submit ▾							
			P/Q Pair ID	1	2	3	4	5
			Price	-500	-500	50	100	150
			Quantity	0	75	100	110	120

Note: If you wish to revise a portion of your offer/bid and cancel a portion of your offer/bid, you can do so in the same submission. Simply select **Cancel** for those hours that you are cancelling and follow the rules outlined in Section 4.3, Cancelling Your Import Offer or Export Bid and Appendix C: Revising and Cancelling Import Offers and Export Bids Rules.

3. Edit the price/quantity pairs as required.
4. Select the appropriate **Reason Code** from the drop-down or describe your reason for revising your offer/bid in the **Other Reason** field if you are revising an offer/bid within two (2) hours of the dispatch hour. IESO approval will be required before the revision is accepted. See Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information.

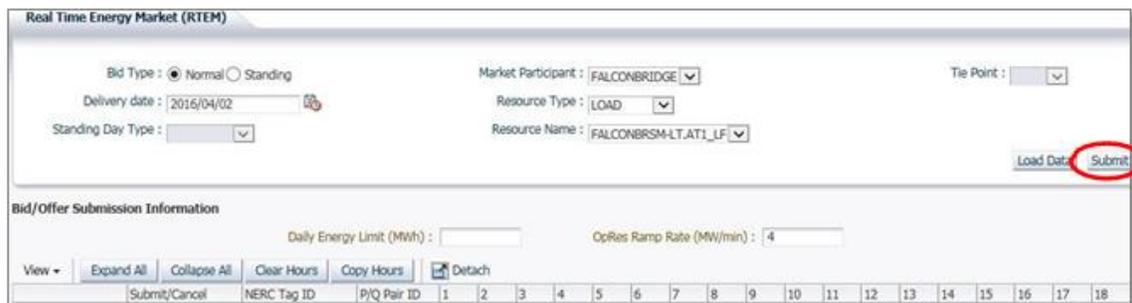
8	19	20	Ramp Rate ID	1	2	3	4	5	Speed No Load	Start Up Cost	Reason Code	Other Reason
									0	0		
.8	19	20	Ramp Rate ID	1	2	3	4	5			FO	
			RR(Break Point)								FD	
			RR(Ramp Up)								ERPO	
			RR(Ramp Down)								LRPO	
											WITHDRAW	
											OTHER	

4. Revising and Cancelling Import Offers and Export Bids

The following table defines the various Reason Codes available.

Reason Code	Description
FO	Forced Outage
FD	Forced Derating
ERPO	Early Return from Planned Outage
LRPO	Late Return from Planned Outage
WITHDRAW	Withdrawing your bid
OTHER	Complete the Other Reason field

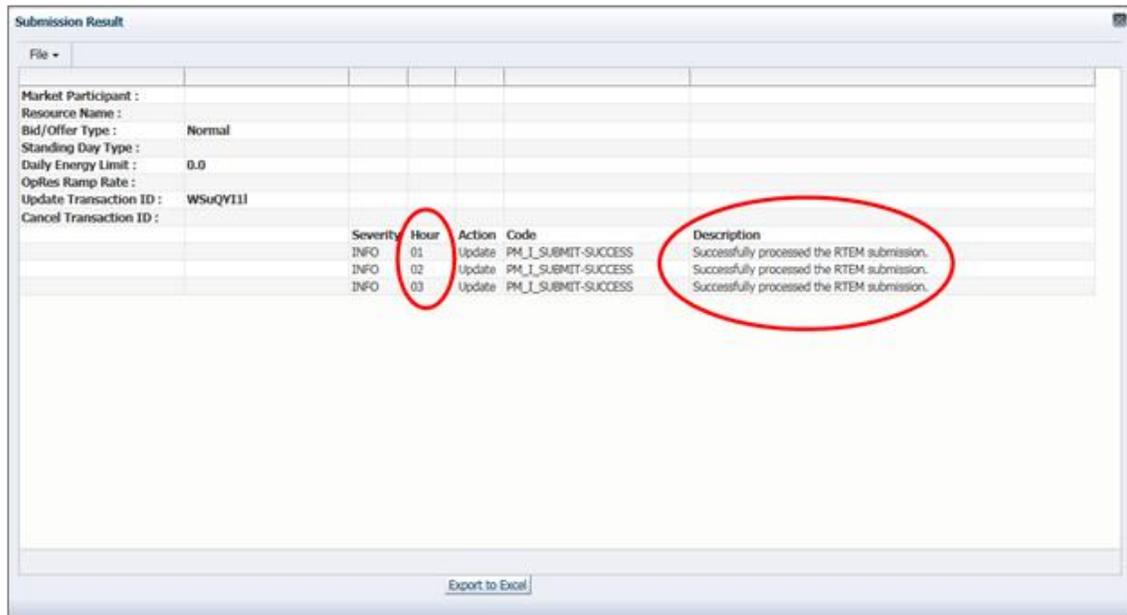
- If you select **OTHER**, you must also complete the **Other Reason** field. This is a free format field which allows you to enter a reason in your own words, using up to 128 characters.
- Repeat this process for each hour requiring a reason.
- Click **Submit** to send your revised import offer or export bid to the IESO.



The screenshot shows the Real Time Energy Market (RTEM) interface. At the top, there are several input fields: Bid Type (Normal selected, Standing unselected), Delivery date (2016/04/02), Standing Day Type (dropdown), Market Participant (FALCONBRIDGE), Resource Type (LOAD), Resource Name (FALCONBRSM-LT.AT1_LF), and Tie Point (dropdown). A 'Load Data' button and a 'Submit' button (circled in red) are visible on the right. Below this is the 'Bid/Offer Submission Information' section, which includes 'Daily Energy Limit (MWh)' and 'OpRes Ramp Rate (MW/min)'. At the bottom, there is a table with columns for 'Submit/Cancel', 'NERC Tag ID', 'P/Q Pair ID', and 18 numbered columns (1-18).

4. Revising and Cancelling Import Offers and Export Bids

- You will receive a submission result within a few moments of submitting your revised import offer or export bid, displaying its status. **Review** the Submission Result screen to ensure that your import offers or export bids for all hours have been successfully updated and applied.



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

A sample Excel export is included below:

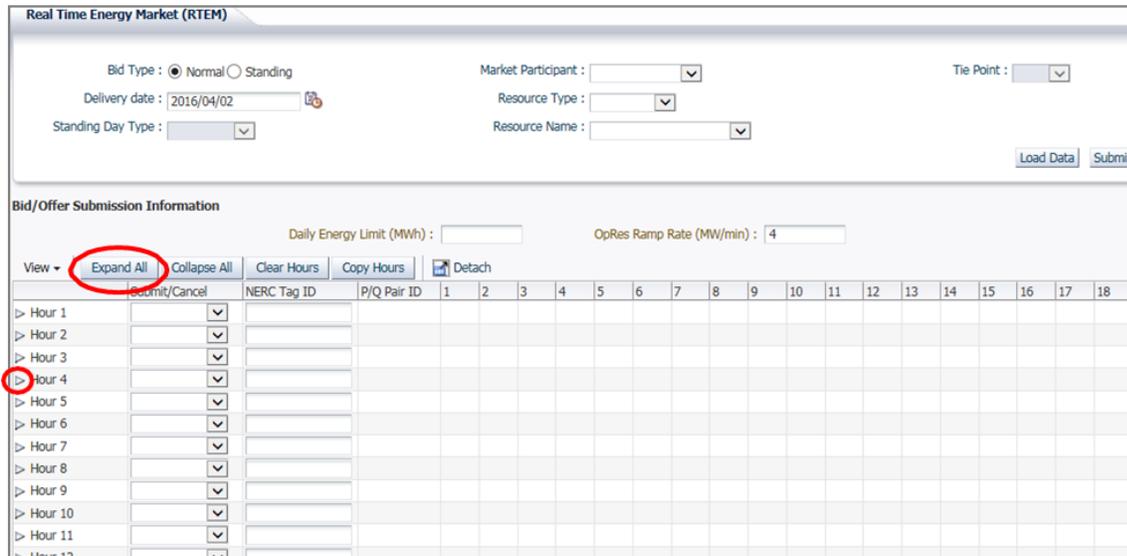
Market Participant :						
Resource Name :						
Bid/Offer Type :	Normal					
Standing Day Type :						
Daily Energy Limit :	0					
OpRes Ramp Rate :						
Update Transaction ID :	W6RQY11a					
Cancel Transaction ID :						
		Severity	Hour	Action	Code	Description
		INFO	1	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
		INFO	2	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.
		INFO	3	Update	PM_I_SUBMIT-SUCCESS	Successfully processed the RTEM submission.

- Review your **Pre-dispatch** and **Dispatch reports** to see which of your import offers or export bids have been scheduled.

4. Revising and Cancelling Import Offers and Export Bids

4.3 Cancelling Your Import Offer or Export Bid

Once you have retrieved your import offer or export bid, you can cancel the data as necessary. Below is an example of what you will see after clicking Load Data to retrieve your offer/bid.



The screenshot shows the 'Real Time Energy Market (RTEM)' interface. At the top, there are fields for 'Bid Type' (Normal/Standing), 'Market Participant', 'Tie Point', 'Delivery date' (2016/04/02), 'Resource Type', 'Standing Day Type', and 'Resource Name'. There are 'Load Data' and 'Submit' buttons. Below this is the 'Bid/Offer Submission Information' section, which includes 'Daily Energy Limit (MWh)' and 'OpRes Ramp Rate (MW/min)'. A 'View' dropdown menu is set to 'Expand All', which is circled in red. Below the menu are buttons for 'Expand All', 'Collapse All', 'Clear Hours', 'Copy Hours', and 'Detach'. The main part of the interface is a table with columns for 'Submit/Cancel', 'NERC Tag ID', 'P/Q Pair ID', and 18 numbered columns (1-18). The 'Submit/Cancel' column contains a dropdown menu for each hour, with 'Hour 4' selected and its dropdown menu open, showing 'Cancel' as the selected option. This 'Hour 4' row is also circled in red.

Click **Expand All** to see the price/quantity pairs and/or ramp rate sets for every hour. Alternatively, click the triangle next to the Hour number to expand any individual hours.

1. Ensure the **Delivery Date** represents the date of the import offer or export bid you wish to cancel.
2. Select **Cancel** from the drop-down next to the hour number for the hours that you are cancelling. Use *Copy Hours* after selecting Cancel for one hour to copy that selection for every hour if you plan to cancel the entire import offer or export bid.

Note: If you wish to revise a portion of your offer/bid and cancel a portion of your offer/bid, you can do so in the same submission. Simply select Submit for those hours that you are revising and follow the rules outlined in Section 4.2 Revising Your Import Offer or Export Bid and Appendix C: Revising and Cancelling Import Offers and Export Bids Rules.

3. Select **WITHDRAW** from the Reason Code drop-down or describe your reason for cancelling your import offer or export bid in the Other Reason field if you are cancelling an offer/bid within two (2) hours of the dispatch hour.

IESO approval will be required before the cancellation is accepted. See Appendix C: Revising and Cancelling Import Offers and Export Bids Rules for more information.

4. Revising and Cancelling Import Offers and Export Bids

19	20	Ramp Rate ID	1	2	3	4	5	Speed No Load	Start Up Cost	Reason Code	Other Reason
								0	0	FO FD ERPO LRPO WITHDRAW OTHER	
8	19	Ramp Rate ID	1	2	3	4	5				
		RR(Break Point)									
		RR(Ramp Up)									
		RR(Ramp Down)									

The following table defines the various Reason Codes available.

Reason Code	Description
WITHDRAW	Withdrawing your bid
OTHER	Complete the Other Reason field

- If you select **OTHER**, you must also complete the **Other Reason** field. This is a free format field which allows you to enter a reason in your own words, using up to 128 characters.
- Repeat this process for each hour requiring a reason.
- Click Submit to send your cancelled offer/bid to the IESO.

Real Time Energy Market (RTEM)

Bid Type : Normal Standing
 Delivery date : 2016/04/02
 Standing Day Type :

Market Participant : FALCONBRIDGE
 Resource Type : LOAD
 Resource Name : FALCONBRSM-LT.AT1_LF
 Tie Point :

Bid/Offer Submission Information

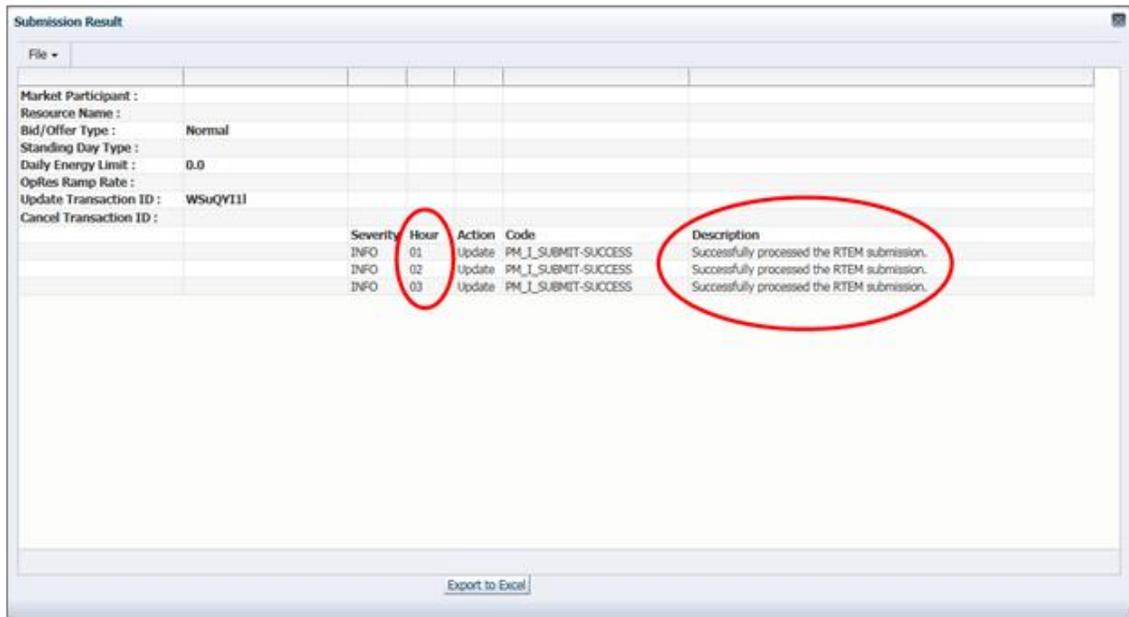
Daily Energy Limit (MWh) : OpRes Ramp Rate (MW/min) : 4

View -

<input type="button" value="Submit/Cancel"/>	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
--	-------------	-------------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----

4. Revising and Cancelling Import Offers and Export Bids

- You will receive a submission result within a few moments of submitting your cancelled import offer or export bid, displaying its status. **Review** the Submission Result screen to ensure that your import offers or export bids for all applicable hours have been successfully cancelled.



- Click **Export to Excel** to produce a spreadsheet of the Submission Result screen. Or, take a screen print for your records, and/or record the 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 :					
Daily Energy Limit :	0				
OpRes Ramp Rate :					
Update Transaction ID :	W6RQY11a				
Cancel Transaction ID :					
		Severity	Hour	Action	Code
					Description
		INFO	1	Update	PM_I_SUBMIT-SUCCESS
					Successfully processed the RTEM submission.
		INFO	2	Update	PM_I_SUBMIT-SUCCESS
					Successfully processed the RTEM submission.
		INFO	3	Update	PM_I_SUBMIT-SUCCESS
					Successfully processed the RTEM submission.

4. Revising and Cancelling Import Offers and Export Bids

9. Review your Pre-dispatch and Dispatch reports to see which of your import offers or export bids have been scheduled.

– End of Section –

Appendix A: Boundary Entities and Boundary Entity Resources

A.1 Boundary Entities

In the Ontario market, any conveyance of electricity must involve a registered facility. In interjurisdictional trade, there is no physical facility to register. To participate in interjurisdictional trade, the market participant must register as a “boundary entity”. The boundary entity acts as a “virtual facility”.

A.2 Boundary Entity Resources

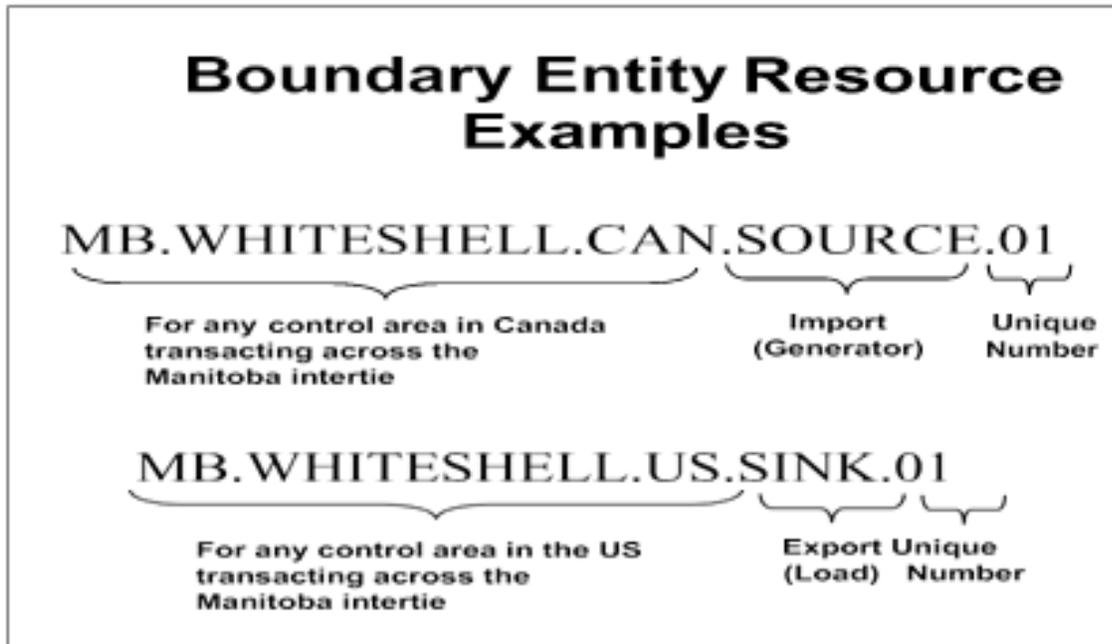
When market participants register physical facilities within Ontario, the registration process creates a “resource” associated with the physical characteristics of the load or generator, including its connection to the IESO-controlled grid. The resource ID is then used when submitting energy/operating reserve bids and offers. However, boundary entities do not have pre-identified “resources”. In order to allow boundary entities to submit import offers and export bids, the IESO has set up approximately 350 “boundary entity resources”. The market participant chooses the appropriate boundary entity resource based on the intertie and the control area to be used for the transaction.

A boundary entity resource can be thought of as a virtual generator or a virtual load that sits at the intertie with another control area. Market participants can then offer generation and operating reserve, and bid loads from boundary entities in much the same way as they do from registered facilities within Ontario.

The boundary entity resource is associated with the boundary entity, and is composed of three parts:

- The boundary resource representation (determined based on control area and intertie). In the example on the next page, **MB.WHITESHELL.CAN** is the boundary resource representation.
- Source or sink, and
- The identification number of the resource.

For example,



MB.WHITESHELL.CAN.SOURCE.01 is the first of 15 boundary entity resources that can be used to import energy and/or operating reserve across the Ontario-Manitoba intertie into Ontario from any control area within Canada other than Quebec.

The boundary entity resource is limited to certain interties and must be chosen appropriately. In order to allow market participants to make bids and offers which reflect their business transactions, multiple resources have been created for each control area outside Ontario. The number of boundary entity resources created reflects the anticipated activity from various control areas. For example, there are more boundary entity resources associated with New York than with the Maritimes.

Multiple market participants can use the same boundary entity resource. The participant ID associated with the bid or offer uniquely identifies the transaction.

A boundary entity resource reflects whether the transaction is a bid or offer, and indicates where the source or sink is located. For example, if a market participant wants to offer energy from Minnesota, there is a boundary entity resource that can be used for this purpose.

Keep in mind that these resources are virtual resources. They do not correspond to specific physical resources in other control areas.

A.3 Tax Treatment

In addition to the physical source/sink aspects, there are also tax considerations for imports and exports. Exports from Ontario to all Canadian provinces will attract HST, while transactions to the US are HST exempt. In order to accommodate the tax implications for interjurisdictional energy trading, the IESO has created specific resources at each relevant location for each type of transaction. These resources are designated CAN (Canada) or US (United States).

See Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets, Appendix F, for a complete list of boundary entity resources.

– End of Section –

Appendix B: Rules For Price/Quantity Pairs

B.1 Price/Quantity Pairs

In the Real-time Energy Market, offers and bids are submitted in price/quantity pairs. A price/quantity pair specifies the amount of energy offered/requested for a given hour. The price listed is the lowest price that you will accept for the energy offered (offers) or the highest price that are willing to pay for the energy (bids). You may submit sets of price/quantity pairs for any or all hours of the dispatch day.

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

See Market Manual 4: Market Operations, Part 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets for more information.

B.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 (MMCP), nor lower than negative Maximum Market Clearing Price.

B.3 Rules for Bids: Price

- The price must not increase as the quantity decreases.
- The price in each price/quantity pair cannot be greater than Maximum Market Clearing Price (MMCP), nor lower than negative Maximum Market Clearing Price.

B.4 Rules for Offers and Bids: Quantity

- For imports and exports, amounts must be submitted in whole megawatts with no decimal places.
- 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 new quantity associated with the same price as included with the first price/quantity pair.

B.5 Example of Offer Price/Quantity Pairs

Consider the following example:

View ▾	Expand All	Collapse All	Clear Hours	Copy Hours	Detach						
	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	6		
▽ Hour 1	<input type="text"/>	<input type="text"/>									
			P/Q Pair ID	1	2	3	4	5	6		
			Price	20.5	20.5	21.6	22	23	24.5		
			Quantity	0	20	40	60	80	100		
▽ Hour 2	<input type="text"/>	<input type="text"/>									
			P/Q Pair ID	1	2	3	4	5	6		
			Price	20.5	20.5	21.6	22	23	24.5		
			Quantity	0	20	40	60	80	100		
▽ Hour 3	<input type="text"/>	<input type="text"/>									
			P/Q Pair ID	1	2	3	4	5	6		
			Price	20.5	20.5	21.6	22	23	24.5		
			Quantity	0	20	40	60	80	100		

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

B.6 Example of Bid Price/Quantity Pairs

Consider the following example:

View ▾	Expand All	Collapse All	Clear Hours	Copy Hours	Detach				
	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	
▽ Hour 1	Submit ▾								
			P/Q Pair ID	1	2	3	4	5	
			Price	1,000	1,000	250	22	20	
			Quantity	0	20	40	60	80	
▽ Hour 2	Submit ▾								
			P/Q Pair ID	1	2	3	4	5	
			Price	1,000	1,000	250	22	20	
			Quantity	0	20	40	60	80	
▽ Hour 3	Submit ▾								
			P/Q Pair ID	1	2	3	4	5	
			Price	1,000	1,000	250	22	20	
			Quantity	0	20	40	60	80	

In this example, the first two price/quantity pairs for Hours 1-3 are (1000, 0) and (1000, 20). This means that the bid for 0 to 20 MW is \$1000/MW.

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

- The bid from 20 to 40 MW is \$250/MW
- The bid from 40 to 60 MW is \$22/MW
- The bid from 60 to 80 MW is \$20/MW

B.7 Negative Prices

You may submit a negative price in your offer or bid. For importers, a negative price means you are willing to pay up to that price for each MW of energy you inject, rather than reduce your output; for exporters, it means you are willing to take additional energy if you are paid to do so.

For example, in order to link a wheel-through, your import offer portion must be between - \$50 and negative Maximum Market Clearing Price (-MMCP).

For example, your offer may look like this:

Bid/Offer Submission Information									
Daily Energy Limit (MWh) : <input type="text"/>									OpRes
View ▾	Expand All	Collapse All	Clear Hours	Copy Hours	Detach				
	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	
▽ Hour 4	<input type="button" value="Submit/Cancel"/>								
			P/Q Pair ID	1	2	3	4	5	
			Price	-20	-20	-5	20	40	
			Quantity	0	20	40	60	120	

This bid indicates that for hour 4, you are 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 you to shut down than to pay to inject additional energy.

Your **bid** may look like this:

Bid/Offer Submission Information										
Daily Energy Limit (MWh) : <input type="text" value="21000"/>									OpRes Ramp Rate (MWh)	
View ▾	Expand All	Collapse All	Clear Hours	Copy Hours	Detach					
	Submit/Cancel	NERC Tag ID	P/Q Pair ID	1	2	3	4	5	6	7
▽ Hour 4	<input type="button" value="Submit"/>									
			P/Q Pair ID	1	2	3	4	5	6	7
			Price	2,000	2,000	1,500	100	70	-10	-15
			Quantity	0	10	20	30	40	50	60

Appendix B: Rules for Price/Quantity Pairs

This bid indicates that the energy you withdraw in hour 4 has a decreasing value to you. You are willing to pay up to the applicable price for each bid block for the first 40 MW you withdraw. After 40 MW, you are only willing to consume additional energy if you are compensated at your bid prices:

- \$10/MW from 41 to 50 MW
- \$15/MW from 51 to 60 MW

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

– End of Section –

Appendix C: Revising and Cancelling Import Offers and Export Bids Rules

C.1 Daily Offers and Bids

You may revise a Daily Offer or Bid at any time, keeping in mind the restrictions in place for the Day-Ahead Commitment Process (DACP) and during the 2-hour mandatory window.

Refer to Market Manual 9: Day-Ahead Commitment Process, Part 9.2, Submitting Operational and Market Data for DACP, for information on restrictions that apply to the submission of dispatch data during the DACP (10:00 EST to 14:00 EST).

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 Market Manual 9: Day-Ahead Commitment Process, Part 9.2, until two hours prior to the dispatch hour for which the dispatch data or revision is being submitted.

During the 2-hour mandatory window, if the amount you will be injecting differs from the quantity expected to be delivered by more than the greater of 2% or 10 MW, you are required to inform the IESO (call the Control Room) as soon as practical.

Refer to Market Manual 4.2 Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets for details on the mandatory window.

After the Interchange Schedule has Been Issued

If your ability to meet your offer/bid changes after 60 minutes prior to the start of the dispatch hour, you must notify the IESO (call the Control Room) as soon as practical. After this time, the system cannot accept changes from market participants to offers or bids for the dispatch hour. Therefore, changes for the current dispatch hour cannot be made by revising an offer or bid.

You must submit Revised Offers or Bids for future hours if the ability to produce is expected to continue to fall short of your current offer/bid.

Reliability of the IESO-controlled Grid

If the IESO determines that a revision to your 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 quantity revisions.

Schedule of Record

After the Schedule of Record is issued, the following general rules apply for imports:

- You may resubmit offers in real-time to ensure your resulting real-time schedule reflects your Pre-dispatch of Record schedule.
- You will pay a charge if you fail to flow at least the quantity that was scheduled day-ahead. This charge may be waived if the reason for failure was bona fide.

After the Schedule of Record is issued, the following general rules apply for exports:

- You may submit your export bids by 10:00 am on the pre-dispatch day if you want to participate in the day-ahead process.
- You will pay a charge if you fail to flow at least the quantity that was scheduled day-ahead. This charge may be waived if the reason for failure was bona fide.
- You may also schedule a linked wheel-through day-ahead.

C.2 Standing Offers and Bids

You may revise a Standing Offer or Bid at any time; the new Standing Offer/Bid supersedes the previous submission. Be aware of when a revised Standing Offer/Bid will take effect. See the definition of a standing offer in Section 3.1 for an example of when an Standing Offer/Bid converts to a Daily Offer/Bid.

– End of Section –

References

Document Title	Document ID
Introduction to Ontario's Physical Markets	Link
Market Manual 4: Market Operations, Part 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets	MDP_PRO_0027
Market Manual 9: Day-Ahead Commitment Process, Part 9.2, Submitting Operational and Market Data for DACP	IESO_MAN_0077

Related Documents

Document Title	Document ID
Energy Market Interface - Submitting, Revising and Cancelling Energy Offers	-
Energy Market Interface - Submitting, Revising and Cancelling Energy Bids	-
Energy Market Interface - Submitting, Revising and Cancelling Schedules and Forecasts	-

- End of Document -