eMarket Users Guide

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About This Document

This document describes the usage of the eMarket Graphical User Interface (GUI) from the perspective of an end user, such as a public user or Market Participant. It **does not** describe the GUI from the perspective of IT administrators at ISO New England wishing to configure the eMarket application. It does describe each display in the eMarket GUI application along with a set of common tasks users will perform. Some of the tasks change only certain data on a display. Users may certainly change any fields they wish during the steps. The tasks merely provide a quick reference for users who want to do certain things.

Who Should Use this Document

Market Participants wishing to use the eMarket user interface to perform market operations, and public users requesting market information should use this document.

For More Information

Additional information that was used in the creation and development of this document can be found in the following documents.

- *eMarket Data Exchange Specification*

- *ISO-NE Manuals > M-11 Market Operations*

Conventions

The following are conventions used throughout this document:

Bolding is used to highlight important screen items.

Revision Record

Version	Date	Comments
1.0	03/23/2012	Original for review
1.1	05/28/2012	Updated with screenshots of production version of eMarket and to account for latest changes to displays
1.2	08/31/2012	Corrected errors in the validation rules.
1.3	09/15/2012	Updated screenshots in §4.12, §5.4 and §7.11
2.0	04/25/2013	Updated §1.4 to reflect the changes to the DA timeline. Added statement on when the cleared results of the Day-Ahead Market are available to be viewed and downloaded in §4.13, §4.15.8, §6.4, §6.6.2, §6.6.3, §7.12, §7.13.10.

Version	Date	Comments
3.0	04/15/2014	Updated to reflect changes for the new Regulation Market and support of Alternative Technology Regulating Resources (ATRRs). Significant changes: • Updated the versions of web browsers supported by eMarket in §1.1 • Updated §1.4 to describe the Regulation Market timeline for submittals. • Updated §3.1 to add Regulation portfolios and concepts of Alternative Technology Regulation Resources (ATRRs) • Revised §4.3 Unit Default Parameters Display to remove the regulation limits from the display because the authority to submit these parameters is now governed by the eMarket Regulation roles and this display is governed by the eMarket Generation roles. • Created a new major section 5 Regulation Tab and move the Regulation Offers and Regulation Hourly Updates from the Generation Tab section into this section. Note that these two displays are changed significantly. Also moved the two Regulation XML Reports from the Generation Tab section to the new Regulation Tab section.
4.0	09/05/2014	Updated to rescind the changes specific to the new Regulation Market and support of Alternative Technology Regulating Resources (ATRRs) and to reflect all the changes introduced in support of the Tariff changes for Energy Market Offer Flexibility (EMOF). The significant changes are: • Updated the versions of web browsers supported by eMarket in §1.1 • Updated §1.4 to describe the changes to the eMarket timeline for submittal of energy and regulation offers and of demand bids, and to introduce the new timeline for Intraday Re-Offer periods for energy and regulation offers. Also introduced the new timelines for submittal of Fuel Price Adjustment requests. • Changed the names of displays to emphasize those used to submit daily parameters that carry forward to future market days until they are changed at a future date from those used to submit hourly updates of parameters that are specific to one market day; for example: - Unit Manager is now Unit (Daily) Default Parameters; - ARD Manager is now ARD (Daily) Default Parameters; - (Unit) Ramp Rates is now Unit (Multiple) Ramp Rates Daily Default; - ARD Ramp Rates is now ARD (Multiple) Ramp Rates Daily Default; - (Unit) Schedule Detail is now (Unit) Schedule Detail Defaults; - ARD Schedule Detail is now ARD Schedule Detail Defaults;

Version	Date	Comments
		- (Unit) Schedule Offers is now (Unit) Schedule Offers Default; - ARD Schedule Offers is now ARD Schedule Offers Default; - Regulation Offers is now Regulation Offers (Daily) Default; This allowed for the introduction of the new hourly updates displays: - Unit Ramp Rate Hourly Updates; - ARD Ramp Rate Hourly Updates; - (Unit) Schedule Offers Hourly Updates; - (Unit) Schedule Times Hourly Updates; - ARD Schedule Offers Hourly Updates. • Added description of new display for Fuel Price Adjustments • Moved the Startup and No Load Cost offer parameters from the unit level (e.g. Unit [Manager] Default Parameters display) to be schedule level parameters (e.g. Unit Schedule Offers Default display) that can be different for each schedule. With this change all unit financial offer parameters appear on one display where fuel blend information can be submitted together with the financial offers and to allow overrides of the financial offers on an hourly basis. • Moved the Regulation Limits offer parameters from the unit level (e.g. Unit [Manager] Default Parameters display) to the Regulation Offers Default display. This was done in anticipation of the forthcoming new Regulation Market where regulation offers by other regulation resources (Alternative Technology Regulating Resources [ATRR]) will need to be supported. • Moved the Use Offer Slope and Use Startup No Load flags from the schedule detail defaults (Units and ARDs) set of data to the schedule offers default set so that hourly overrides of the flags could be supported with the Offers Hourly Updates. • Added Claim10 and Claim30 offers to the set of daily default asset data that could be overridden with Hourly Updates (Unit and ARD) • Added regulation price and automatic response rate (ARR) to the set of daily default data that could be overridden with the Regulation Hourly Updates. • Changed the definition of the cost-based schedules: Prior to Energy Market Offer Flexibility, schedule 99 was the Mitigation schedule for a unit's primary fuel and schedule 98 was for the unit's alternate fuel; schedule 97 was the Reference schedule for the unit's primary fuel and schedule 96 was the Reference schedule for the unit's alternate fuel.

Version	Date	Comments
		With Energy Market Offer Flexibility, schedules 95 through 98 are now Reference schedules for a unit's schedule: - For single-fuel units, schedule 98 is the only Reference schedule; - For dual-fuel units, schedule 98 is the Reference schedule for the unit's fuel #1 (likely its least cost fuel) and schedule 97 is the Reference schedule for the unit's fuel #2 (or alternate fuel); - For three-fuel units, schedule 98 is the Reference schedule for the unit's fuel #1 (likely its least cost fuel), schedule 97 is the Reference schedule for the unit's fuel #2 (main alternate fuel), and schedule 96 is the Reference schedule for the unit's fuel #3 (likely a seasonal alternate to either its primary or alternate fuel); - Schedule 95 is reserved for the eventuality that a unit may have a seasonal alternate for both its least cost and its alternative fuels. • Changed the validation rules for submittal of daily default parameters: when submitting updates to the daily default offer parameters, values must be submitted for *all* parameters. For example, a value for RTHOL must be submitted when submitting an update to a unit's schedule detail default parameters; it is no longer optional. • Changed the validation rules for hourly updates: when submitting hourly updates, values for all related parameters must now be submitted when you want to submit an update for an hour. For example, you can no longer submit an hourly update for only the Economic Max of a unit; you must also submit an update for all the other related parameters for the hour (Economic Minimum, RTHOL, Emergency Minimum, and potentially Claim10 and Claim30) even if the update values for these parameters are the same as the daily default values. That is especially true for hourly updates of financial offers: if you want to submit an update of your financial offers for an hour, you must submit values for all financial parameters and their associated fuel blend information.
4.1	11/20/2014	Added appendix A listing fuel index names and references to it throughout the document. Removed reference to SSL3.0
4.2	12/19/2014	• Revised section 1.1 to refer to the Web Browser Support for SMD Applications section of our website for a list of supported browsers and security protocols. • Replaced the unit and ARD Schedule Selection display screenshots in §4.11 and §7.10 and added description of the new Schedule ID data column.

Version	Date	Comments
5.0	12/15/2014	Major Revision # to re-instate all elements for the enhancement of the Regulation Market and for alternative technology regulating resources. Changes in this revision include: • Updated §1.4.2 to reflect changes to the eMarket deadlines for the Regulation Market. In particular, changes to the close hour of the Regulation Market Intraday Re-Offer Period and to what can be submitted during this period, and finally changes to the number of minutes before the beginning of the hour that intraday re-offers can be submitted. • Updated §3.1 to mention ATRRs in portfolios • Revised §5.1 to discuss ATRRs • Revised §5.3 to describe the modified Regulation Offers Default Display and the special validation rules for ATRR offers • Revised §5.4 to described the modified Regulation Hourly Updates Display and the special validation rules for ATRR offers • Updated §5.5 to show the modified XML Regulation download messages. • Replaced "Automatic Ramp Rate" with "Automatic Response Rate" throughout to be consistent with the term used in the Market Rule.
5.1	06/25/2015	Revision to document the changes to the demand displays and XML download reports for Participants who register subaccounts in the ISO-NE Customer and Asset Management System (CAMS) and other editorial changes. • Added note in §1.5 Effective Dates of Data about the need to submit data in successive market day order. • Added §1.8 Demand Bid Subaccounts to discuss the nature and particularities of subaccounts. • Described changes for subaccounts made to the displays and validation discussed in sections 6.2 Demand Bids Display 6.3 Increment Offers and Decrement Bids (Inc/Dec) Display and 6.4 Demand by Portfolio Display • Described changes to the display and the XML reports discussed in §6.6 XML Download for Demand Display

Version	Date	Comments
5.2	07/22/2015	General revision to reflect changes to the eMarket MUI in regards to demand bid subaccounts: • Modified §1.8 Demand Bid Subaccounts to state that an inactive subaccount will be shown on the drop-down lists if there are demand bids for the subaccount on the selected market day. This is necessary for Participants to be able to delete demand bids that may have been submitted before the subaccount was made inactive (terminated/deleted). • Corrected §6.2, §6.3, §6.4 and §6.6 to clearly state that active subaccounts and only inactive subaccounts for which there are demand bids on the selected market day are listed on the selector drop-down list for subaccount name. • Added note to §6.2.5 and §6.3.3 to clearly state that one can only delete demand bids when selecting an inactive subaccount; bids cannot be modified. • Added note to §6.2.6 and §6.3.4 to specify that demand bids cannot be duplicated from one subaccount to another. • Corrected the specification of when information on the demand bids that were cleared in the Day-Ahead Market is available in the Demand by Participant (§6.6.2) and Detailed Demand by Participant (§6.6.3) XML reports.

1. Introduction

This chapter contains introductory material and concepts relevant to the eMarket Graphical User Interface (GUI). It describes such topics as high level GUI functionality, accessing the GUI, user roles, business rules and timelines.

1.1 Accessing the eMarket GUI

Please refer to the ***Web Browser Support for SMD Applications*** section of our website (which can be found under Participate > Support > Web Browser Support) for information on the browsers and security protocols ISO New England supports.

All users need to register with ISO-NE Customer Support in order to use the eMarket application to view public information or to submit and view private information in the ISO New England Energy Market. This is done by the user's company Security Administrator using the ISO New England Customer and Asset Management System (CAMS) who will create the user accounts and assign each the various rights to access the eMarket application resulting in a digital certificate being issued to the user. Refer to the ***Customer & Asset Management System (CAMS) Frequently Asked Questions*** page on the ISO New England web site (***www.iso-ne.com***) for more information.

Once registered, market system users will be provided with the link to access the SMD home page, which will then allow direct access to the eMarket application, one of the SMD software applications. Access to the SMD Application Sandbox is also restricted to registered market users. Please contact Customer Support for the URL's to these pages.

All questions or inquires about eMarket access should be addressed to the ISO New England's Customer Support Department at (413) 540-5220 or via email at ***custserv@iso-ne.com***.

1.2 User Roles

Roles define the displays and actions that a user can use to update or view data. Distinct roles are defined for each type of market assets, e.g. Asset Related Demand (ARD), Unit (Generation), Demand, Load Response (PRD) and Regulation Resources. As the names indicate, a user can only utilize the displays associated with the asset type. For example, a user with an ARD role can use all the ARD displays, but cannot use any Demand, Generation, Regulation or Load Response displays.

Roles are further divided into two sub-types; "Read-only" and "Read/Write" (also known as "Update"). Read-only roles restrict the user to strictly viewing data on a display, while Read/Write roles allow the user to view and submit data using a display. For example, a Participant user with a Read Only ARD role can only view the Participant's market data using the ARD displays, while one with a Read/Write ARD role can view and change the Participant's market data using

the ARD displays. The Public displays can be viewed by any user with any role. They are all read-only displays.

Refer to the ***Customer and Asset Management System Application Group Roles*** document on the ISO-NE Web site for a complete list and description of the eMarket roles.

1.3 Agent Users

Some users can represent or act on behalf of more than one Participant. Such users are referred to as **agents**. Agents need to specify the Participant they are representing when using eMarket. This is done by selecting the Participant in the upper right of the header.

Note: Although the eMarket application provides the capability to define users as agents, that capability to define agent users in CAMS is not available at this time (August 2014).

1.4 Business Rules and Timelines

The associated business rules and timelines can be found in the document ***Market Rule 1*** and in the ***ISO New England Manuals***.

Submission deadlines are market restrictions established by Market Rule defining deadlines by which data must be submitted. If data is submitted after a submission deadline, that data submittal will be rejected.

1.4.1 Energy Market Timeline

The following submission deadlines <u>for energy offers</u> exist in eMarket:

Deadline	Description
Day-Ahead Market for two days from now and beyond – Open and Close hour	Normally, the market opens at 18:30 and closes at 23:59 Eastern time each day for the market day two days from now and beyond. Data submittals can be made between 18:30 and 23:59 every day, for the day after tomorrow and up to nine days in the future.
Day-Ahead Market for tomorrow and beyond – Open and Close hour	Normally, the market opens at 00:00 and closes at 10:00 Eastern time each day for the next day's market and beyond. Data submittals can be made between midnight (00:00) and 10:00 every day, up to ten days in the future. If a bid or offer is to be used in the Day-Ahead Market (DAM), it must be submitted by the 10:00 deadline on the day before the operating day.

Deadline	Description
Re-Offer Period Open	Normally, the re-offer period opens daily as soon as the Day-Ahead market results are approved and posted, but no later than 13:30 Eastern time. The markets database is unavailable for entry between Day-Ahead Market Close and Re-Offer Period Open while the Day-Ahead commitment software is running.
Re-Offer Period Close	Normally, the re-offer period closes daily at 14:00 Eastern time. For a bid or offer to be in effect for the Real Time Market (RTM), it must be submitted by this deadline on the day before the operating day. After this hour, only hourly updates of energy offers for tomorrow's market can be submitted when the RT Intraday Re-Offer period opens. All other parameters for tomorrow are final. The markets database is unavailable for submittal of any energy offers for tomorrow's energy market and beyond between Re-Offer Period Close and Day-Ahead Market for two days from now Opens, which is when the Real Time commitment software is running to establish and finalize the operating plan for tomorrow.
Real Time (RT) Intraday Re-Offer Period – Open and Special rules for Close hour	The RT Intraday Re-Offer period opens at 18:30 Eastern time the day before the operating day and implicitly closes at 22:30 of the operating day. During this period of time, hourly updates of energy offers for future hours of the operating day can be submitted. Offers for the next hour can be submitted up to 30 minutes before the beginning of the hour. Therefore • After 23:30 the day before the operating day, hourly updates for the first hour of the operating day can no longer be submitted • After 22:30 of the operating day, hourly updates for the operating day can no longer be submitted. During the RT Intraday Re-Offer period, only hourly updates of financial energy offers can be submitted; that is to say changes to incremental energy offers (MW/Price pairs) and under strict rules, changes to generator's Startup and No Load Cost offers, including changes to the associated fuel blend parameters. All other components of an asset's offer/bid cannot be changed during this period.

There are some special conditions where the above times may change such as extenuating circumstances when the market window must be extended. Market Participants are notified whenever these times are altered; the notifications are posted as special notices on the ISO website. Market Participants can sign up with the Customer Support Department at ISO New England to receive these notices by email.

1.4.2 Regulation Market Timeline

The following submission deadlines <u>for regulation offers</u> exist in eMarket:

Deadline	Description
Regulation Market for two days from now and beyond – Open and Close hour	The market opens at 18:30 and closes at 23:59 Eastern time each day for the market day two days from now and beyond. Regulation offers, daily and hourly updates, can be submitted between 18:30 and 23:59 every day, for the day after tomorrow and up to nine days in the future. ***Same as the offers/bids for the Energy market.***
Regulation Market for tomorrow and beyond – Open and Close hour	The market opens at 00:00 and closes at 14:00 Eastern time each day for the next day's market and beyond. Regulation offers, daily and hourly updates, can be submitted between midnight (00:00) and 14:00 every day, up to ten days in the future. ***Note that 14:00 is the close of the Energy market Re-Offer Period***, *when a generator's economic limits for tomorrow are final and cannot be changed. These are the limits against which regulation limits are validated*.
Regulation Market Intraday Reoffer Period – Open and Special rules for Close hour	The Intraday Reoffer period opens at 14:00 Eastern time the day before the operating day and implicitly closes are 22:55 of the operating day. During this period, regulation offers hourly updates for future hours of the operating day can be submitted. Offers for the next hour can be submitted up to 5 minutes before the start of that hour. Therefore • After 23:55 the day before the operating day, hourly updates for the <u>first</u> hour of the operating day can no longer be submitted • After 22:55 of the operating day, hourly updates for the operating day can no longer be submitted. • During the Intraday Reoffer period, <u>hourly updates of</u> only <u>the regulation financial </u>offer parameters (Regulation Service Price, Regulation Inter-Temporal Opportunity Capacity Cost, and Regulation Other Capacity Cost) can be submitted. • For Alternative Technology Regulation Resources (ATRR), hourly updates of both the regulation financial and physical (Availability for Regulation, Automatic Response Rate, Regulation High and Low Limits) can be submitted. What this means is that Participants can submit hourly updates of their regulation financial offers at any time for future hours of today and for any hour of tomorrow. Participants of ATRRs can also submit hourly updates of their regulation physical offers at any time for future hours of today and for any hour of tomorrow.

1.4.3 Fuel Price Adjustments Submittal Timeline

The following submission and processing deadlines and rules <u>for Fuel Price Adjustment (FPA) requests</u> exist in eMarket:

- FPA requests can be submitted at any time with a start hour for any future hours of today and any hour of tomorrow. FPA requests for the next hour of today must be submitted at least 30 minutes before the start of the hour.

- FPA requests are processed within one minute after being received except for two periods of time where the processing is suspended:

    - From the closure of the Day-Ahead Market and the opening of the Re-Offer Period for tomorrow, the processing of FPA requests for tomorrow is suspended while the commitment software is running to clear the tomorrow's Day-Ahead Market.
    - From the closure of the Re-Offer Period and the opening of the RT Intraday Re-Offer Period for tomorrow, the processing of FPA requests for tomorrow is suspended while the commitment software is running to establish and finalize the tomorrow's operating plan.

    FPA requests for tomorrow submitted while processing is suspended remain in "Pending" state until processing resumes.

1.4.4 Rules for Timeline Checks

Every submittal (display or XML upload) to the eMarket application has an embedded timestamp that cannot be edited. This timestamp tells eMarket when the data was submitted. Almost all the submissions have the ability to enter day and sometimes time information; either for the past or the future. Deadline validation is performed for data submittals only; there is no deadline validation performed on data queries, which means that one can view and retrieve data at any time.

The time against which these validations are done will be the time that the eMarket application receives the submission for processing, which is the earliest time that eMarket can recognize the submission.

Consider the following examples (assumes a submission deadline of 10:00):

- You send a submittal for the next day at 09:59.45 AM. eMarket receives the complete submittal at 09:59:48 AM. Assume the validation and database processing required to submit this transaction is significant, such that the transaction does not complete until 10:00:12 AM. The transaction succeeds, because eMarket received the complete request at 09:59:48 AM, before the cut-off window.

- You send a submittal for the next day at 10:01.45 AM. eMarket receives the complete submittal at 10:01:48 AM. eMarket will reject this submission because it was received after the cut-off time.

- You send a submittal for the next day at 09:59.45 AM. Due to unusual network latency, eMarket receives the complete submittal at 10:00:13 AM.

eMarket will reject this submission because it was received after the cut-off time, even though it was sent before the cut-off time. eMarket has no way of knowing that this submittal was sent before the cut-off time, and therefore can only rely on the time the submittal was received.

In the eMarket GUI, data entry fields on displays will be disabled and de-emphasized based on the above deadlines to prevent the user from trying to submit data when the market is closed. Only some data submittals are allowed during the Re-Offer Periods. The data entry fields for these data values will be enabled and emphasized during the Re-Offer Periods when data submittal is allowed.

1.5 Effective Dates of Data

Much of the data in the eMarket application is time sensitive. As data is entered, you are typically required to enter the date for which the data applies. As a rule, it is not necessary to submit data for each Market day. With displays labeled as "Default", the submitted data is effective starting on the Market day specified and for all subsequent days up to the day the data is changed.

> **Note: Data must be submitted for successive market days.** This means that you should not submit data for a future date, say July 10, and then submit data for an earlier date, say July 5, because the latter data submittal will overwrite the data previously submitted.

Hourly bid data on the other hand only applies to a specific Market day and hour. Specifically, data on displays labeled as "Hourly Updates" applies only to the specific day and hour for which the override is entered:

- Unit Ramp Rate Hourly Updates
- Schedule Offers Hourly Updates
- Schedule Times Hourly Updates
- Unit Hourly Updates
- Fuel Price Adjustment requests
- Regulation Hourly Updates
- ARD Ramp Rate Hourly Updates
- ARD Schedule Offers Hourly Updates
- ARD Hourly Updates
- Demand Bids
- Inc/Dec Bids

1.6 Display Refresh vs Browser Refresh

For cyber security reasons, the eMarket GUI does not use cookies to remember the last eMarket display page that the user accessed.

Consequently, if you perform a browser refresh to reload the web page using

- The F5 function key, or

- The Refresh function in Internet Explorer (toolbar button or Refresh on the View drop-down menu)

- The Reload function in Chrome (toolbar button or Reload on the page tab)

- The Reload function in Mozilla (toolbar button or Reload on the page tab)

eMarket will present its initial web page rather than reload the web page with the display you had selected along with your filter selections. To refresh the information shown in a display page, use the *Refresh* button provided on the eMarket display.

1.7 Browser "Back" Function with eMarket

Since the eMarket GUI does not use cookies to remember the last eMarket display page that the user accessed, using the browser's "Back" function to return to the eMarket GUI after navigating away will <u>not</u> return the user to the eMarket web display tab that was on display prior to navigating away. Rather, the user will be returned to the default eMarket initial web display tab.

Note: The response to an XML file upload and to all XML Download requests will be a downloaded response XML file that the user will be prompted to open or save. The web browsers can be configured in various ways to open the downloaded response file, from selecting the application to open the file (Firefox and Chrome) to using the application associated with the .XML file extension (Firefox and Internet Explorer). If the user's browser is the application designated/selected to open the file, it is recommended that its options be set to open the file in a new tab or window. Otherwise the response file will be opened in the same window display tab used to interact with eMarket and the user will not be able to get back to the eMarket web display tab that was on display prior to the action that caused the response XML file to be generated.

1.8 Demand Bid Subaccounts

Participants with registered subaccounts in the ISO-NE Customer and Asset Management System (CAMS) for their demand bids may now use these subaccounts when their users submit demand bids into the Market using the eMarket application.

Note: *The subaccount feature is optional in the eMarket application*. For Participants who do not register subaccounts in CAMS, the functionality of the eMarket GUI and the XML reports obtained using the eMarket GUI are unchanged. See the *eMarket Data Exchange Specification* for the effect of the subaccount feature on the eMarket Web Services.

For Participants with registered subaccounts in CAMS, a default subaccount named "Default" is automatically created in the eMarket application. Participant users can use this subaccount just like their registered subaccounts to submit and view demand and virtual bids, to view their bids that cleared in the Day-Ahead Market and to request XML Download reports. This subaccount is used when a Participant with registered subaccounts does not specify a subaccount when submitting demand or virtual bids using the SubmitDemandBid XML request.

As described in §6 Demand Tab, users of Participants that have registered subaccounts in CAMS for a given Market Day must select a subaccount in order to view, submit or delete demand bids (be they Fixed, Price-Sensitive or Virtual (Inc/Dec) bids) using the eMarket GUI. Similarly, they must select a subaccount to view the demand bids that cleared in the Day-Ahead Market on the Demand By Portfolio display. They can also select a subaccount to filter the demand bid information returned in the XML Download reports; if a subaccount is not selected, demand bid information for all subaccounts is returned in the report. It is important to note that *only subaccounts active for the selected Market day and inactive subaccounts for which demand bids exist for the selected Market day will be listed in the drop-down selection lists presented to the users. Inactive subaccounts will appear with an asterisk (*) appended to their name*.

Note: Since Participant users can submit demand bids for several days into the future and it may be possible for the Participant to terminate (inactivate or delete) a subaccount after bids for future Market Days have been submitted, it is important to remember that the bids are not deleted when the subaccount is terminated; they remain in place and will be considered when clearing the Day-Ahead Market on those future days. *It is the responsibility of the Participant users to delete the bids that may be in place for future days when a subaccount is terminated.*

2. Interface Basics

This chapter describes the common topics and concepts used in the eMarket GUI. This chapter's sub-sections describe basic actions such as display navigation, screen layouts, filters, and data entry.

2.1 Common Display Fields and Elements

A typical display in eMarket looks like this:

The basic elements are:

A. **Header Area**

1. **Market Status** Indicator – displays "Open" or "Closed" depending on whether the market system is open to receive Participant offers and bids.

2. **Date and Time** – current wall clock date and time

3. **Participant Selector** – For most users, it simply shows which Participant they represent with their digital certificate. For *agent* users, it shows the Participant that the user is currently representing; the drop-down list shows all the Participants that the user can represent and provides the means to select a Participant on the list that they want to represent. For ISO New England's Customer Service personnel, it provides them the list of all Participants; they can select from the list the Participant on whose behalf they can submit offer/bids.

4. **Certificate User** – name of the user associated with the digital certificate used to access the eMarket application

5. **User** – this will normally be the same as the certificate user name and the drop-down list will show only that user's name. This drop-down box is for ISO New England's Customer Service personnel; it provides them the list of users registered under the selected Participant.

B. **Navigation Area**

1. **Navigation Tabs** – allow the user to choose which set of displays of eMarket to view. Only tabs for displays that the user is allowed to view based on his role are shown.

2. **Navigation Sub Tabs** – allow user to choose specific displays within a category.

3. **Data Window Title** –displays the title of the currently selected display from the tabs.

C. **Filters pane** – contains the filters for the selected display. See *section* 2.3 for more details.

D. **Display Pane**

1. **Display Title** – The display title reflects the type of information that is presented in the display, such as Day-Ahead Market (DAM) LMPs, generation schedules, and demand bids. The data display is determined by selections made from the navigation tabs and filters.

2. **Display Contents** – presents the data based on the selected navigation tabs and filters.

E. **Action Buttons** – A display can present any or all of the following buttons:

1. **New –** use this button to add a new row to a grid display and edit the data in the added row. You can use the button several times to add more than one row and then edit the data in the added rows. The data in the new row is shown on a pink background and it is not updated in the database until you select the **Update** button. The displayed rows of data will be shown with normal background when it is successfully stored in the database.

2. **Delete** – use this button to delete one or more rows of data in the database. Only the highlighted rows in the display are deleted from the database. You can select more than one row to delete at the same time.

3. **Update** – use this button after you change the data in the display and you want to submit the data to the database.

4. **Refresh** – use this button to retrieve the most recent data from the data base, i.e. to refresh the information shown on the display.

F. **Messages Pane** – shows error, warning and confirmation messages for user actions. It can be collapsed or expanded by clicking the double arrow icon in the pane header. See *section* 2.4 for more details.

G. **Display Update Progress Bar** – A display popup labeled "Please Wait …" will be presented when a display update is initiated. The popup will automatically close when the update completes.

2.2 Navigation

Users choose which display to view by using the Navigation Tabs. The tabs are presented in two rows. The top row defines the category of displays to view and the sub tabs show displays within that category.

The first row has up to five tabs which may show based on your defined roles. The five tabs are:

- **Public** – for use by all registered market system users; it provides access to displays of information from the cleared DA Market.

- **Generation** – provides access to the generating unit displays

- **Demand** – provides access to the demand and load response (PRD) displays

- **ARD** – provides access to the ARD displays

- **Regulation** – provides access to the regulation displays

The sub tabs row changes based on the navigation tab chosen. For example, choosing the Generation tab shows these sub tabs.

Users can always tell which display is being shown in two ways:

A. The selected navigation tabs are highlighted, and

B. The display name is shown in the display pane.

The eMarket displays are not different web pages. You will notice that the URL shown in your browser address bar does not change as you select different eMarket displays. Consequently, you cannot use the browsers "Back" and

"Forward" toolbar buttons to go back to a previously shown eMarket display. You must access it using the display tabs.

2.3 Filters Pane

The Filters pane provides a set of filters applicable to the currently shown display. It sits on the left side of the eMarket GUI window as shown below:

The filter selections vary based on the display. Some displays require only a date filter while others may require date, portfolio and asset filters. When you navigate to a display, the appropriate filter selections are shown in this pane.

The Filters pane can be hidden or resized to allow tailoring the eMarket layout to your liking. By default, the Filters pane is expanded as shown above. If you wish to completely hide the Filters pane, simply click on the double arrow icon in the pane header and the pane will collapse into a single bar on the left as shown below. To restore it, simply click on the double arrow icon again.

2.4 Messages Pane

The Messages pane shows error, warning and action confirmation messages. It appears at the bottom of the eMarket GUI window. By default only its header bar is shown. To view the full Messages pane at any time click on the double arrow icon in the pane header.

Whenever an update to save entered data is unsuccessful, the Messages pane is automatically expanded (if collapsed) and an error message is shown for each error on the display. Similarly the pane will be expanded if collapsed when warning messages about the submitted data are posted. When the Messages pane is expanded, it can be collapsed again by clicking on the double arrow icon in the pane header.

2.5 Data Displays and Entry

Enterable and non-enterable fields are distinguishable from each other by background color.

A.   Enterable fields are shown with a white background

B.   Non-enterable fields are shown with the screen background color or a grey background color

To update data, the process is similar throughout the eMarket GUI:

1. Click to place the cursor in the enterable field that you want to update or use the TAB key to move to the next enterable field.
2. Change the data to a new value.

- When the Enter key is hit or when another data entry field is selected, the background color of the field where data was entered is highlighted in pink to indicate that the new value is unsaved.

- The application title in the header changes from white to pink, as shown below.

3. Click the **Update** button to save the data to the database.

- The "Please Wait…" progress bar is shown in the header.

- When the update is complete, the "Please Wait…" progress bar is removed, all unsaved highlights are removed and at least one message is added to the Messages pane indicating the completion status.

- The changed data values are now stored in the database.

Inevitably users will make mistakes during data entry. When this happens, eMarket automatically expands the Messages pane showing one or more error messages and also highlights the field(s) in error. Similarly, when some of the entered data is accepted but violates certain cautionary checks, eMarket will expand the Messages pane to show warning messages.

When the market is closed (see §1.4), eMarket does not allow data submittals. To prevent data entry while the market is closed, eMarket shows you in several ways as shown below:

A. The Market Status Indicator will show that the market is closed.

B. The data cells in the display are shown with a grey background indicating that they are non-enterable.

C. The "Update", "Delete" and the "New" buttons on applicable displays are not shown.

Another item of note is that if you have new data in the display that has not been submitted to the database, it may be lost if you select the Refresh button or attempt to navigate to a different display. eMarket will warn you of this by presenting this dialog:

This allows you to click **OK** to continue and lose your changes, or **Cancel** to cancel your previous action thereby giving you the chance to save the entered data.

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3. General Tasks

This section discusses the tasks that apply to one or more categories within the application.

3.1 Manage Portfolios

Portfolios provide filters of data for the eMarket user interface. Portfolios are used to group resources and/or location nodes together to benefit you in viewing and managing data, and can be used in each of the ARD, Demand, Regulation and Generation sections of eMarket. By using portfolios, you can organize resources in a matter suited to your business. You can create any number of portfolios with each portfolio uniquely named by you to describe its usage. Portfolios that you create belong only to you and cannot be shared.

The combination of a user's portfolios determines the information that is reported in the asset-oriented XML Download reports. For example, the "Generation by Unit" XML report contains information about all the unique generating units *listed in all* of your portfolios.

A portfolio contains one or more resources, and a resource can appear in any number of portfolios. Any defined resource (ARD, Pnode, ATRR[1] or Unit) can be included in multiple portfolios. There is no requirement that a resource appear in at least one portfolio, so it is possible that a resource will not appear in any portfolio.

> **Note**: any unit, ARD asset, regulating resource or node that is not associated with a portfolio does not appear in the filters used for choosing a resource. In other words, only assets listed in portfolios can be selected to view/update its market data. That's because the user must first select a portfolio and only assets listed in the selected portfolio will be available for selection in the asset selection combo box drop-down list.

Portfolios are not effective dated. The data in a portfolio exists from when the portfolio is created until the portfolio is deleted

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[1] Alternative Technology Regulation Resources

The Portfolio Manager display under Generation, Demand, Regulation or ARD is used for creating, modifying or deleting portfolios. It looks like this:
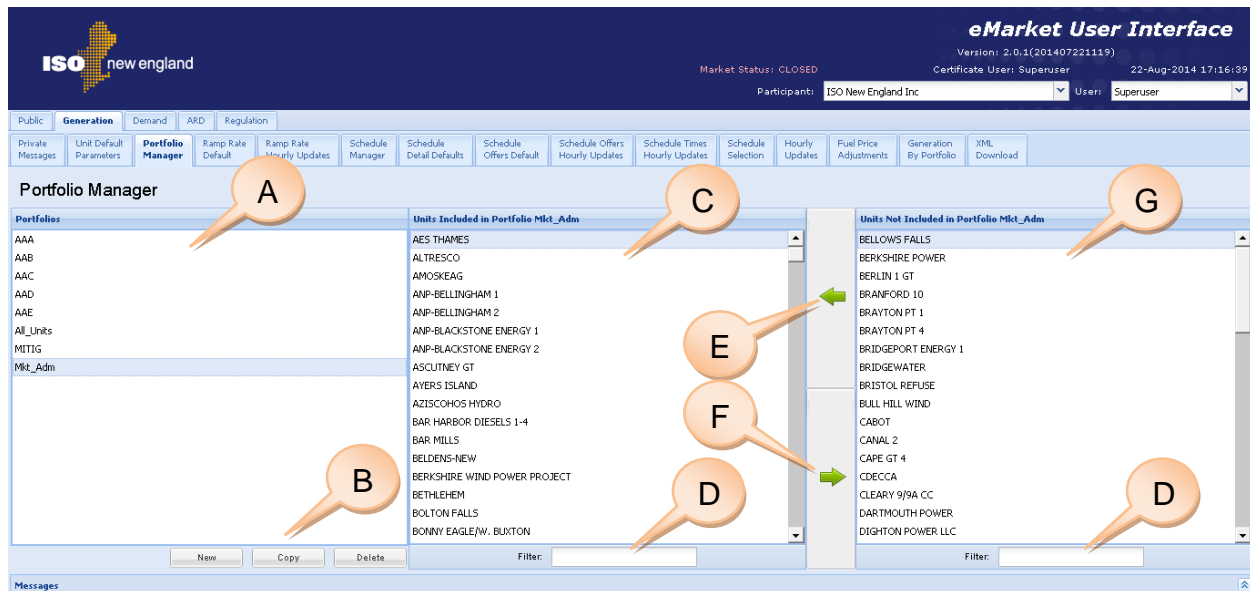
The basic features of this display are:

A. **Portfolio List**– this area shows the list of the existing portfolios owned by the user ordered by name.

B. **Portfolio Action Buttons** – these buttons are for managing the portfolios themselves:

   1. **New** – creates a new portfolio

   2. **Copy** – creates a copy of an existing portfolio with all of the same contents

   3. **Delete** – removes an existing portfolio

C. **Items Included List** – this middle section of the display shows the items that are contained within the portfolio currently selected in the **Portfolio List**.

D. **Filters** – you can type in characters which limit the items in the list above the filter. This is used to more easily find items.

E. **Add To Portfolio** (left arrow) – clicking this icon adds the selected item(s) in the **Items Not Included List** on the right to the **Items Included List**

F. **Remove from Portfolio** (right arrow) clicking this icon removes the selected items from the **Items Included List** and moves them to the **Items Not Included List**. ***Removing the last item in a portfolio automatically deletes the portfolio because a portfolio cannot be empty.***

G. **Items Not Included List** – this right section of the display shows the items that are not currently in the selected portfolio and can be added. Note that

with the Generation, Regulation and ARD Portfolio Managers, only items that belong to the Participant that the user represents are shown on this list.

The following sections go through the steps for creating, modifying, and deleting portfolios.

> **Note**: Demand portfolios are particular. When you create a Demand portfolio with a name that is the same as a Generation, Regulation and/or ARD portfolio, the generating units and ARDs listed in those portfolios, but not the ATRRs, are automatically listed in the Demand portfolio that you created. For example, if you create a Generation portfolio named "East" and add unit Gen1 to it. Then create a Demand portfolio named "East" and you will find that the Pnode for Gen1 is already listed. That is because generating units, including regulation capable units, and ARDs have Pnodes associated with them. Therefore if you want to create a Demand portfolio that includes the Pnodes of units and ARDs listed in Generation and ARD portfolios, give the same name to all three portfolios.

3.1.1 Create a Portfolio

There is no limit to the number of portfolios that you can create. Each portfolio is user-specific, meaning that only you can manage and use the portfolios that you create.

To create a portfolio:

1. In the navigation sub tabs, click the **Portfolio Manager** tab.

    - The appropriate Portfolio Manager display is shown in the display pane.

2. Click the **New** action button.

    - The following dialog is shown:
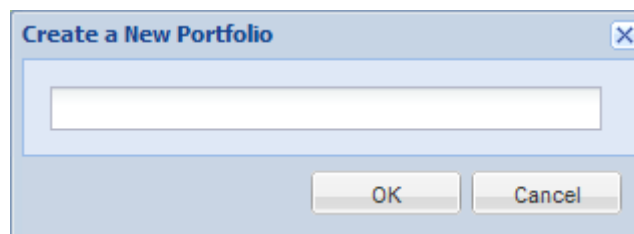
3. Enter the name of the new portfolio in the dialog box.
4. Click **Ok**.

    - The portfolio now appears in the Portfolio List

    - The very first item in the **Items Not Included List** is automatically added to the new portfolio, because a portfolio cannot be empty. You will have to remove it from the **Items Included List** if you don't want it in the portfolio, but *do this only after adding the items that you do want* listed in the new portfolio. *Removing it while it is the only item listed will automatically delete the portfolio that you just created*.

5. Select the desired item(s) in the **Items Not Included List.** Multiple contiguous items may be selected by holding down the shift key. Random items may be selected by holding down the Ctrl key.

   - The selected items are highlighted

6. Click the **Add to Portfolio** button

   - Items are added to the **Items Included List** for the selected portfolio

   - Items are removed from the **Items Not Included List**

7. (optional) Enter text into the **Filter** area below the **Items Not Included List**.

   - The list is reduced to only items that match the typed filter as shown:
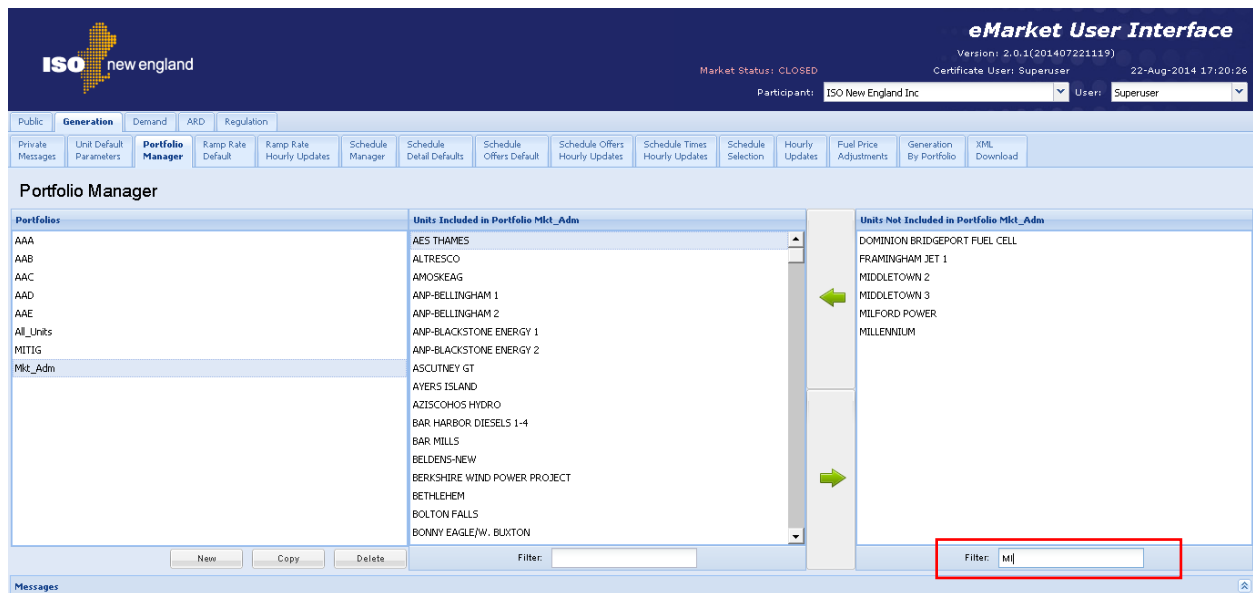
8. Repeat steps 5-7 until all desired items are listed in the portfolio.

3.1.2 View a Portfolio

1. In the navigation sub tabs, click the **Portfolio Manager** tab.

   - The appropriate Portfolio Manager display is shown in the display pane.

2. In the **Portfolios List** on the left, select the portfolio that you want to view.

   - The contents of the portfolio are displayed in the **Items Included List**

3. (optional) Enter text into the **Filter** below the **Items Included List**.

   - The list is updated to show only those items that match the filter

3.1.3 Modify a Portfolio

1. View the portfolio that you want to modify (§3.1.2)
2. To add items to the portfolio:

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a. Select the desired item(s) in the **Items Not Included List.** Multiple contiguous items may be selected by holding down the shift key. Random items may be selected by holding down the Ctrl key.

- The selected items are highlighted

b. Click the **Add to Portfolio** icon.

- Items are added to the **Items Included List** for the selected portfolio.
- Items are removed from the **Items Not Included List**.

3. To remove items from the portfolio:

a. Select the desired item(s) in the **Items Included List.** Multiple contiguous items may be selected by holding down the shift key. Random items may be selected by holding down the Ctrl key.

- The selected items are highlighted.

b. Click the **Remove from Portfolio** icon.

- Items are removed from the **Items Included List**
- Items are added to the **Items Not Included List**
- If the item removed is the last in the portfolio, the portfolio is automatically deleted.

4. Repeat steps 2-3 as desired.

3.1.4 Create a Copy of a Portfolio

1. View the portfolio that you want to copy (§3.1.2)
2. Click the **Copy** button.
3. The following dialog is shown:
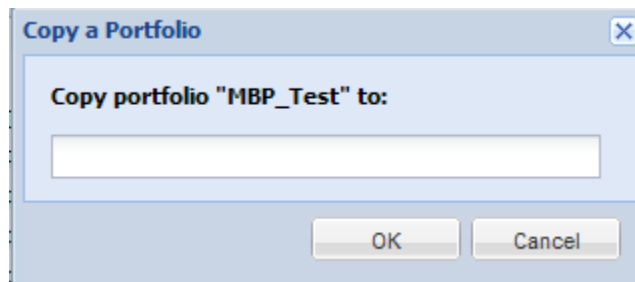
4. Enter the name of the new portfolio in the dialog.
5. Click the **OK** button to copy the portfolio.

3.1.5 Delete a Portfolio

1. View the portfolio that you want to delete (§3.1.2)
2. Click the **Delete** button.
3. The following dialog is shown:
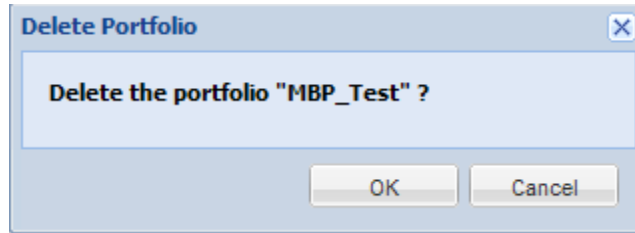
4. Click the **OK** button to delete the portfolio.

3.2 Upload or Download XML Files

Each Navigation Tab has an XML Download sub tab that looks similar to this one:
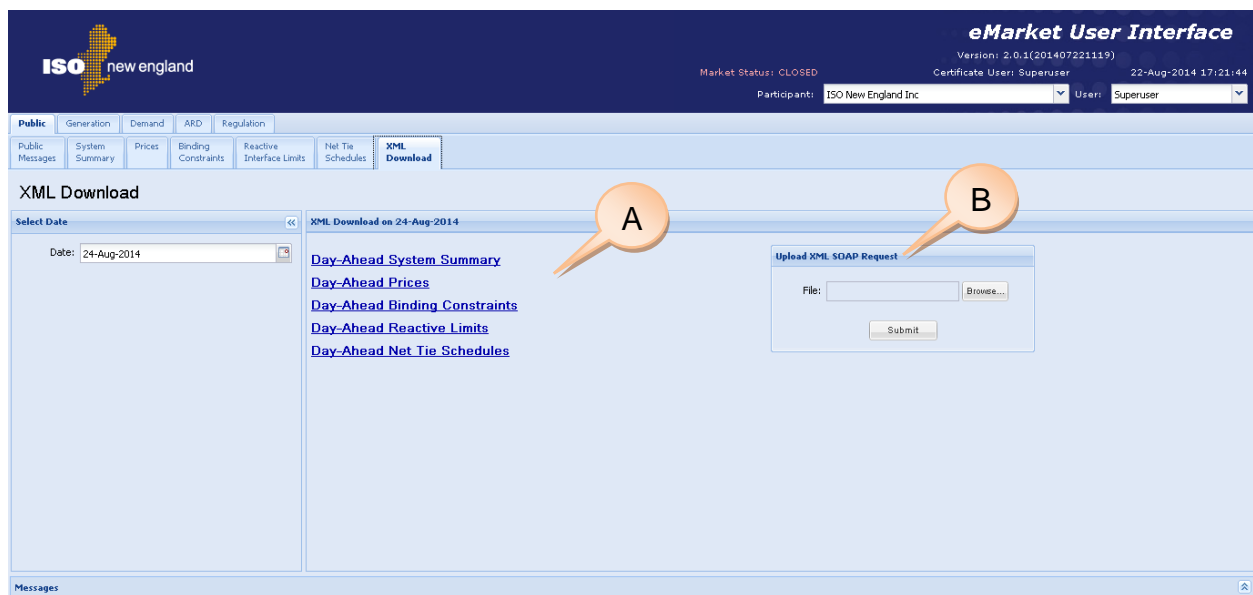
The fields on this display are:

A. **Download Report List** – list of reports/files available for download.

B. **Upload XML SOAP Request –** field and controls used to upload XML files

    1. **File** – name of the file containing an XML formatted request that you want to submit to the Market system. The name of the file is set by using the Browse button

    2. **Browse Button** – click to find and set the name of the file to upload

    3. **Submit Button** – click to upload the file once you have defined an upload filename

3.2.1 Download an XML file

To download XML reports/files:

1. In the Navigation sub tabs, click the **XML Download** tab.

- The XML Download display is shown in the display pane.

2. Select the desired date from the **Date** filter located in the **Filters pane**.
3. Click the name of the specific XML report/file to be downloaded. This will bring up a popup giving you the choice to Open or Save the downloaded XML file. Remember that if you select Open, your browser will attempt to open the files based on its .xml filename extension and that the application designated to view .xml files may be your browser. In the event that it's your browser, the file may open in your current window tab or a new tab depending on the settings of your browser. See note in §1.7.
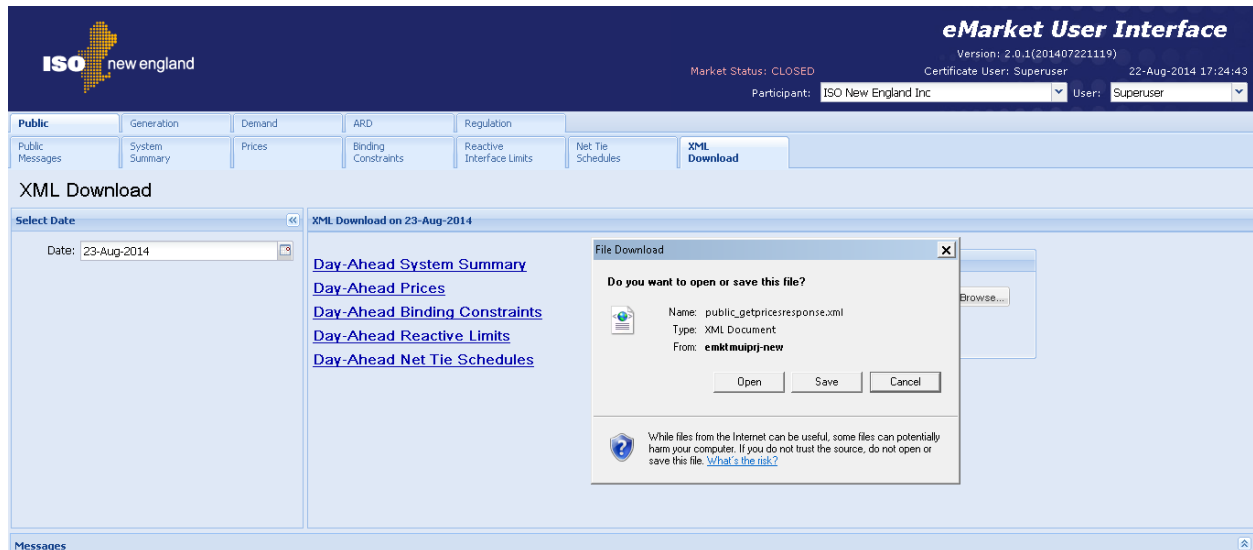
4. Alternatively, you can right-click the file that you want to download. That will bring you a popup menu and give you more choices as to what you want to do with the downloaded XML file.

3.2.2 Upload an XML Request file

You can create files containing XML formatted requests to submit or get data from the Market system. Refer to the eMarket Data Exchange Specification for information on how to create all the various kinds of eMarket requests that can be created in an XML file. You can upload a file containing an XML formatted eMarket request using any of the XML Download display tab.

To upload an XML request file:

1. Click the **XML Download** tab under any of the Navigation sub tabs.

- The XML Download display is shown in the display pane.

2. In the **Upload XML SOAP Request** box on the display click the **Browse** button.

- The Windows Choose File dialog opens.
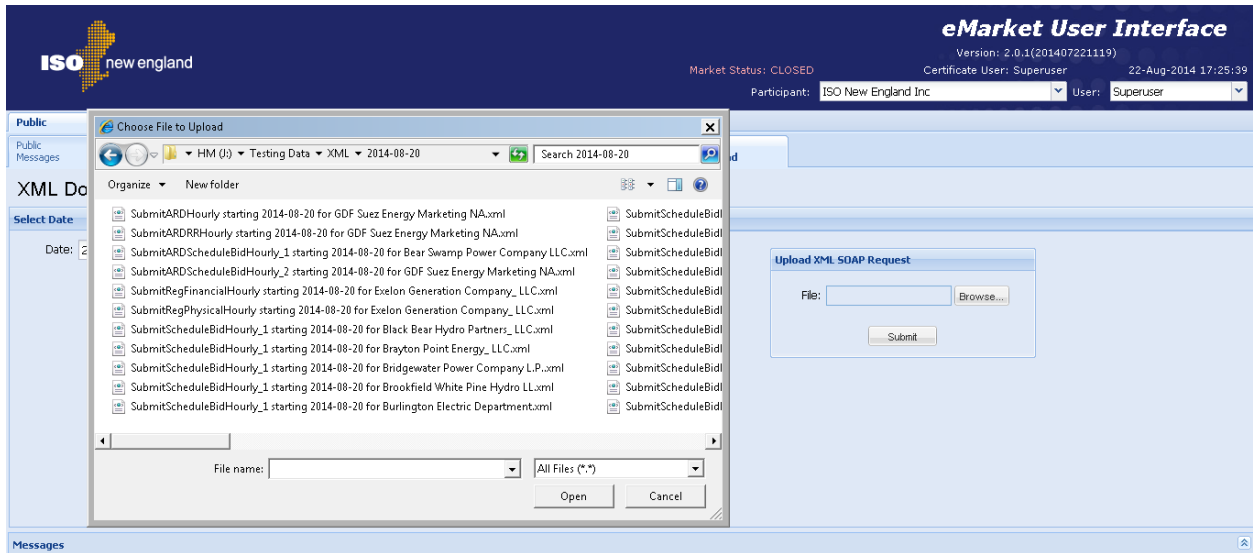
3. Select the desired file that you want to upload and click **Open**.

- The filename is shown in the Upload XML SOAP Request – File box.

4. Click the **Submit** button

5. An XML message file is downloaded in response to every upload request. It contains a completion message or the data that you requested. Note that the name of the response file is distinctive when it's an error response. You will be presented with the following popup giving the choice to open, save or discard the file.
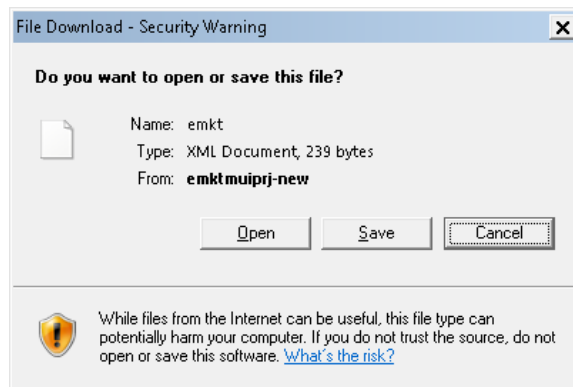
3.3 Public and Private Messages Displays

These eMarket displays provide the means for eMarket to communicate messages to all market system users (Public Messages) or to specific groups of users (Private Messages). The messages are assigned priorities by the sender.

Note that this messaging capability is currently not used by ISO New England.

4. Generation Tab

To access the Generation Tab, you must be a registered user with a Generation Read/Write or Read-Only role. When you have this access, the Generation tab will be shown and selecting it will show all of its sub tabs as shown below.

4.1 Generation Offer Concepts

When submitting data, it is important to understand the hierarchy of the Generation offer data and the implications of data overrides. Figure 1 below shows the hierarchy of the Generation displays used to submit data and where the same offer data appears in different displays, the data of which display has precedence over (overrides) the others. [**Note**: only the data elements subject to overrides are shown.]

The Unit Default Parameters display is at the root of the hierarchy. The Unit record itself is initially defined by ISO New England with default offer data when the asset is instantiated in the Market system. Participants must update some data values, like the unit's default dispatch availability status and single value ramp rate, using the display. For units capable of providing off-line reserves, the default Claim10 and Claim30 values must be updated on this display.

To participate in the energy market, a Participant must define at least one schedule for the unit using the Schedule Manager display and all of the child data that goes with it. The schedule defines a container for which detail offer data must be submitted.

Managing generating unit schedules is accomplished by performing the following general steps:

- Create or modify a schedule using the Schedule Manager display

- Create or modify schedule-specific default data, which include MW operating limits, Startup and Notification times, MinRun and MinDown times, and market participation (day-ahead or real time) using the Schedule Detail Defaults display.

- Create or modify schedule-offer default data (Startup and NoLoad costs and Incremental Energy Offers [Price/MW pairs], including fuel blend data for multi-fuel generators) using the Schedule Offers Default display.

- Identify the schedule or schedules to be used in the clearing of the Day-Ahead and Real Time (Balancing) Markets using the Schedule Selection display.

For units that are eligible to participate in the Regulation Market, Regulation Offers must be submitted using the displays under the Regulation asset tab.

Unit Default Parameters Display
For: Unit – Daily, effective dated

Default Status } - (Eco, SS, UA)
Daily Claim 10 }
Daily Claim 30 }
Daily Ramp Rate (MRR) (single value)

Unit Ramp Rate Default Display
For: Unit – Daily, effective dated

Daily Ramp Rate Curve (MW/Ramp Rate pairs)

Overrides

Unit Hourly Updates Display
For: Unit, Market Day, Hour

Status - - - - } (Eco, SS, UA)
Claim 10 }
Claim 30 }
Emergency Min
Economic Min
Economic Max
RT High Operating Limit

Overrides

Unit Ramp Rate Hourly Updates Display
For: Unit, Market Day, Hour

Ramp Rate
Ramp Rate Curves (MW/Ramp Rate pairs)

Overrides
Overrides
Overrides

Schedule Manager Display
For: Unit

All Schedules

Schedule Detail Defaults Display
For: Market Day, Unit Schedule

Emergency Min
Economic Max
Economic Min
RT High Operating Limit
Startup Times (Hot, Inter, Cold)
Notification Times (Hot, Inter, Cold)
Hot to Cold, Hot to Inter Times
MinRun, MinDown Times
Max Daily Energy
Max Daily Starts
...

Schedule Offers Default Display
For Market Day, Unit Schedule

MW/$$
Startup Costs (Hot, Inter, Cold)
No Load Cost
Fuel Blends
Use Startup No Load Flag
Use Offer Slope Flag

Overrides

Data submittals using only this display will be allowed during the RT Intraday Reoffer periods.

Schedule Offers Hourly Updates Display
For Market Day, Unit Schedule, Hour

MW/$$ / Fuel Blend / Use Offer Slope Flag
Costs / Fuel Blend / Use Startup No Load Flag

Overrides

Schedule Times Hourly Updates Display
For Market Day, Unit Schedule, Hour

Startup Times (Hot, Inter, Cold)
Notification Times (Hot, Inter, Cold)

Schedule Selection Display
For: Market Day

All Units in portfolio, All Schedules

Fuel Price Adjustments Display
For: Market Day, Unit, Fuel

...

Figure 1 – Generation Display Hierarchy and Data Precedence

The other displays allow for overriding schedule based default data or a unit's default dispatch availability status data. Offer data in other displays higher in the hierarchy are overridden by the presence of data in these displays:

- The Unit Ramp Rate Default display can be used to define a default ramp rate curve for a unit that overrides the simple slope defined with the Unit Default Parameters display.

- The limits on the Hourly Updates display (Emergency Min, Economic Max, Economic Min, and RT High Operating Limit) override for specified hours of the day the corresponding limit values defined in the Schedule Detail Defaults display for all schedules.

- The dispatch availability status (Unavailable, Economic, Must Run) on the Hourly Updates display overrides for specified hours of the day the default dispatch availability status (Default Status) defined on the Unit Default Parameters display. For units capable of providing off-line reserves, the display can be used to override for specific hours of the day the default Claim10 and Claim30 values defined on the Unit Default Parameters display.

- The Startup and NoLoad costs and the incremental energy offers (Price/MW pairs) along with their associated fuel blend data for multi-fuel units shown on the Schedule Offers Hourly Updates display override for specified hours of the day the default values defined in the Schedule Offers Default display for the corresponding schedule.

- The Startup and Notification times shown on the Schedule Times Hourly Updates display override for specified hours of the day the default values defined in the Schedule Detail Defaults display for the corresponding schedule.

4.2 Generation Portfolio Manager Display

A generation portfolio is a collection of generating resources that is defined by each individual generation user. The user assigns a unique name to each portfolio when it is created. Once a portfolio is created, the user assigns it one or more generating units. A generating unit can be assigned to more than one portfolio.

Data is filtered by generation portfolios on the following displays:

- Unit Default Parameters

- Unit Multiple Ramp Rates Default

- Unit Ramp Rate Hourly Updates

- Schedule Manager

- Schedule Detail Defaults

- Schedule Offers Default

- Schedule Offers Hourly Updates

- Schedule Times Hourly Updates

- Schedule Selection

- Unit Hourly Updates

- Fuel Price Adjustments

- Generation by Portfolio

Note: A unit that is not associated with a portfolio cannot be selected in these displays' tooltray filters.

See §3.1 Manage Portfolios for more information on the purpose of portfolios and details on using this display.

4.3 Unit Default Parameters Display

The Unit Default Parameters display allows you to view unit ownership information and to update a unit's default ramp rate, dispatch status and when applicable, its off-line reserve Claim Capability values. Generator offer data is defined on a unit basis, as well as on schedule basis. The Unit Default Parameters display is for managing the unit's more static offer data.

ISO New England requires that the Participant submit to the ISO, unit specific information about a generating unit. This information is used to create the initial generating unit record in the market system database and must be submitted in writing to ISO-NE and verified by ISO-NE before the Participant submits offers. (For more information on the data required, see *ISO New England Manual for Market Operations, Manual 11*.

When the unit-specific information is received, the ISO creates the necessary records in the market system database. Some of this information is shown on the Unit Default Parameters display, and users cannot modify the information from here.

The format of the Unit Default Parameters display is shown below:

The fields on this display are:

- **Asset ID** – the ISO-NE generated unique identifier for the asset. This is the preferred reference number used in doing business with the Customer Service Department.
- **Unit Short Name** – the abbreviated name of the generating unit.
- **Unit Long Name** – the full name or description of the generating unit. This label is shown on other generation displays and in the Unit filter of all generation displays

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- **Type of Unit** – descriptive name of the type of unit
- **Ramp Rate (MW/Min)** – the number of MW per minute with which the unit can respond to dispatch signals when it is on-line. This value is used in the calculation of spinning reserves unless it is overridden by a default ramp rate curve on the Ramp Rate Default display or an override for an hour defined on the Ramp Rate Hourly Updates display.
- **Ramp Rate Cap** – the unit's demonstrated ramp rate Capability value that was established during the last audit conducted by ISO New England. The offered value will be capped (constrained) to this value if it is defined. If the demonstrated capability value is undefined, it will be shown as "UD".
- **Claim 10 Capable** – indicates if the generating unit is registered as capable of producing Ten Minute Non-Spinning Reserve from an offline state.
- **Claim 10 (MW)** – the number of MW with which a resource can respond within 10 minutes from an offline state. Used in the calculation of Ten Minute Non Spinning Reserves.
- **Claim 10 Cap** – the unit's demonstrated Claim 10 Capability value that was established during the last audit conducted by ISO New England. The offered value will be capped (constrained) to this value if it is defined. If the demonstrated capability value is undefined or the unit is not Claim 10 Capable, it will be shown as "UD".
- **Claim 30 Capable** – indicates if the generating unit is registered as capable of producing Thirty Minute Reserve from an offline state
- **Claim 30 (MW)** – the number of MW with which a resource can respond within 30 minutes from an offline state. Used in the calculation of Thirty Minute (non-spinning) Reserves.
- **Claim 30 Cap** – the unit's demonstrated Claim 30 Capability value that was established during the last audit conducted by ISO New England. The offered value will be capped (constrained) to this value if it is defined. If the demonstrated capability value is undefined or the unit is not Claim 30 Capable, it will be shown as "UD".
- **Lead Participant ID** – the ISO-NE assigned unique identifier of the Market Participant whose users are responsible for submitting the operating information of the generating unit using the eMarket application.
- **Lead Participant Name** – the full name of the Market Participant whose users are responsible for submitting the operating information of the generating unit using the eMarket application.
- **DA Schedule Required** – indicates if the generating unit is classified as a capacity resource and therefore required to submit generation offers in the DA Market. A capacity resource is a generating unit for which the Participant has acquired a Capacity Supply Obligation (CSO) in the Forward Capacity Market (FCM) and is not an intermittent resource.
- **Regulation Resource** – indicates if the generating unit is registered as a regulation resource
- **Default Status (Economic/Unavailable/Must Run)** – the default dispatch availability status of the unit.

4.3.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- 0 ≤ Ramp Rate
- A warning will be issued if the Ramp Rate exceeds Ramp Rate Cap when the demonstrated capability is defined (not "UD")
- A warning will be returned if the unit is Claim 10 capable and any of the following conditions exist

  - Claim 10 = 0 or NULL
  - Claim 10 > Claim 10 Cap when the demonstrated capability is defined (not "UD") – meaning that the Claim 10 Cap value will be used instead of the offered value

- A warning will be returned if the unit is Claim 30 capable and any of the following conditions exist

  - Claim 30 = 0 or NULL
  - Claim 30 > Claim 30 Cap when the demonstrated capability is defined (not "UD") – meaning that the Claim 30 Cap value will be used instead of the offered value
  - Claim 30 < Claim 10 – meaning that the Claim 10 value will be used instead of the offered Claim 30 value.

4.3.2 View Specific Unit Information

1. In the Generation Navigation sub tabs, click the **Unit Default Parameters** tab.

   - The Unit Default Parameters display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.

      - The default unit data for the selected date and selected unit is shown in the Unit Default Parameters display.

4.3.3 Modify Unit Default Claim 10/30 and Ramp Rate

A unit's Claim 10/30 values and its default ramp rate data are specified at the unit level. To define this data:

1. View the desired unit's information as described in §4.3.2
2. Enter all of the following unit-specific information:

   a. Claim 10 (MW) if Claim 10 Capable
   b. Claim 30 (MW) if Claim 30 Capable
   c. Ramp Rate (MW/Min)

3. Click the **Update** button to save the data.

4.3.4 Modify Unit Default Status

1. View the desired unit's information as described in §4.3.2
2. Select one of the following radio buttons:

   a. Economic
   b. Unavailable
   c. Must Run

3. Click the **Update** button to save the selection.

4.4 Unit Multiple Ramp Rates Daily Default Display

This display provides for viewing and modifying a unit's default ramp rate curve. A ramp rate defines how quickly a unit can change its generation in MW per min. Depending on the unit's physical characteristics this rate can vary as a function of the unit's MW output. When that is the case, the Participant can use this display to model the unit's ramp rate curve. Ramp rate curves consist of Energy Ramp Rate (MW/Minute) over a range of the unit's MW output. Up to 10 MW ranges can be defined. The default ramp rate curve shown on the display is effective for the date selected and for all future days until it is redefined or removed at a future date. Note that the effective date of the data may be a date prior to the date selected. See §1.5 Effective Dates of Data.

Note: The existence of a ramp rate curve on this display <u>overrides</u> the simple slope specified in the Ramp Rate field on the Unit Default Parameters display.

The format of this display is shown below:

The fields on this display are:

- **MW** – the unit's MW output level up to which the ramp rate applies.

- **Energy Ramp Rate**– the MW/Minute that the unit can change generation while its MW output is less than or equal to the MW value specified and greater than a lesser MW value specified on a separate row or zero if none. The ramp rate specified for the largest MW value will be used if the unit's MW output is greater than this largest MW point defined for the curve.

4.4.1 Data Validation Rules

- Energy Ramp Rate ≥ 0; MW > 0
- eMarket will give you a warning if any of the entered rates is greater than the Ramp Rate Cap shown on the Unit Default Parameters display.
- MW/Ramp Rate pairs can be entered in any order. eMarket will sort them and show them in increasing MW value order after the data is submitted and stored in the database.

4.4.2 View Ramp Rates

To view the ramp rate curve segments of a unit:

1. In the Generation Navigation sub tabs, click the **Ramp Rate Default** tab.

    - The Unit Multiple Ramp Rates Daily Default display is shown in the display pane.

2. In the **Filters pane**:

    a. Select the desired date from the **Date** filter.
    b. Select the desired portfolio from the **Portfolio** filter.
    c. Select the desired unit from the **Unit** filter.

        - The display shows the selected unit's default ramp rate curve data for the selected date; if a ramp rate curve is not defined for the selected date, nothing is shown on the display.

4.4.3 Create Ramp Rates

To create segments of a ramp rate curve for a unit:

1. View the unit's ramp rate curve segments (§4.4.2).
2. Click the **New** button; you can click more than once if you want to create multiple segments.

    - A new row for each click is added in the grid with a pink background to indicate it has not been saved.

3. Type in the desired **MW** and **Energy Ramp Rate** values in the appropriate cells.
4. Repeat steps 2-3 as desired.
5. Click the **Update** button to save the data.

4.4.4 Modify Ramp Rates

To update ramp rate curve segments:

1. View the unit's ramp rate curve segments (§4.4.2).

2. (optional) To add new segments to the curve, do as described in §4.4.3.
3. (optional) To delete existing segments in the curve:

   a. Click in the row to be deleted. The row will be highlighted.
   b. Click the **Delete** button. The row is removed.

4. To change the parameters of a curve segment, enter the desired **MW** and **Energy Ramp Rate** values in the appropriate cells.
5. Repeat steps 2-4 as needed.
6. Click the **Update** button to save the data.

Note: to use the Ramp Rate defined on the Unit Default Parameters display, starting on the date selected, all Ramp Rate segments must be deleted from this display.

4.5 Unit Ramp Rate Hourly Updates Display

This display provides for viewing, entering and modifying hourly updates to a unit's default ramp rate characteristics for a given market day. A ramp rate defines how quickly a unit can change its generation in MW per min. Depending on the unit's physical characteristics this rate can vary as a function of the unit's MW output, in other words the unit's ramp rate characteristic is a curve defined as ramp rate for up to 10 ranges of the unit's MW output. With this display, you can define a unit's ramp rate characteristics on an hourly basis for a given market day to be either a single ramp rate or a ramp rate curve and thereby account for the unit's physical configuration throughout the day.

Note: The existence of a ramp rate definition for an hour on this display overrides both the simple slope specified in the Ramp Rate field on the Unit Default Parameters display and the default ramp rate curve for the day, if one is defined, specified on the Ramp Rate Default display.

The format of this display is shown below. There are two illustrations. The only difference is in the default values shown in the upper section when there is a default ramp rate curve defined for the unit on the selected market day date and when there is none.

The Default Values section is provided as a reference to show what are the default daily values for the chosen day that are being overridden by the hourly update values entered in the section below. The fields in this section of the display are:

- **Daily RR** – the unit's default energy ramp rate defined on the Units Default Parameters display for the selected market day date.

- **#/MW/RR** – the unit's default ramp rate curve segments or MW blocks; # is the segment number, MW is the unit's MW output upperbound for the block

and RR is the ramp rate value for the range of MW output from the MW value of the previous segment (0 if there is no previous segment) up to the MW value of the segment. The RR of the last segment is the value used for unit MW output values greater than the MW value of the last segment.

The Default Values section can be collapsed using the double up-arrow icon at the extreme right of the section title bar to show more rows in the hourly section as shown below. The collapsed section can be expanded again to see the default values using the double down-arrow icon at the extreme right of the collapsed section title bar.

The Override Hourly Values section shows each hour of the day and fields to enter overrides. When the fields are blank, it means that there is no override of the default values for that hour. Hence setting all data entry fields for an hour to blank (NULL) means that the applicable daily default value is to be used for the market hour; i.e. it is equivalent to removing the override for the market hour.

The description of the fields in the Override Hourly Values section of the display are the same as those in the Default Values section, except they define the unit's ramp rate characteristic for the hour-ending shown in the Hour column. *Either a single ramp rate override or a ramp rate curve override can be defined for an hour, not both.*

The top row of the grid provides you with the means to enter or clear overrides for a selected range of hours. You select the "from" and "to" hours using the drop-down list boxes under the Hour column, enter a single ramp rate or a ramp rate curve using the data entry fields on the right and then select the "Copy" button. As illustrated below, the values entered in the top row are copied to the rows for each hour in the range selected and the cells where values are being changed are highlighted. This process can be repeated to enter different ramp

rate updates for other hour ranges before selecting the "Update" button to save the values in the database. If you do use the top row, you need to *remember that leaving all data entry field on this row blank means that you want to remove the overrides for all hours in the range selected*. For example, if you want to remove overrides for every hour of the day, simply select "01" as the "From" hour and "24" as the "To" hour in the Hour drop-down selections, select Copy to blank out all data entry fields below and then select Update. Since you did not enter anything in the data entry fields, all overrides are removed.

Before selecting "Copy", example where you want to set the unit's ramp rate characteristics to a single ramp rate of 1.5 for hours ending 07 through 12.

After selecting "Copy", the values entered on the top row are copied to the rows for each of the selected hours. The fields where values are changed are highlighted to show where data entries will be made when the "Update" button is selected.

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Before selecting "Copy", example where you want to set the unit's ramp rate characteristics to a different ramp rate curve for hours ending 04 through 06.

After selecting "Copy", the values entered on the top row are copied to the rows for each of the selected hours. The fields where values are changed are highlighted to show where data entries will be made when the "Update" button is selected.

4.5.1 Data Validation Rules

- Ramp Rate ≥ 0; MW > 0

- eMarket will give you a warning if any of the entered rates is greater than the Ramp Rate Cap shown on the Unit Default Parameters display.

- MW/Ramp Rate pairs can be entered in any order. eMarket will sort them and show them in increasing MW value order after the data is submitted and stored in the database.

- Either a single ramp rate or a ramp rate curve can be defined for an hour, not both.

4.5.2 Override Unit's Default Ramp Rate for a Day and Hour

As discussed in §4.3 Unit Default Parameters Display, you define on this display a unit's daily default ramp rate. Similarly, as discussed in §4.4 Unit Multiple Ramp Rates Daily Default Display, you can define on this display a daily default ramp rate curve for the unit that supersedes the daily default. Both the daily default single ramp rate and the daily default ramp rate curve for a selected market day are shown in the Default Values section of the display. If you want to profile the unit's ramp rate characteristics on an hourly basis,:

1. In the Generation Navigation sub tabs, click the **Ramp Rate Hourly Updates** tab.

   • The Unit Ramp Rate Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.

      ▪ The display reflects the hourly overrides for the selected unit.

3. To update the overrides for individual hours:
   a. Enter the override value for a single ramp rate or for a ramp curve in the hours that you wish. Remember that if you are switching from a ramp rate curve override to a single ramp rate value, you need to blank each segment of the ramp rate curve in addition to entering the single ramp rate value.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours
   a. Specify the range of hours by selecting "From" and "To" hour-ending values in the **Hour** drop-down list on the top row.
   b. Enter the override value for either a single ramp rate or a ramp rate curve in the top row.
   c. Select the **Copy** button to copy the entered values to the rows for each hour in the selected range.
   d. Repeat steps a through c to enter different values in other range of hours if necessary.
   e. Click the **Update** button to save the data for the selected hours.

4.6 Schedule Manager Display

Schedule Manager enables users to view, create, and update schedules.
The format of this display is shown below:

The fields on this display are:

- **Schedule Name** – a short name for the schedule, defined by the Participant. This label appears in the Schedule filter on the Generation displays.
- **Description** – a brief description of the schedule, defined by the Participant. This label appears in the Generation by Portfolio display, which shows the DAM results for units by generation portfolio.
- **Schedule Type** – identifies the number and type of the schedule, as follows:
  - **0 - 94** – price-based schedules
  - **95 - 99** – cost-based schedules, reserved for use by ISO New England.

By convention, schedules 95 through 98 are **Reference schedules**, none of which will be flagged as available. They show the reference values determined by the ISO-NE Market Monitor for each of the fuels that the unit is configured to use.

Schedule 99 is the **Mitigation schedule**, and it is the only one that will be flagged as available. It shows the generator parameters that will be used by the Market clearing software to dispatch the generator and to calculate LMPs at the generator node **should the generator be mitigated**.

- Schedule 95, with the name XXXX_R4 where XXXX is the generator short name, is the reference schedule for the generator's fourth fuel;
- Schedule 96, with the name XXXX_R3 where XXXX is the generator short name, is the reference schedule for the generator's third fuel;
- Schedule 97, with the name XXXX_R2 where XXXX is the generator short name, is the reference schedule for the generator's second fuel.
- Schedule 98, with the name XXXX_R1 where XXXX is the generator short name, is the reference schedule for the generator's first fuel; for single-fuel units, this will be the only reference schedule.
- Schedule 99, with the name XXXX_M where XXXX is the generator short name, is the mitigation schedule for the generator.

4.6.1 Create a New Schedule

Users can define more than one price-based schedule for a generating unit. To assist in creating multiple schedules for unit, the Schedule Manager display allows you to assign a schedule name and a description to a specific unit schedule. To create a new schedule:

1. In the Generation Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired unit from the **Unit** filter.

      ▪ Existing schedules for the selected unit are listed.

3. Click the **New** button.
4. Type the following information in the new row:

   a. Schedule Name
   b. Description

5. Select an unused type of schedule from the **Schedule Type** drop-down menu.
6. Click the **Update** button to save the data.

4.6.2 Modify a Schedule's Name and/or Description

After a schedule is created and saved to the database, you cannot modify the Schedule Type field. Only the schedule's name and description can be changed.

To modify an existing schedule's parameters:

1. In the Generation Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired unit from the **Unit** filter.

      ▪ The existing schedules for the selected unit are listed.

3. Modify either or both of the following in any of the listed schedules:

   a. Schedule Name
   b. Description

4. Click the **Update** button to save the data.

4.6.3 Delete a Schedule

1. In the Generation Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired unit from the **Unit** filter.
      ▪ The existing schedules for the selected unit are listed.

3. Select a cell in the row of the schedule that you want to delete.
4. Click the **Delete** button. If the schedule is not flagged available in any of the market days for the period that market information is preserved in the market database, it is deleted; otherwise you will get an error message.

4.7 Schedule Detail Defaults Display

The Schedule Detail Defaults display is used to view and manage a generating unit's default market offer parameters. The format of the display is shown below:

The fields on this display are:

- **Schedule Available** – indicates whether the schedule is to be used. This is managed on the Schedule Selection display.

- **Day Ahead Market** – this check box indicates whether the schedule is enabled for Day Ahead Market use.

- **Real Time Market** – this check box indicates whether the schedule is enabled for Real Time Market use.

- **Fast Start (10 min)** – if the unit is Claim 10 capable[2], this indicates whether the entered parameters qualify the unit for 10-min fast startup operation and therefore make it eligible for off-line non-spinning reserves.

- **Fast Start (30 min)** – if the unit is Claim 30 capable[2], this indicates whether the entered parameters qualify the unit for 30-min fast startup operation and therefore make it eligible for off-line non-spinning reserves.

- **Max Daily Starts** – the maximum number of times that the unit can be started in one operating day under **normal** operating conditions. A blank field means the value is unlimited.

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[2] The indication of whether the unit is Claim 10 or Claim 30 Capable can be seen on the Unit Default Parameters display (§4.3)

- **Max Daily Energy** – the maximum amount of energy that the unit can produce in one operating day. A blank field means the value is unlimited.

- **Min Downtime** – the minimum number of hours that the generator owner requires between the time the generator is released for shutdown by the ISO and the time the generator is scheduled to be released for dispatch to the ISO.

- **Min Runtime** – the minimum number of hours that the unit must remain online after it has been scheduled to reach its Economic Minimum Limit before it can be released for shutdown from its Economic Minimum Limit.

- **Hot to Cold Time** – the time (in hours) for the unit to transition from hot to cold status.

- **Hot to Inter Time** – the time (in hours) for the unit to transition from hot to intermediate status.

- **Hot Notification Time** – the notification time (in hours) needed for the unit to synchronize to the system from a hot temperature state; the time is measured from the time the startup dispatch instruction is received from the ISO.

- **Inter Notification Time** – the notification time (in hours) needed for the unit to synchronize to the system from an intermediate temperature state; the time is measured from the time the startup dispatch instruction is received from the ISO.

- **Cold Notification Time** – the notification time (in hours) needed for the unit to synchronize to the system from a cold temperature state; the time is measured from the time the startup dispatch instruction is received from the ISO.

- **Hot Startup Time** – the time (in hours) for the unit to startup from hot temperature state after the notification time elapses.

- **Inter Startup Time** – the time (in hours) for the unit to startup from intermediate temperature state after the notification time elapses.

- **Cold Startup Time** – the time (in hours) for the unit to startup from cold temperature state after the notification time elapses.

- **Emergency Min** – the lowest level of energy in MW the unit can produce and maintain a stable level of operation. The Participant will allow operation of the unit at this level during a Minimum Generation Emergency.

- **Economic Min** – the lowest MW level at which the unit can be economically dispatched.

- **Economic Max** – the highest MW level at which the unit can be economically dispatched.

- **RT High Operating Limit** – the maximum MW output that the unit can achieve in response to an ISO New England request for energy.

- **Condense Available** – indication of whether the unit is available to condense.

- **Condense Startup Cost** – the price for starting up the unit in synchronous condensing mode.

- **Condense Hourly Cost** – the hourly cost of running the unit in synchronous condensing mode.

- **Condense Power** – the unit's MW consumption while running in synchronous condensing mode.

- **Condense Notification Time** – the notification time (in hours) needed for the unit to engage in synchronous condensing mode.

4.7.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- Data is entered for each of the following values, i.e. non-blank values appear in the data entry cells:

  - Min Downtime and Min Runtime
  - Hot to Cold and Hot to Inter times
  - All Startup and Notification times
  - All limits (Emergency Min, Economic Min, Economic Max and RT High Operating)

  Only Max Daily Starts, Max Daily Energy and the Condense parameter values can be blank (unspecified).

- Emergency Min > 0 if Economic Max > 0
  Economic Min > 0 if Economic Max > 0
  i.e. the Emergency and Economic Minimum limits must be greater than zero if the Economic Maximum limit is greater than zero

- Economic Max ≥ CSO if CSO > 0 – Warning
  i.e. for a resource with a Capacity Supply Obligation, its Economic Maximum Limit *should* be at least as high as its Capacity Supply Obligation. A warning will be returned if the rule is violated; it's only a warning because the resource may not be fully available.

- Emergency Min ≤ Economic Min ≤ Economic Max ≤ RT High Operating Limit
  This is the *limit nesting rule*. The data submitted is rejected if this rule is violated.
  If the schedule is flagged as available at the time the values are submitted and the unit is a regulating resource, the limit nesting rule is extended to the regulation limits (i.e. Economic Min ≤ Regulation Low < Regulation High ≤ Economic Max) where the regulation limits are the more constraining of the limits among the daily default (those entered on the Regulation Offers Daily Default display) and the hourly updates (those entered on the Regulation

Hourly Updates display) for the selected market day. A warning message is returned when the limit nesting rule with regulation limits is violated.

- Hot To Cold Time ≥ Hot To Inter Time ≥ 0
- Cold Startup Time ≥ Inter Startup Time ≥ Hot Startup Time ≥ 0
- Cold Notification Time ≥ Inter Notification Time ≥ Hot Notification Time ≥ 0
- Min Downtime ≥ 0
- 24 ≥ Min Runtime ≥ 0
- Max Daily Energy must be blank to specify an unlimited capacity or a value greater than zero if you want to define a limit on the unit's energy capability and be treated as a Limited Energy Generation (LEG) resource. If a non-blank value is entered, then Max Daily Energy should be greater than or equal to Economic Min x Min Runtime; a warning message will be reported if it is not.
- When a unit self schedules for a total number of hours greater than its Min Runtime, the Max Daily Energy (if defined) must be greater than or equal to Economic Min x the number of hours that the unit self schedules or a warning will be returned.
- For Claim 10 capable Units, a warning will be returned when the sum of cold notification and cold startup time exceeds the Claim 10 criteria, i.e. ≥ 10min because time values make the unit ineligible for off-line reserve capability.
- For Claim 30 capable Units, a warning will be returned when the sum of cold notification and cold startup time exceeds the Claim 30 criteria, i.e. ≥ 30min because time values make the unit ineligible for off-line reserve capability.
- For Claim 10 capable Units and Claim 30 capable Units, a warning will be returned when Min Runtime > 1 or Min Downtime > 1 because time values greater than 1 hour make the unit ineligible for off-line reserve capability.
- An error message will be returned if any of the following offer parameter values exceed their threshold value established by the ISO-NE Market Monitor[3]:

    - Cold Notification Time, Cold Startup Time
    - Inter Notification Time, Inter Startup Time
    - Hot Notification Time, Hot Startup Time
    - Hot To Cold Time, Hot To Inter Time
    - Min Downtime, Min Runtime

- An error message will be returned if the sum of each of the following offer parameter values is greater than the sum of their respective reference values by more than a threshold value established by the ISO-NE Market Monitor[4]. The reference values used for this validation are those found in the unit's cost-based Reference schedule 98; they are fuel independent, hence the use of schedule 98 because there is such a schedule for every unit.

    - Hot Notification Time, Hot Startup Time, Min Downtime, Min Runtime
    - Inter Notification Time, Inter Startup Time, Min Downtime, Min Runtime

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[3] Refer to Market Rule 1, Appendix A, Section III.A.6.1.
[4] Refer to Market Rule 1, Appendix A, Section III.A.6.1. Currently defined as 6 hours (August 2014)

- Cold Notification Time, Cold Startup Time, Min Downtime, Min Runtime

- A warning message will be returned if any of the following offer parameter values exceed their threshold value established by the ISO-NE Market Monitor[5]: Economic Max, Economic Min, Emergency Min, Max Daily Energy, and Max Daily Starts.

4.7.2 View Schedule Detail Defaults

To view the default values of a generator schedule:

1. In the Generation Navigation sub tabs, click the **Schedule Detail Defaults** tab.

   - The Schedule Detail Defaults display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.
   d. Select the desired schedule from the **Schedule** filter.

      ▪ The display shows the selected schedule's default detail information.

4.7.3 Modify Schedule Constraint Data

Constraint data includes minimum downtime, minimum runtime, maximum daily starts and maximum daily energy. To modify schedule constraints:

1. View the unit's schedule details (§4.7.2)
2. Enter the desired changes for any or all of the following offer parameters:

   a. Minimum Downtime (hours)
   b. Minimum Runtime (hours)
   c. Maximum Daily Starts
   d. Maximum Daily Energy (MW)

3. Click the **Update** button to save the data.

4.7.4 Modify Schedule Operating Limits

1. View the unit's schedule details (§4.7.2)
2. Enter the desired changes for any or all of the following operating limits:

   a. Economic Max (MW)
   b. Economic Min (MW)
   c. Emergency Min (MW)
   d. RT High Operating Limit (MW)

3. Click the **Update** button to save the data.

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[5]   Refer to Market Rule 1, Appendix A, Section III.A.6.1.

4.7.5 Enable Schedule for a Market

Another schedule parameter is market participation. The Participant selects the schedules that are enabled for the Day-Ahead Market (DAM) and/or the Real-Time market (RTM). The following steps enable a schedule for the specified market(s):

1. View the unit's schedule details (§4.7.2)
2. To enable/disable a schedule for use in the DAM, click the **Day Ahead Market** checkbox.
3. To enable/disable a schedule for use in the RTM, click the **Real Time Market** checkbox.
4. Click the **Update** button to save the data.

Note: If the schedule is flagged as available, you will not be able to change the schedule's applicable market flags. That is because one price-based schedule must be flagged as available for each of the markets at all times. To change a schedule's market eligibility, you must first make one or more other schedules available (one for each market).

4.8 Schedule Offers Daily Default Display

The purpose of this display is to view and update the unit's daily default Startup and No Load costs values, its incremental energy offers, its Use Bid Slope / Use Startup No Load flags and if the unit is a multi-fuel unit, the fuel blend associated with each financial offer parameter. Incremental energy offers consist of price/MW pairs, also referred to as schedule offer segments. Schedule offer segments specify a MW amount and the price per MWH for generation from the previous segment's MW amount up to this segment's MW amount. Up to 10 segments can be defined for each schedule.

Offers in MW are cumulative. For example,

- To offer the first block of 15 MW of generation at $10.00, you enter an offer segment of 15 MW @ $10.00

- To offer the next block of 20 MW of generation at $30.00, you enter an offer segment of 35 MW @ $30.00

And so on. You can enter the segment offers in any order of MW values; eMarket will organize the segments and display them in increasing MW value order. The price value of each segment must however be greater than the price of the previous segment after the segments are sorted in increasing MW value order. In other words, the offer segments must be monotonically increasing in MW and price value.

The slope from zero to the first MW point (which can be zero) is equal to zero; that is to say that the price/MWH is fixed and equal to the price of the first segment. The price along the segment between MW points is a calculated slope or block, depending on the status of the Use Offer Slope checkbox.

The last MW point should be greater than or equal to the Economic Maximum Limit. If it is not, the curve is extended with a slope equal to zero.

This is all illustrated in Figure 2.
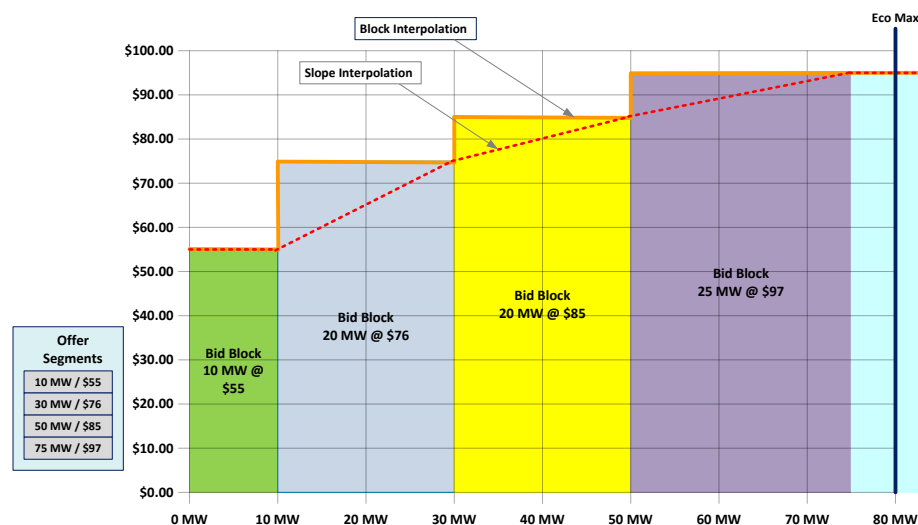
Figure 2 – Illustration of Schedule Offer Segments

Units are eligible to change segment offer Price/MW pairs and Startup and No Load cost offers after the close of the DA market during the daily Re-Offer period and during the RT Intraday Re-Offer period.

The format of the display is different for multi-fuel units and single-fuel units as shown below; for multi-fuel units, the *fuel index* names of each fuel that the unit is configured to use are shown along with data entry cells to specify the fuel blend percentages associated with each of the financial offer parameters. **See Appendix A for list of Fuel Index Names registered with Market Monitoring.**

Figure 3 – Schedule Offers Default Display of a single-fuel unit

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Figure 4 – Schedule Offers Default Display of a multi-fuel unit

The fields on this display are:

- **Use Startup No Load** – a checkbox to indicate whether or not to use the Startup and No Load costs values below when considering the cost of committing and running the unit in the market clearing software.

- **Hot Startup Cost** – the startup cost of the unit from a hot temperature (state).
- **Intermediate Startup Cost** – the startup cost of the unit from an intermediate temperature (state).
- **Cold Startup Cost** – the startup cost of the unit from a cold temperature (state).
- **No Load Cost** – the inherent cost of running the unit.

- **Use Offer Slope** – this check box indicates whether to use the offer slope for the incremental energy offers within the market clearing and dispatch software as illustrated in Figure 2.

- **MW** – the net MW unit output associated with this segment. The last MW point should be greater than or equal to the Economic Maximum Limit.

- **Price** – the $/MWH price offered for this segment.

4.8.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- A non-blank value is entered for each Startup and No Load cost and associated fuel blend percentage if applicable.

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- At least one non-blank Price/MW pair value is entered along with fuel blend percentage if applicable.

- Cold Startup Cost ≥ Inter Startup Cost ≥ Hot Startup Cost ≥ 0

- No Load Cost ≥ 0

- An error message will be returned if any of the following offer parameter values exceed their threshold value established by the ISO-NE Market Monitor[6]: Cold/Intermediate/Hot Startup Cost, No Load Cost; for multi-fuel units, the thresholds are dynamically calculated using the unit's reference levels for each fuel and the fuel blend information submitted with the cost offers.

- Fuel blend percentages for a financial offer must add up to 100; only whole numbers between 0 and 100 are allowed for a fuel blend percentage value.

- MW quantity must be strictly positive or zero; i.e. MW ≥ 0

- Price of Incremental Energy Offers must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Offer Floor price; i.e. Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[7].

- Offers must be monotonically increasing. The price value for each segment must be greater than the one of the previous segment after the segments are ordered in increasing MW value[8].

4.8.2 Modify Schedule Offers

1. In the Generation Navigation sub tabs, click the **Schedule Offers Default** tab.

   - The Schedule Offers Daily Default display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.
   d. Select the desired schedule from the **Schedule** filter.

      ▪ The display reflects the selected schedule's offer data for the selected date.

3. Enter or modify the values on the display. To delete an incremental energy offer segment, simply blank each value on the row where the segment is shown, including the fuel blend percentages.
4. Click the **Update** button to save the data.

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[6] Refer to Market Rule 1, Appendix A, Section III.A.5.5.
[7] Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.
[8] The same price for successive segments is allowed; however it doesn't really make sense when considering Participant offers because the two segments are equivalent to a single segment with a MW value equal to that of the second segment. It is allowed only to permit mitigation reference price values for successive offer segments to be equal.

4.9 Schedule Offers Hourly Updates Display

This display provides for viewing, entering and modifying hourly updates to a unit schedule's default offers for Startup and No Load cost, incremental energy price/MW pairs, Use Bid Slope and Use Startup No Load parameters for a given market day, including the fuel blend associated with each financial offer parameter for multi-fuel units. Refer to §4.8 Schedule Offers Daily Default Display for a description of these schedule offer parameters and how incremental energy offers must be structured. ***This is the only Generation display enabled for submittal of hourly updates during the RT Intraday Re-Offer period***.

The format of the display for a single-fuel unit is shown below. For a multi-fuel unit, the columns showing the ***fuel index*** of the fuels that the unit is configured to use with data entry cells to enter the fuel blend percentages are shown just like with the Schedule Offers Daily Default display. As you can see, there are multiple display tabs on this display:

- The "DEF" tab shows the default offers for the selected market day. These were entered and are shown on the Schedule Offers Default display. They cannot be changed using this display.

- There is one tab for each hour of the market day. Each tab is labeled with the hour-ending value of the market hour. There is an extra tab labeled "02*" for the extra hour on the Fall Daylight Saving Time transition day. On the Spring Daylight Saving Time transition day, the tab labeled "03" will not be shown. When the selected market day date is today, the tab labels for the hours that have passed are de-emphasized to indicate that the values for those hours cannot be changed.

Display tab labels are de-emphasized for those hours that are in the past when the selected market day date is today. The "Delete" button is also hidden when one of these display tabs is selected. That's because the hourly updates values for these hours cannot be changed or removed.

As illustrated below, whenever there are values entered for an hour that are not yet saved, the display tab label is highlighted in red. Selecting the hour's display tab will show the modified data entry fields highlighted in pink. Furthermore, if there are updates for an hour (whether saved in the database or entered on the screen) that can be changed for the selected market day, a "Delete" button is provided on the display. Selecting the button sets all the data entry fields to blank and the checkboxes to "No Override" state without saving the entered data. You must select the "Update" button to actually delete the hourly updates. That way, you can delete the updates to multiple hours with one "Update" selection.

4.9.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks for each market hour where data has been entered to ensure that the entered data is valid:

- A non-blank value is entered for each Startup and No Load cost and associated fuel blend percentage if applicable except when you are deleting all overrides for the selected market hour.

- At least one non-blank Price/MW pair value is entered along with fuel blend percentage if applicable except when you are deleting all overrides for the selected market hour.

- A selection has been entered for the Use Startup No Load and Use Offer Slope checkboxes; they cannot be left in the "No Override" state except when you are deleting all overrides for the selected market hour.

- Cold Startup Cost ≥ Intermediate Startup Cost ≥ Hot Startup Cost ≥ 0

- No Load Cost ≥ 0

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- An error message will be returned if any of the following offer parameter values exceed their threshold value established by the ISO-NE Market Monitor[9]: Cold/Intermediate/Hot Startup Cost, No Load Cost; for multi-fuel units, the thresholds are dynamically calculated using the unit's reference levels and the fuel blend information submitted with the cost offers.

- Fuel blend percentages for a financial offer must add up to 100; only whole numbers between 0 and 100 are allowed for a fuel blend percentage value.

- MW quantity must be strictly positive or zero; i.e. MW ≥ 0

- Price of Incremental Energy Offers must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Offer Floor price; i.e. Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[10].

- Incremental Energy Offers must be monotonically increasing. The price value for each segment must be greater than or equal to the one of the previous segment after the segments are ordered in increasing MW value[11].

- The market hour for which updates are being submitted must be a future hour. In other words, the selected market day date must be tomorrow or a later date. During the RT Intraday Re-Offer period when the selected market day date is today, if the market hour is the next hour from now, the request must be made 30 minutes before the start of the hour.

4.9.2 Override Schedule Offers for One or More Hours of a Market Day

1. In the Generation Navigation sub tabs, click the **Schedule Offers Hourly Updates** tab.

   - The "DEF" Schedule Offers Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.
   d. Select the desired schedule from the **Schedule** filter.

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[9] Refer to Market Rule 1, Appendix A, Section III.A.5.5. Threshold values are different for supply offer values submitted while the DA market and the Re-Offer periods are open versus those in effect during the RT Intraday Re-Offer period. As outlined in the Market Rule, you cannot increase your offer of Startup and No Load costs during the RT Intraday Re-Offer period without either a corresponding change to your fuel blend or submitting a Fuel Price Adjustment request. The allowable change in the Startup and No Load supply offers during the RT Intraday Re-Offer period is referenced in Market Rule 1, Appendix A, Section III.A.6.2.

[10] Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.

[11] The same price for successive segments is allowed; however it doesn't really make sense when considering Participant offers because the two segments are equivalent to a single segment with a MW value equal to that of the second segment. It is allowed only to permit mitigation reference price values for successive offer segments to be equal.

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- The "DEF" display tab reflects the selected schedule's default offer data for the selected date.

3. To update the overrides of individual hours:

   a. Select the display tab of the hour for which you want to enter new hourly overrides of the schedule offers or modify any existing hourly overrides.
   b. Enter the override value for each of the schedule offers or modify the existing values.
   c. Repeat steps a and b for each hour that you want to enter new overrides or modify the existing ones.
   d. Click the **Update** button to save the data.

4. To update the overrides for a range of hours; this involves using the "Copy From:" tool in the tooltray. It is designed to minimize the amount of data entry that you are required to perform, especially when there are blocks of hours where the override values are to be the same.

   a. First create a template of the data that you want to enter for multiple hours. When entering new overrides, you can minimize your data entry by first copying the schedule's default values to the first hour of the range that you want to override and then editing the values for that hour. When modifying hourly updates that are already in place, you pick an hour in the range of hours that you want change and modify the values for this hour.
   b. Then copy this hour's values to the various range (one or more) of hours where you want this set of overrides to apply.
   c. You can repeat this process (steps a and b) for other ranges of hours where you want to enter different sets of overrides.
   d. When you are done entering/modifying the hourly overrides to the schedule's offer, click the **Update** button to save the data.

4.9.3 Remove/Delete Hourly Updates to Schedule Offers

1. In the Generation Navigation sub tabs, click the **Schedule Offers Hourly Updates** tab.

   - The "DEF" Schedule Offers Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.
   d. Select the desired schedule from the **Schedule** filter.

      - The "DEF" display tab reflects the selected schedule's default offer data for the selected date.
      - A horizontal bar appears above the hour-ending value of the display tabs where there are overrides/updates in place.

3. To remove/delete the overrides of individual hours:

    a. Select the display tab of the hour for which you want to remove the hourly overrides. If you are allowed to remove the overrides for the selected hour, a "Delete" button will be shown in the lower display toolbar.
    b. Click on the "Delete" button. All of the data entry fields on the display are set to blank and the two checkboxes are set to "No Override" state.
    c. Repeat steps a and b for each hour that you want to remove the overrides.
    d. Click the **Update** button to permanently delete the override data in the database.

4. To remove/delete the overrides for a range of hours; this involves using the "Copy From:" tool in the tooltray.

    a. Pick the display tab of the first hour in a range of hours where you want to delete the overrides; click the "Delete" button to set all data entry fields to blank and the checkboxes to "No Override" state. You don't need to save ("Update") this data entry.
    b. Copy the selected hour's values to the various range (one or more) of hours where you want to remove the overrides. *Note*: if there is an hour with no overrides in the selected market day, you can skip step a and copy this hour to the various range (one or more) of hours where you want to remove the overrides.
    c. Repeat this process (steps a and b) for other ranges of hours where you want to also remove the overrides.
    d. When you are done, click the **Update** button to permanently delete the override data in the database.

4.10 Schedule Times Hourly Updates Display

This display provides for viewing, entering and modifying hourly updates to a unit schedule's default Notification and Startup times. Refer to §4.7 Schedule Detail Defaults Display for a description of these schedule offer parameters.

The format of the display is shown below.

The Default Values section is provided as a reference to show what are the default offers for the chosen day that are being overridden by the hourly update values entered in the section below.

4.10.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- Data is entered for each of the parameter values for an hour, i.e. non-blank values appear in all the data entry cells, if any one of the cells contains a non-blank value. In other words, when you want to override one time value of an hour, you must enter values for all the other time parameters even if they are the same as the default values. When all data entry cells for an hour are set to blank, it means that the override for the hour is to be removed/deleted.
- Cold Startup Time ≥ Inter Startup Time ≥ Hot Startup Time ≥ 0
- Cold Notification Time ≥ Inter Notification Time ≥ Hot Notification Time ≥ 0

- An error message will be returned if any of the following offer parameter values for an hour exceed their threshold value established by the ISO-NE Market Monitor[12]:
  - Cold Notification Time, Cold Startup Time
  - Inter Notification Time, Inter Startup Time
  - Hot Notification Time, Hot Startup Time

- An error message will be returned if the sum of each of the following offer parameter values is greater than the sum of their respective reference values by more than a threshold value established by the ISO-NE Market Monitor[13]. The reference values used for this validation are those found in the unit's cost-based Reference schedule 98. The daily default offer values of Min Downtime and Min Runtime as defined in the schedule's Detail defaults and the corresponding reference values are used in the calculations.
  - Hot Notification Time, Hot Startup Time, Min Downtime, Min Runtime
  - Inter Notification Time, Inter Startup Time, Min Downtime, Min Runtime
  - Cold Notification Time, Cold Startup Time, Min Downtime, Min Runtime

4.10.2 Override Startup and Notification Times for a Day and Hour

As discussed in §4.7 Schedule Detail Defaults Display, you define on this display a unit's daily default Startup and Notification time values under the selected schedule. These values are shown in the Defaults section of the display; they are the values used for those hours where an override is not defined. If you want to profile the unit's times on an hourly basis (to reflect the unit's actual manned hours of the day for example), you override the daily default schedule values using this display as follows:

1. In the Generation Navigation sub tabs, click the **Schedule Times Hourly Updates** tab.

   - The Schedule Startup and Notification Time Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.
   d. Select the desired schedule from the **Schedule** filter.

     - The display reflects the hourly overrides for the selected unit schedule.

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[12] Refer to Market Rule 1, Appendix A, Section III.A.6.1. The reference level values from which the threshold values are derived are found in the unit's Reference schedule 98 (the one with the name xxxx_R1 where xxxx is the unit's short name).

[13] Refer to Market Rule 1, Appendix A, Section III.A.6.1. Currently defined as 6 hours (August 2014)

3. To update the overrides for individual hours:

   a. Enter override values for each time parameter in the hours that you wish. Enter blanks if you want to remove an override. Remember that you must enter values for all time parameters.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours using the first row in the grid:

   a. Enter override values for each time parameter in the top row. Enter blanks if you want to remove overrides.
   b. Specify the range of hours to override by selecting the "From" (left drop-down selector) and "To" (right drop-down selector) hours in the top row

   c. Click the **Copy** button; this will copy the data that you entered in the top row to each row for the hours in the range that you selected.
   d. Repeat steps a through c for other range of hours as desired.
   e. Click the **Update** button to save the data for the selected hours.

4.11 Schedule Selection Display

This display is used to make schedules available for a given day and market. The format of the display is shown below:

The fields on this display are:

- **Unit** – the name of the unit. All units listed in the selected portfolio along with each of their schedules are shown on this display.
- **Schedule ID** – the unique identifier of the schedule; it is the concatenation of the unique unit identifier and of the schedule type number.
- **Type** – the type of schedule: Price or Cost
- **Schedule** – the name of the schedule as it was entered on Schedule Manager display
- **Day Ahead** – an X-mark indicates that the schedule is enabled to be used in the clearing of the Day Ahead market if the schedule is flagged as available.
- **Real Time** – an X-mark indicates that the schedule is enabled to be used in the clearing of the Real Time market if the schedule is flagged as available.
- **Available** – a checkmark indicates that the schedule is to be use in the clearing of the selected markets on the selected operating day.

4.11.1 Select Schedule for an Operating Day and Market

The Unit Schedule Selection operation is for modifying the availability of a schedule for a specific day.

Note: One and only one price-based schedule can be available for a market on any given day. Therefore to make a schedule that is enabled for both Day Ahead and Real Time markets unavailable, you must at the same time make another schedule that is enabled for both markets available or two other schedules, one enabled for the Day Ahead market and another enabled for the Real Time market, available.

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When a schedule for a unit that is a regulating resource is made available, irrespective of whether it is a schedule designated for use in the DA market or the RT market or both, the regulation limit nesting rule is checked; i.e. Economic Min ≤ Regulation Low < Regulation High ≤ Economic Max where the economic and regulation limits are the more constraining of the limits among the daily default (those entered on the Schedule Detail Defaults display and on the Regulation Offers Daily Default display) and the hourly updates (those entered on the Unit Hourly Updates and on the Regulation Hourly Updates display) for the selected market day. A warning message is returned when this rule is violated.

To change the availability of schedules:

1. In the Generation Navigation sub tabs, click the **Schedule Selection** tab.

   - The Schedule Selection display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.

      ▪ The schedules for all units in the chosen portfolio are displayed.

3. Toggle the **Available** checkboxes as desired.
4. Click the **Update** button to save your modifications.

Note: To change the market to which a schedule applies you must use the Schedule Detail Defaults display.
Note: You cannot change the availability of the cost-based schedules. The availability of these is managed by ISO New England.

4.12 Unit Hourly Updates Display

This display is used to view and modify the hourly overrides of a unit's MW limits, default dispatch availability status and when it is applicable, its off-line reserve capabilities for a specified market day. Changes made to the unit data using the Unit Hourly Updates display supersede all schedule limits (Schedule Detail Defaults display) and default unit parameters (Unit Default Parameters Display).

The format of this display is shown below:

The Default Values section is provided as a reference to show what are the limit values in the various schedules and the default dispatch availability status and off-line reserve claim capability for the chosen day that are being overridden by the hourly update values entered in the section below.

- **Schedule** – The name of the schedule
- **Emerg Min** – The emergency minimum limit specified in the schedule detail
- **Econ Min** – The economic minimum limit specified in the schedule detail
- **Econ Max** – The economic maximum limit specified in the schedule detail
- **RTHOL** – The RT high operating limit specified in the schedule detail
- **Claim 10 and Claim 30 Capable** – Indicate whether the unit is registered as capable (Yes/No) of providing 10 and 30 minute non-spinning reserves from an offline state.
- **Claim 10 and Claim 30 Default** – The daily default off-line 10 and 30 minute off-line reserve capability for the market day as submitted using the Unit Default Parameters display.

- **Claim 10 and Claim 30 Cap** – The demonstrated claim capabilities that were established during the last audit conducted by ISO New England. If the demonstrated capability value is undefined, it will be shown as "UD".
- **Default Status (Economic/Unavailable/Must Run)** – The dispatch availability status (Default Status) specified on the Unit Default Parameters display.

The Default Values section can be collapsed using the double up-arrow icon at the extreme right of the section title bar to show more rows in the hourly section as shown below. The collapsed section can be expanded again to see the default values using the double down-arrow icon at the extreme right of the collapsed section title bar.

The Override Hourly Values section shows each hour of the day and fields to enter overrides. When the fields are blank and the radio buttons unchecked, it means that there is no override of the schedule or default values for that hour.

- **Hour** – Hour ending values are shown in the first column for each hour in the day. The row for hour ending 03 is not shown for the Spring Daylight Saving Time transition day. Similarly, the value on the row of the repeating hour ending 02 of the Fall Daylight Saving Time transition day is marked with an asterisk (*).
- **Emerg Min** – Column to enter overrides of the Emergency Minimum limit for any hour of the day.
- **Econ Min** – Column to enter overrides of the Economic Minimum limit for any hour of the day.
- **Econ Max** – Column to enter overrides of the Economic Maximum limit for any hour of the day.

- **RTHOL** – Column to enter overrides of the RT High Operating limit for any hour of the day.
- **Claim 10** – Column to enter overrides of the Claim 10 capability for any hour of the day if the unit is Claim 10 capable. If the unit is not Claim 10 capable, there will be no data entry cells in this column.
- **Claim 30** – Column to enter overrides of the Claim 30 capability for any hour of the day if the unit is Claim 30 capable. If the unit is not Claim 30 capable, there will be no data entry cells in this column.

The following override the Default Status specified on the Unit Default Parameters display:

- **Unavailable** – When checked, it indicates that the unit is unavailable for commitment and dispatch for that hour of the operating day.
- **Economic** – When checked, it indicates that the unit is available for economic commitment and dispatch for that hour of the operating day.
- **Must Run** – When checked, it indicates that the unit is self-scheduling for that hour of the operating day; that is, the unit must be committed at its Economic Minimum limit and can be dispatched up to Economic Maximum limit based on economics.

If a value is entered for an hour in any of these columns, values must also be entered in every other column even if they are copies of the default values. Setting these limit values to blank (NULL) means that the corresponding values defined in the Schedule Detail data of the schedules that are flagged as available for the market day are to be used for that market hour; i.e. it is equivalent to removing the override of the values for that market hour. Setting the off-line reserve claim values to blank (NULL) means that the corresponding values defined in the Unit Default Parameters data for the market day are to be used for that market hour. Similarly clearing all of the Unavailable/Economic/Must Run flags means that the unit's default status defined in the Unit Default Parameters data for the market day is to be used for that market hour.

The top row of the grid provides you with the means to enter or clear overrides for a range of hours. If you do use the top row, you need to *remember that leaving all data entry fields on this row blank means that you want to remove the overrides for all hours in the range selected*. For example, if you want to remove all overrides for every hour of the day, select 01 for the "From" hour (left drop-down selector) and 24 for the "To" hour (right drop-down selector) in the Hour drop-down selection lists, select the "Copy" button and then select Update. Since you did not enter anything in the limit fields or select any of the dispatch availability override flags, all overrides are removed. *You cannot use the top row to selectively update the overrides in one column for a range of hours while retaining the override values in the other columns*.

4.12.1 Validation rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- If an Econ Max override value is entered, then
  Econ Max ≥ CSO[14] if CSO >0 – Warning if not
  i.e. for a resource with a Capacity Supply Obligation, its Econ Max Limit should be at least as high as its Capacity Supply Obligation. A warning will be returned if the rule is violated; it's only a warning because the resource may not be fully available.

- Emerg Min ≤ Econ Min ≤ Econ Max ≤ RTHOL (RT High Operating Limit). This is the **limit nesting rule**. The data submitted is rejected if this rule is violated.

- For units capable of providing regulation, the limit nesting rule is extended to include the regulation limits, i.e.
  Emerg Min ≤ Econ Min ≤ Reg Low < Reg High ≤ Econ Max ≤ RTHOL
  where Reg Low and Reg High are the regulation low limit and the regulation high limit for the corresponding hour as defined on the Regulation Offers Default display and overridden on the Regulation Hourly Updates display for the selected market day. A warning message is returned when this limit nesting rule is violated.

- When a unit is self-scheduled for a total number of hours (not necessarily consecutive) greater than its Min Runtime, the Max Daily Energy (if defined in the DA and RT Schedule Detail Defaults of the schedules that are flagged as available) *should* be greater than or equal to Economic Min x the total number of hours that the unit is self-scheduled. A warning will be returned if the rule is violated.

- When a unit is self-scheduled for an hour (through the combination of the unit's default status for the day and the hourly overrides of the status), it should not be declared unavailable until its Min Runtime is elapsed. Therefore if the unit is set to Must Run for any hour, it *should* be set for a consecutive number of hours sufficient to cover its Min Runtime. A warning will be returned if the rule is violated.

- When a unit is declared unavailable for an hour (through the combination of the unit's default status for the day and the hourly overrides of the status), it should not be declared available (Economic or Must Run) until its Min Downtime is elapsed. Therefore if the unit is set to Unavailable for any hour, it *should* be set for a consecutive number of hours sufficient to cover its Min Downtime. A warning will be returned if the rule is violated.

- A warning message will be returned if any of the following hourly override values exceed their associated threshold value established by the ISO-NE Market Monitor[15]: Economic Max, Economic Min, Emergency Min

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[14] CSO = unit's Capacity Supply Obligation from the Forward Capacity Market.
[15] Refer to Market Rule 1, Appendix A, Section III.A.6.1.

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- A warning will be returned if the unit is Claim 10 capable, a Claim 10 override is entered and any of the following conditions exist

  - Claim 10 = 0
  - Claim 10 > Claim 10 Cap – meaning that the Claim 10 Cap value will be used instead of the offered value

- A warning will be returned if the unit is Claim 30 capable, a Claim 30 override is entered and any of the following conditions exist

  - Claim 30 = 0
  - Claim 30 > Claim 30 Cap – meaning that the Claim 30 Cap value will be used instead of the offered value
  - Claim 30 < Claim 10 – meaning that the Claim 10 value will be used instead of the offered Claim 30 value.

4.12.2 Override MW Operating Limits for a Day and Hour

As discussed in §4.7 Schedule Detail Defaults Display, you define on this display a unit's MW operating limits under the selected schedule. These limit values are shown in the Defaults section for each schedule that you've created for the unit. If you want to profile the unit's MW operating limits on an hourly basis, irrespective of which schedule is designated as available for a given market, you override the schedule values using the Unit Hourly Updates display as follows:

1. In the Generation Navigation sub tabs, click the **Hourly Updates** tab.

   - The Unit Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.

      - The display reflects the hourly overrides for the selected unit.

3. To update the overrides for individual hours:

   a. Enter override values for all of the limits in the hours that you wish. You must also enter unit dispatch availability status overrides. If the unit is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove an override, you must enter blanks in every data entry cells and deselect all status overrides.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours

   a. Enter override values for all of the limits in the top row. You must also enter unit dispatch availability status overrides. If the unit is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove overrides, leave all the data entry cells on the first row blank and the status overrides deselected.

b. In the Hour column, select a "From" hour (left drop-down selector) and a "To" hour (right drop-down selector) and then select the **Copy** button. This will copy the data entered in the top row to every row for the range of hours selected.

c. Repeat steps a and b if you want to enter/remove overrides for other ranges of hours.

d. Click the **Update** button to save the data for the selected hours.

4.12.3 Override the Status of a Generating Unit for a Day and Hour

As discussed in §4.3 Unit Default Parameters Display you define on this display a unit's default dispatch availability status (Default Status) for an entire market day. This status is shown in the Defaults section. If you want to profile the unit's dispatch availability status on an hourly basis, you override this default status using the Unit Hourly Updates display.

1. In the Generation Navigation sub tabs, click the **Hourly Updates** tab.

   • The Unit Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter.

      ▪ The display reflects the hourly overrides for the selected unit.

3. To update the overrides for individual hours:

   a. Select the Unavailable/Economic/Must Run status for the hours that you want to override the default status. You must also enter override values for all the limits even if they are copies of the default values. If the unit is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove an override, deselect all the status overrides and enter blanks in all other data entry cells.

   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours

   a. Select the status override value in the first row. You must also enter override values for all the limits even if they are copies of the default values. If the unit is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove overrides, leave all the data entry cells on the first row blank and the status overrides deselected.

   b. In the Hour column, select a "From" hour (left drop-down selector) and a "To" hour (right drop-down selector) and then select the **Copy** button. This will copy the data entered in the top row to every row for the range of hours selected.

   c. Repeat steps a and b if you want to enter/remove overrides for other ranges of hours.

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d. Click the **Update** button to save the data for the selected hours.

4.12.4 Self-Schedule a Generating Unit

If you want to self-schedule (must run) a generating unit, you must submit a **Must Run** status and indicate whether the unit is block loaded or if it can follow ISO dispatch instructions. To self-commit a unit and allow the ISO to issue dispatch instructions, submit a must run status for the unit, with an Economic Min limit less than the Economic Max limit. To submit a fixed MW schedule for the unit with a must run status, set the Economic Min limit equal to the Economic Max limit.

Note: For Non-dispatchable units the Economic Min and Economic Max values **should** be equal.

4.13 Fuel Price Adjustments Display

The purpose of this display is to submit Fuel Price Adjustment (FPA) requests for a fuel that a specific unit is configured to use and for a range of hours of a specific market day. Such requests are submitted when the Participant determines that their cost for the fuel on which their offers are based is higher than the market index price of the fuel and their financial offers are at risk of mitigation if the unit's financial reference levels are not updated to reflect their actual fuel purchase price.

The requested price in an FPA must be greater than the market index price of the fuel[16]. FPA requests are automatically either approved at the price requested or capped at the Fuel Price Adjustment Limit (FPAL). The FPAL for each fossil fuel is defined as shown in Figure 5. The Fuel Index Price (FIP) is a market index value that applies for all hours of a given fuel's flow day (e.g. the natural gas flow day spans the period of 10am of a market day to 10am of the following market day; the oil and coal flow day coincides with the market day, i.e. from midnight to midnight). The FIP of every fuel is updated daily shortly after the market index prices are published. The Fuel Index Price Threshold (FIPT) is a value that the ISO-NE Market Monitor determines for each fuel's flow day. The sum of these two values gives the FPAL. When an FPA request is processed, it is _approved_ as submitted if the requested price is equal to or below the FPAL. Otherwise the request is approved but the approved price is _capped_ at the FPAL. The ISO-NE Market Monitor has the ability to accept a request price submitted greater than the FPAL, in essence overriding the FPAL, but will do so only at the request of the Participant and on an FPA basis,. It is important to keep in mind that natural gas FPA requests for a given market day span two fuel flow days where the FIP and the FPAL can be different for each fuel flow day. Therefore the FPA requested price can be approved for one fuel flow day and capped in the other.
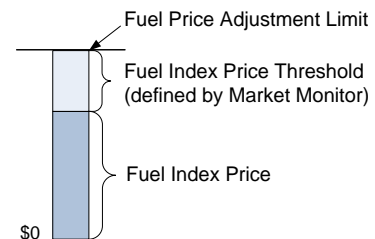
Figure 5

During the RT Intraday Re-Offer period of a market day, the ISO-NE Market Monitor can override the default threshold of a fuel on an hourly basis. When that action is taken, all of the FPAs for the fuel will be re-processed to account for the new hourly FPA Limits. When an FPA Limit is raised, an FPA price may transition from a capped price to an approved price equal to the requested price, or from a capped price to a higher capped price. If on the other hand the FPA Limit is lowered, all previously approved/capped hourly FPA prices remain unchanged; in other words, once an FPA price for an hour is set when the FPA is first processed or raised when it is re-processed, it is never lowered by the system.

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[16] The FPA requested price must be greater than the Fuel Index Price of the fuel by an amount greater than or equal to a threshold established by the ISO-NE Market Monitor as specified in Market Rule 1, Appendix A; III.A.3.4 for specific rules on Fuel Price Adjustments.

FPA requests can be submitted only for future hours of today and all hours of tomorrow. FPA requests can be submitted at any time. The FPA price will be calculated as the FPAs are received and as Fuel Index Prices and Fuel Index Price Thresholds are updated, meaning that the effective hourly prices of the FPA requests will be calculated immediately as these events occur. FPA prices are used to update the financial reference values in the Reference schedule affected by the FPA request. This updating is normally performed at the same time as the effective hourly prices of an FPA are updated. The immediate updating of the financial reference values in the Reference schedules affected by FPAs for tomorrow is however suspended during the following two time windows:

- During the period of time allocated to the clearing of the DA Market, i.e. from the closing of the DA Market for energy offers (10:00) to the opening of the Re-Offer Period for tomorrow (time when the DAM case is approved but no later than 13:30). The effective hourly price of FPA requests for tomorrow received in this time period are calculated immediately but the Reference schedules are updated when the Re-Offer Period opens.

- During the period of time allocated to the preparation of tomorrow's unit operating plan, i.e. from the closing of the Re-Offer Period (14:00) and the opening of the RT Intraday Re-Offer Period (18:30). The effective hourly price of FPA requests for tomorrow received in this time period are calculated immediately but the Reference schedules are updated when the RT intraday Re-Offer period opens.

The state of the FPAs submitted during these periods will be shown as Pending on the FPA display because the reference levels in the affected Reference schedules are not updated. When the Reference schedules have been updated, the state of the FPAs will be updated to Approved or Capped. Figure 6 below illustrates these processing time windows for one operating day.
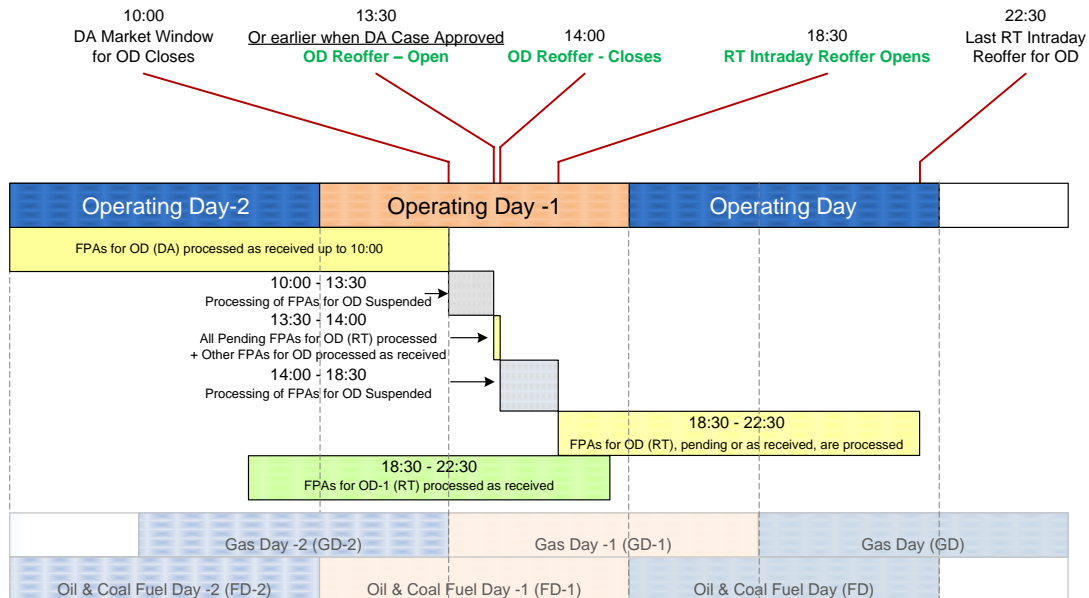
Figure 6 – Fuel Price Adjustment Submittal and Processing for Operating Day

The basic components of an FPA request are by unit, a fossil fuel that the unit is configured to use, a market day, a range of hours in that market day and a requested price. Any number of FPA requests can be submitted for a given market day. If the range of hours specified in one FPA request overlaps the range of hours of a previous FPA request, the last one received supersedes all previous requests, meaning that it is the requested price of the last one received that constitutes the FPA request for the unit's fuel where the FPA requests overlap. In the absence of an FPA request for a market hour, it is the Fuel Index Price that is used to calculate the reference levels in the Reference schedule associated with the unit's fuel. This is illustrated in Figure 7.

The concept of the last FPA request superseding all FPA requests that it overlaps is important when considering the withdrawal of an FPA requests. A Participant can withdraw an FPA request at any time provided that it is not fully passed, i.e. where the end hour of the request is still in the future. Withdrawing an FPA means that for the hours remaining in the range spanned by the request, the Fuel Index Price becomes the fuel price of those hours, even if there are underlying FPA requests that the withdrawn FPA request superseded. This is illustrated in Figure 8.

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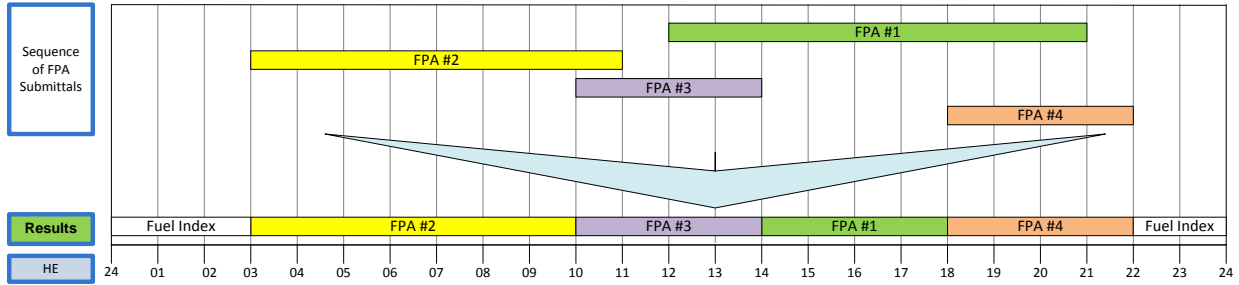
Figure 7 – Illustration of Overlapping FPA Requests
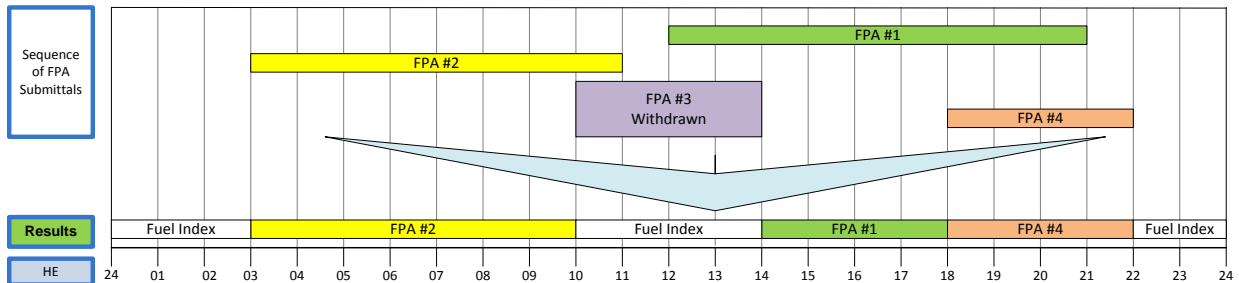
Figure 8 – Illustration of Withdrawing an Overlapping FPA Request

The eMarket display that is used to view and submit Fuel Price Adjustment requests is shown below. You must select a market day date and one of your generation portfolios. You must then select

- A generating unit listed in your selected portfolio; note that only units configured to use a fossil fuel (coal, oil or gas) will be listed in the drop-down list of units;
- A fuel; note that only the *__fuel index__* names of each fuel that the unit is registered with IMM to use are listed in the drop-down list.

Once your selection is made, the display will refresh and show information on all FPA requests in place for the selected date, unit and fuel, if there are any.

There are three sections to the display:

- Fuel Price Adjustment Submittal – section used to submit an FPA request;
- Submitted Fuel Price Adjustments – section that lists all the FPA requests that have been submitted for the selected market day;
- Effective Hourly Fuel Price Adjustments – section that shows which FPA overrides the Fuel Index Price for each hour of the selected market day.

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The Fuel Price Adjustment Submittal section is used to submit an FPA request. If the selected market day date is in the past, this section is not shown at all because FPA requests cannot be submitted for days in the past. The data entry fields in this section are:

- **From HE** – An hour-ending drop-down selector that is used to specify the hour-ending value of the first hour of the market day for the period spanned by the request;
- **To HE** – An hour-ending drop-down selector that is used to specify the hour-ending value of the last hour of the market day for the period spanned by the request;
- **Price** – The FPA requested price in $/MMbtu.

A **Submit** button is provided to send the FPA request to the system of validation and processing.

The ISO-NE Market Monitor can lockout[17] a Participant's generation unit from submitting FPA requests for a unit. When a lockout condition exists for the selected unit and market day, a message to that effect is shown in the FPA Submittal section of the display as shown below; the data entry fields and the **Submit** button are disabled. While a Participant is locked out, the Participant must contact the ISO-NE Market Monitor to have the FPA requests entered on their behalf. Note that while a Participant is locked out, the Participant can still withdraw an FPA request and must still administer the FPA document attachments for the FPAs previously submitted or submitted on their behalf by the ISO-NE Market Monitor.

---

17 Refer to Market Rule 1, Appendix A; III.A.3.4 for specific rules on Fuel Price Adjustments and Lockout provisions.

The Submitted Fuel Price Adjustments section lists all the FPA requests that have been submitted for the selected unit, fuel and market day. They are listed in the chronological order that they were submitted. The display frame of this section can be collapsed/expanded using the double verticall arrows at the extreme right of the section title bar. The display fields in this section are:

- **FPA #** – The ordinal number of the FPA request. This number is used in the section below to uniquely identify the FPA request that affects each hour of the market day.
- **HE Start** – The hour ending first hour of the market day spanned by the FPA request;
- **HE End** – The hour ending last hour of the market day spanned by the FPA request;
- **Requested Price** – The FPA request price in $/MMbtu;
- **Submitted** – The date and time that the FPA request was submitted.
- **Submitted By** – The name of the Participant user who submitted the FPA request. If the FPA request was submitted by the ISO-NE Market Monitor, the name will be "ISO-NE IMM".
- **# of Attch** – The number of documents that have been uploaded and attached to the FPA request.
- **Status** – The status of the FPA request. There are four possibilities:
    - *Pending* – This status indicates that the request has been received and accepted but the reference prices in the associated unit Reference schedule have not yet been updated to account for the approved FPA requested fuel price. This state will persist longer than a minute only during those periods of time where the processing of the Reference schedules stemming from FPA requests is suspended.

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- *Approved* – The FPA requested price has been approved as submitted and is the effective fuel index price used to calculate the reference levels in the unit's associated Reference schedule. The effective price shown will be the requested price unless the published Fuel Index Price (FIP) is greater than the FPA requested price, a condition that can arise as explained below. In this latter case, "Index" will be shown as the effective price.

  Note that the requested price for an FPA submitted on behalf and at the request of a Participant by the ISO-NE Market Monitor is always approved, even if the requested price is greater than the Fuel Price Adjustment Limit for any hour in the range spanned by the FPA request.

- *Capped* – The FPA requested price is greater than the FPA Limit for at least one of the hours spanned by the FPA request. The effective price shown will be equal to the lowest FPA Limit for the hours spanned by the request.
- *Withdrawn* – The FPA request was withdrawn. Further information on the withdrawal is shown to the right.
- *WithdrawnPending* – A user has submitted a request to withdraw the FPA. This status indicates that the request has been received and accepted but the reference prices in the associated unit Reference schedule have not yet been updated to account for the withdrawn FPA. This state will persist longer than a minute only during those periods of time where the processing of the Reference schedules stemming from FPA requests is suspended.

- **Effective Price** – This is the approved/capped price for the FPA. This price is

  - *Blank* as long as the FPA request is in *Pending* state.
  - *The requested price* if the FPA is *Approved*; note that the FPA will be set to Approved if the requested price is less than or equal to the Fuel Price Adjustment Limit for each hour spanned by the FPA (since the Fuel Index Price and the Fuel index Price Threshold can be different for each hour spanned by the FPA), or if the FPA requested price was accepted as submitted by the ISO-NE Market Monitor thereby overriding the Fuel Price Adjustment Limits, of if the FPA was submitted by the ISO-NE Market Monitor on behalf and at the request of the Participant.
  - *The lowest Fuel Price Adjustment Limit* at which the FPA was *Capped* when it was last processed; note that the FPA will be set to Capped if the requested price is greater than the Fuel Price Adjustment Limit for any hour spanned by the FPA (since the Fuel Index Price and the Fuel index Price Threshold can be different for each hour spanned by the FPA). This price value can change (increase) when the Fuel Price Adjustment Limit is raised because the Fuel Index Price increases or the IMM raises the threshold on the Fuel Index Price. If the Fuel Price Adjustment Limit is raised above the FPA requested price for all hours spanned by the FPA, the FPA status will change to Approved and the effective price will be set

equal to the requested price. The effective price will never be reduced by the system as a result of a decrease in the Fuel Price Adjustment Limit.

- The approved/capped price of the FPA at the time it was *withdrawn*. The effective price of an FPA will never change after the FPA is withdrawn.
- "***Index***" if the FPA requested price is less than the Fuel Index Price for some hours spanned by the FPA since the Fuel Index Price can be different for each hour spanned by the FPA. This can only happen when the Fuel Index Prices are updated after the FPA was submitted. For example, just before the Re-Offer Period closes, the Fuel Index Prices of gas are updated with the published market index prices. These values can be higher than those used to clear the DA market and for which a Participant may have submitted an FPA request with a price above the FIP at the close of the DAM but which is now less than the updated FIP for the next gas day at the close of the Re-Offer Period.

- **Withdrawn HE** – The hour-ending value of the effective end hour of a withdrawn FPA; blank otherwise. All hours of the original FPA request between Withdrawn HE and HE End are effectively cancelled, as well as all hours in the same range of all previously submitted FPA requests. The withdrawn HE value is equal to the HE value of the FPA start hour or of the withdrawal date/time (shown on the right) + 60 minutes (i.e. the HE of the hour following the HE time that the FPA was withdrawn), whichever is the later hour.
- **Withdrawn by** – The name of the Participant user who withdrew the FPA request; blank otherwise.
- **Withdrawn** – The date and time that the FPA request was withdrawn; blank otherwise.

Two <u>normally disabled</u> buttons appear at the bottom of this section. They are <u>enabled when one of the rows in the grid is selected</u>. They provide the following functionality:

- **Withdraw** – This button brings up a popup requesting the user to confirm that the selected FPA request is to be withdrawn. When the user confirms the action, a request is sent to the database to withdraw the FPA. When the request is acknowledged, the FPA status is changed to WithdrawnPending. When the affected Reference schedule has been updated, the FPA status changes to Withdrawn and the Withdrawn HE, Withdrawn by, and Withdrawn date/time fields on the selected FPA are filled in. If the selected FPA is already Withdrawn or if the FPA HE End is equal to the HE value of the current hour (i.e. there are no hours spanned by the FPA beyond the current hour), the button will be disabled.
- **View Attachments** – This button brings up a pop-up (shown below) on which all of the electronic document files attached to the FPA are listed as shown below.
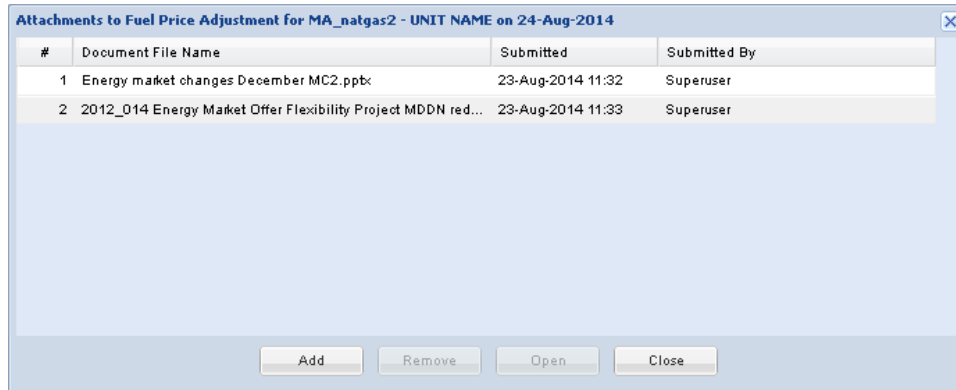
The displays fields on the pop-up display are:

- **#** – The ordinal number of the document. Documents are numbered in the order that they are uploaded.
- **Document File Name** – The filename of the document that was uploaded.
- **Submitted** – The date and time that the document was uploaded.
- **Submitted By** – The name of the Participant user who uploaded the document.

The buttons at the bottom of the pop-up display allow the user to:

- **Add** – Upload documents and attach them to the FPA request. This button brings up a file selection popup that the user must use to select the document file to upload. *If the selected market day is more than 5 business days in the past, a warning message stating that the attachment is late appears in the popup.*

  Only "safe" files can be uploaded. The following types of files are considered "safe":

  - o Microsoft Word documents (.doc, .docx) but not macro-enabled documents (.docm)
  - o Microsoft Excel documents (.xls, .xlsx) but not macro-enabled documents (.xlsm)
  - o Microsoft Power Point documents (.ppt, .pptx) but not macro-enabled documents (.pptm)
  - o Adobe Acrobat document files (.pdf)
  - o JPEG and JPG images, GIF images
  - o Rich-Text-Format documents (.rtf) – ex: copies of email messages
  - o Simple text documents (.txt)

- **Remove** – Select a previously uploaded document and remove it from the list of documents attached to the FPA request
- **Open** – Select a previously uploaded document, download it and either save it on the user's computer or open it in the application associated with the document type.
- **Close** – Close the pop-up window.

The Effective Hourly Fuel Price Adjustments section shows which FPA request price overrides the Fuel Index Price for each hour of the selected market day and is used to calculate the reference levels for that hour in the associated Reference schedule. The display frame of this section is vertically adjustable (by selecting the upper border and dragging it up or down). The row for a given market hour will be empty if there are no FPA requests that span the hour. Otherwise the following information is shown in each column of the grid:

- **Hour** – The hour-ending value of market hour. The extra hour of the Fall Daylight Saving Time transition day will be shown as "02*". On the transition day of the Spring Daylight Saving Time, hour-ending 03 will not be shown.
- **FPA #** – The ordinal number of the FPA request listed in the section above that establishes the effective fuel price for the hour. If the FPA is actually withdrawn for the hour and there is no FPA subsequently submitted to cover the hour, the FPA ordinal is shown, the FPA status is shown as withdrawn and the effective fuel price is shown as "Index", meaning the published Fuel Index Price.
- **Effective Price** – The effective price of the FPA request for the hour. This price may be different than the effective price for the FPA shown above, in particular if the FPA is capped or withdrawn. Since the Fuel Index Price and the Fuel index Price Threshold can be different for each hour spanned by the FPA, the FPA price can be different from one hour to the next. It can be "Index" even though the FPA is not withdrawn as explained above.
- **Status** (of the referenced FPA request) – This is the FPA status for the hour: Approved / Capped / Withdrawn. Since the Fuel Index Price and the Fuel index Price Threshold can be different for each hour spanned by the FPA, the FPA status can be different from one hour to the next.

4.13.1 Validation rules

When you select the Submit button, eMarket makes the following checks to ensure that the entered FPA request is valid:

- The selected market day date must be today or tomorrow.
- The start hour of the FPA request, "From HE", must be greater than or equal to the hour-ending value of the current hour plus 30 minutes when the selected market day is today. In other words, an FPA request with an hour-ending value of the next hour of the current day as the start must be submitted at least 30 minutes before the start of that hour.
- The end hour of the FPA request, "To HE", must be greater than or equal to the hour-ending value of the start hour.
- The FPA requested price must be less than $1000.
- The FPA requested price must be greater than the most recent published Fuel Index Price of the fuel plus a threshold established by the ISO-NE Market Monitor[18] for all hours spanned by the FPA request.

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[18] Refer to Market Rule 1, Appendix A, Section III.A.3.4

4.13.2 View Specific Fuel Price Adjustment Information

1. In the Generation Navigation sub tabs, click the **Fuel Price Adjustments** tab.

   - The Fuel Price Adjustments display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Unit** filter; note that only units configured to use a fossil fuel (coal, oil or gas) will be listed in the drop-down list of units.
   d. Select the desired fuel from the **Fuel** filter; note that only the ***fuel index*** names of each fuel that the unit is registered with IMM to use are listed in the drop-down list.

      - The display is refreshed and shows information on all FPA requests that have been submitted for the selected date, unit and fuel, if there are any

4.13.3 Submit a Fuel Price Adjustment Request

1. View the desired unit's FPA information as described in §4.13.2
2. Enter all of the following information in the FPA Submittal section:

   a. From HE – Select a value between 01 and 24; on the Fall Daylight Saving Time transition day, the extra hour will be listed as 02*; on the Spring Daylight Saving Time transition day, hour-ending 03 will not be listed.
   b. To HE – Select a value between 01 and 24; on the Fall Daylight Saving Time transition day, the extra hour will be listed as 02*; on the Spring Daylight Saving Time transition day, hour-ending 03 will not be listed.
   c. Price – Enter a value for the requested price

3. Click the **Submit** button to save the data.

Your FPA request will be listed in the section below.

4.13.4 Withdraw a Fuel Price Adjustment Request

1. View the desired unit's FPA information as described in §4.13.2
2. In the Submitted FPA section of the display, select the FPA request that you want to withdraw.
3. Click the **Withdraw** button to withdraw the FPA; the button will be enabled only if the FPA can still be withdrawn.

The FPA status changes to WithdrawnPending and some time later, it changes again to Withdrawn.

4.13.5 Submit Document Attachments to a Fuel Price Adjustment Request

1. View the desired unit's FPA information as described in §4.13.2

2. In the Submitted FPA section of the display, select the FPA request to which you want to attach documents.
3. Click the **View Attachments** button. A pop-up display will be presented. Select the *Add* button and then browse to find the file that you want to upload and attach to the FPA. Select the *OK* button to upload the file.

The selected file is listed on the pop-up display. You can repeat this operation to upload additional documents. Simply click the *Close* button when you are done because the eMarket user interface cannot otherwise be used while the popup is open.

4.13.6 Remove Document Attachments of a Fuel Price Adjustment Request

1. View the desired unit's FPA information as described in §4.13.2
2. In the Submitted FPA section of the display, select the FPA request from which you want to remove document attachments.
3. Click the **View Attachments** button. A pop-up display will be presented listing the documents currently attached to the FPA request. Select the document that you want to remove and then select the *Remove* button.

The selected document is no longer listed on the pop-up display. You can repeat this operation to remove additional documents. Simply click the *Close* button when you are done because the eMarket user interface cannot otherwise be used while the popup is open.

4.14 Generation by Portfolio Display

You can view the cleared results of the Day-Ahead Market for each generating unit listed in a selected portfolio using the **Generation by Portfolio** display that is accessible on one of the Generation sub tabs. The day-ahead generation information includes the name of the schedule used when committing the unit. That will be the schedule that was designated to be available for the DA market on the selected day. If the unit was mitigated, this will be the cost-based mitigation schedule 99. The other information is the MW amount that the unit is committed to provide along with the Locational Marginal Price (LMP) at the generator node for each hour of the market day. If the unit was not committed, "(*No Schedule Committed*)" will be shown instead of the schedule name. Information for a 24-hour period is shown on two lines: the top line details the hours ending 01 through 12; the second line details hours ending 13 through 24. The last row of the display is labeled **Total Portfolio MW** and shows the total MW amount for each hour committed in the Day-Ahead market by all the units in your portfolio. Information on the display is shown only after the Day-Ahead market has been cleared.

The format of this display is shown below:

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The following generation information is displayed for each generating unit included in the selected generation portfolio:

- **Unit/Schedule** – the name of the generating unit and of the schedule on which it was committed. If the unit was not committed, "No Schedule Committed" is shown instead of a schedule name.
- **MW @ Price** – the MW amount that unit is committed to provide and the $/MWH DA LMP at the generator Pnode for each hour of the day.

4.14.1 View DA Commitment for each Unit in Portfolio

To view the commitment in the Day-Ahead market of the units listed in your portfolios and the Day-Ahead LMPs at their generator Pnodes:

1. In the Generation Navigation sub tabs, click the **Generation by Portfolio** tab

   - The Generation by Portfolio display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.

      - The display reflects the selected market day's day-ahead commitment and LMPs for each of the units listed in the selected portfolio. If the Day-Ahead market has not yet been cleared for the selected day, the following text is shown in the display title bar:
      "*The day ahead market results are not available …*"

4.15 XML Download for Generation Display

The XML Download display is accessible through the Generation Navigation sub tab. This display enables you to download pre-defined Generation specific XML report files of data that you maintain in the ISO-NE Market System, including results from the cleared Day-Ahead market. It also provides you the means to upload data in XML formatted data files into the ISO-NE Market System to be used to clear the Day-Ahead and Real Time markets. The format of the XML files can be found in the eMarket Data Exchange Specification posted on the ISO-NE web site under _**Support -> Data Retrieval -> Upload/Download File Formats**_.

The following XML reports of generation data are available for downloading:

- Units
- Unit Ramp Rates
- Unit Schedules
- Unit Schedule Details
- Unit Schedule Offers
- Unit Schedule Selection
- Unit Hourly Updates
- Unit Hourly Ramp Rate Updates
- Schedule Offers Hourly Updates
- Schedule Times Hourly Updates
- Fuel Price Adjustments
- Effective Hourly Fuel Prices of Units with FPAs
- Generation by Unit

Each returns an XML formatted report for the selected date and for all the unique units listed in all of the user's portfolios.

See §3.2 for details on uploading and downloading files. The following sections provide samples of the downloaded reports.

4.15.1 Units XML Report

This report contains the information that you entered and is on the Unit Default Parameters display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetUnitResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <Unit day="2014-08-24" ID="888">
    <CapacityResource>true</CapacityResource>
    <Claim10Settings claim10Capable="true">
      <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <Claim10Cap>0</Claim10Cap>
    </Claim10Settings>
    <Claim30Settings claim30Capable="true">
      <Claim30>0</Claim30>
      <Claim30Cap>0</Claim30Cap>
    </Claim30Settings>
    <DefaultStatus>Economic</DefaultStatus>
    <LeadParticipantID>88888</LeadParticipantID>
    <LeadParticipantName>Participant R Us</LeadParticipantName>
    <NodeID>888</NodeID>
    <NodeName>UN.NODE   13.8NODE</NodeName>
    <RampRateCap>2</RampRateCap>
    <RampRateDefault>0.5</RampRateDefault>
    <RegResource>false</RegResource>
    <FuelIndexList>
      <FuelIndex>No2</FuelIndex>
      <FuelIndex>MA_natgas2</FuelIndex>
    </FuelIndexList>
    <TypeOfUnit>CC</TypeOfUnit>
    <TypeOfUnitLongName>CT Combined Cycle</TypeOfUnitLongName>
    <UnitLongName>IAMUNIT</UnitLongName>
    <UnitNumber>88</UnitNumber>
    <UnitShortName>UNIT</UnitShortName>
  </Unit>
  <Unit day="2014-08-24" ID="999">
    <CapacityResource>true</CapacityResource>
    <Claim10Settings claim10Capable="true">
      <Claim10>11.3</Claim10>
      <Claim10Cap>8.6</Claim10Cap>
    </Claim10Settings>
    <Claim30Settings claim30Capable="true">
      <Claim30>11.8</Claim30>
      <Claim30Cap>8.6</Claim30Cap>
    </Claim30Settings>
    <DefaultStatus>Economic</DefaultStatus>
    <LeadParticipantID>99999</LeadParticipantID>
    <LeadParticipantName>Participant R Us 2</LeadParticipantName>
    <NodeID>999</NodeID>
    <NodeName>UN.NODENODE99  NODE</NodeName>
    <RampRateCap>1.5</RampRateCap>
    <RampRateDefault>1.5</RampRateDefault>
    <RegResource>false</RegResource>
    <FuelIndexList>
      <FuelIndex>No2</FuelIndex>
    </FuelIndexList>
    <TypeOfUnit>CT</TypeOfUnit>
```

```
        <TypeOfUnitLongName>Single Engine Jet</TypeOfUnitLongName>
        <UnitLongName>IAMUNIT2</UnitLongName>
        <UnitNumber>99</UnitNumber>
        <UnitShortName>UNIX</UnitShortName>
    </Unit>
</GetUnitResponse>
```

4.15.2 Unit Ramp Rates XML Report

This report contains the information that you entered and is on the Unit Ramp Rates display for all unique units listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetUnitRampRateResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    <UnitRampRate day="2014-08-24" ID="888">
        <RampRateCap>5</RampRateCap>
        <RampRateCurve>
            <RampRatePoint rate="5" MW="170"/>
        </RampRateCurve>
        <ShortName>UNIT</ShortName>
    </UnitRampRate>
    <UnitRampRate day="2014-08-24" ID="999">
        <RampRateCap>2.5</RampRateCap>
        <RampRateCurve>
            <RampRatePoint rate="1.5" MW="150"/>
            <RampRatePoint rate="2.5" MW="216"/>
            <RampRatePoint rate="1" MW="226"/>
        </RampRateCurve>
        <ShortName>UNIX</ShortName>
    </UnitRampRate>
</GetUnitRampRateResponse>
```

4.15.3 Unit Schedules XML Report

This report contains the information that you entered and is on the Unit Schedule Manager display for all schedules of every unique unit listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    <Schedule schedID="88805">
        <SchedLongName>UNIT Price</SchedLongName>
        <SchedShortName>UNITPric</SchedShortName>
        <SchedType>Price</SchedType>
        <SchedTypeID>5</SchedTypeID>
        <UnitID>888</UnitID>
        <UnitShortName>UNIT</UnitShortName>
    </Schedule>
    <Schedule schedID="88896">
        <SchedLongName>UNIT_Fuel 3 Ref. Schedule</SchedLongName>
        <SchedShortName>UNIT_R3</SchedShortName>
        <SchedType>Cost</SchedType>
        <SchedTypeID>96</SchedTypeID>
        <UnitID>888</UnitID>
        <UnitShortName>UNIT</UnitShortName>
    </Schedule>
    <Schedule schedID="88897">
        <SchedLongName>UNIT_Fuel 2 Ref. Schedule</SchedLongName>
```

```
        <SchedShortName>UNIT_R2</SchedShortName>
        <SchedType>Cost</SchedType>
        <SchedTypeID>97</SchedTypeID>
        <UnitID>888</UnitID>
        <UnitShortName>UNIT</UnitShortName>
    </Schedule>
    <Schedule schedID="88898">
        <SchedLongName>UNIT_Fuel 1 Ref. Schedule</SchedLongName>
        <SchedShortName>UNIT_R1</SchedShortName>
        <SchedType>Cost</SchedType>
        <SchedTypeID>98</SchedTypeID>
        <UnitID>888</UnitID>
        <UnitShortName>UNIT</UnitShortName>
    </Schedule>
    <Schedule schedID="88899">
        <SchedLongName>UNIT_Mitigation Schedule</SchedLongName>
        <SchedShortName>UNIT_M</SchedShortName>
        <SchedType>Cost</SchedType>
        <SchedTypeID>99</SchedTypeID>
        <UnitID>888</UnitID>
        <UnitShortName>UNIT</UnitShortName>
    </Schedule>
</GetScheduleResponse>
```

4.15.4 Unit Schedule Details XML Report

This report contains the information that you entered and is on the Unit Schedule Detail display for all schedules of every unique unit listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleDetailResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    <ScheduleDetail day="2014-08-24" ID="88805">
        <ColdNotifyTime>3.5</ColdNotifyTime>
        <ColdStartupTime>4</ColdStartupTime>
        <CondenseAvailable>false</CondenseAvailable>
        <CondenseHourlyCost>0</CondenseHourlyCost>
        <CondenseNotifyTime>0</CondenseNotifyTime>
        <CondensePower>0</CondensePower>
        <CondenseStartupCost>0</CondenseStartupCost>
        <EcoMax>153</EcoMax>
        <EcoMin>110</EcoMin>
        <EmerMin>110</EmerMin>
        <HotNotifyTime>3</HotNotifyTime>
        <HotStartupTime>1.5</HotStartupTime>
        <HotToColdTime>48</HotToColdTime>
        <HotToInterTime>24</HotToInterTime>
        <InterNotifyTime>3</InterNotifyTime>
        <InterStartupTime>2.5</InterStartupTime>
        <MarketType>Both</MarketType>
        <MaxDailyEnergy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <MaxDailyStarts>1</MaxDailyStarts>
        <MinDownTime>5.5</MinDownTime>
        <MinRunTime>4</MinRunTime>
        <RTHighOperLimit>153</RTHighOperLimit>
        <ScheduleAvailable>true</ScheduleAvailable>
        <ShortName>UNITPric</ShortName>
    </ScheduleDetail>
    <ScheduleDetail day="2014-08-24" ID="88896">
```

```xml
<ColdNotifyTime>1.5</ColdNotifyTime>
<ColdStartupTime>4</ColdStartupTime>
<CondenseAvailable>false</CondenseAvailable>
<CondenseHourlyCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondenseNotifyTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondensePower xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondenseStartupCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<EcoMax>153</EcoMax>
<EcoMin>110</EcoMin>
<EmerMin>110</EmerMin>
<HotNotifyTime>1</HotNotifyTime>
<HotStartupTime>1.5</HotStartupTime>
<HotToColdTime>48</HotToColdTime>
<HotToInterTime>24</HotToInterTime>
<InterNotifyTime>1</InterNotifyTime>
<InterStartupTime>2.5</InterStartupTime>
<MarketType>Both</MarketType>
<MaxDailyEnergy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<MaxDailyStarts xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<MinDownTime>5.5</MinDownTime>
<MinRunTime>4</MinRunTime>
<RTHighOperLimit>153</RTHighOperLimit>
<ScheduleAvailable>false</ScheduleAvailable>
<ShortName>UNIT_R3</ShortName>
</ScheduleDetail>
<ScheduleDetail day="2014-08-24" ID="88897">
<ColdNotifyTime>1.5</ColdNotifyTime>
<ColdStartupTime>4</ColdStartupTime>
<CondenseAvailable>false</CondenseAvailable>
<CondenseHourlyCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondenseNotifyTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondensePower xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondenseStartupCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<EcoMax>153</EcoMax>
<EcoMin>110</EcoMin>
<EmerMin>110</EmerMin>
<HotNotifyTime>1</HotNotifyTime>
<HotStartupTime>1.5</HotStartupTime>
<HotToColdTime>48</HotToColdTime>
<HotToInterTime>24</HotToInterTime>
<InterNotifyTime>1</InterNotifyTime>
<InterStartupTime>2.5</InterStartupTime>
<MarketType>Both</MarketType>
<MaxDailyEnergy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<MaxDailyStarts xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<MinDownTime>5.5</MinDownTime>
<MinRunTime>4</MinRunTime>
<RTHighOperLimit>153</RTHighOperLimit>
<ScheduleAvailable>false</ScheduleAvailable>
<ShortName>UNIT_R2</ShortName>
</ScheduleDetail>
<ScheduleDetail day="2014-08-24" ID="88898">
<ColdNotifyTime>1.5</ColdNotifyTime>
<ColdStartupTime>4</ColdStartupTime>
<CondenseAvailable>false</CondenseAvailable>
<CondenseHourlyCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondenseNotifyTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
<CondensePower xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
```

```
      <CondenseStartupCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <EcoMax>153</EcoMax>
      <EcoMin>110</EcoMin>
      <EmerMin>110</EmerMin>
      <HotNotifyTime>1</HotNotifyTime>
      <HotStartupTime>1.5</HotStartupTime>
      <HotToColdTime>48</HotToColdTime>
      <HotToInterTime>24</HotToInterTime>
      <InterNotifyTime>1</InterNotifyTime>
      <InterStartupTime>2.5</InterStartupTime>
      <MarketType>Both</MarketType>
      <MaxDailyEnergy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <MaxDailyStarts xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <MinDownTime>5.5</MinDownTime>
      <MinRunTime>4</MinRunTime>
      <RTHighOperLimit>153</RTHighOperLimit>
      <ScheduleAvailable>false</ScheduleAvailable>
      <ShortName>UNIT_R1</ShortName>
  </ScheduleDetail>
  <ScheduleDetail day="2014-08-24" ID="88899">
      <ColdNotifyTime>1.5</ColdNotifyTime>
      <ColdStartupTime>4</ColdStartupTime>
      <CondenseAvailable>false</CondenseAvailable>
      <CondenseHourlyCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <CondenseNotifyTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <CondensePower xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <CondenseStartupCost xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <EcoMax>153</EcoMax>
      <EcoMin>110</EcoMin>
      <EmerMin>110</EmerMin>
      <HotNotifyTime>1</HotNotifyTime>
      <HotStartupTime>1.5</HotStartupTime>
      <HotToColdTime>48</HotToColdTime>
      <HotToInterTime>24</HotToInterTime>
      <InterNotifyTime>1</InterNotifyTime>
      <InterStartupTime>2.5</InterStartupTime>
      <MarketType>Both</MarketType>
      <MaxDailyEnergy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      <MaxDailyStarts>1</MaxDailyStarts>
      <MinDownTime>5.5</MinDownTime>
      <MinRunTime>4</MinRunTime>
      <RTHighOperLimit>153</RTHighOperLimit>
      <ScheduleAvailable>true</ScheduleAvailable>
      <ShortName>UNIT_M</ShortName>
  </ScheduleDetail>
</GetScheduleDetailResponse>
```

4.15.5 Unit Schedule Offers XML Report

This report contains the information that you entered and is on the Unit Schedule Offers display for all schedules of every unique unit listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleBidResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ScheduleBid day="2014-08-24" ID="88801">
    <PriceCurve>
      <PricePoint price="888.99" MW="8.5">
        <FuelIndex>
```

```xml
                    <Name>Hydro_Run_of_River</Name>
                    <Percentage>100</Percentage>
                </FuelIndex>
            </PricePoint>
        </PriceCurve>
        <UseStartupNoLoad>true</UseStartupNoLoad>
        <UseOfferSlope>false</UseOfferSlope>
        <HotStartupCostAndFuel>
            <Cost>0</Cost>
            <FuelIndex>
                <Name>Hydro_Run_of_River</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
        </HotStartupCostAndFuel>
        <InterStartupCostAndFuel>
            <Cost>0</Cost>
            <FuelIndex>
                <Name>Hydro_Run_of_River</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
        </InterStartupCostAndFuel>
        <ColdStartupCostAndFuel>
            <Cost>0</Cost>
            <FuelIndex>
                <Name>Hydro_Run_of_River</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
        </ColdStartupCostAndFuel>
        <NoLoadCostAndFuel>
            <Cost>0</Cost>
            <FuelIndex>
                <Name>Hydro_Run_of_River</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
        </NoLoadCostAndFuel>
        <ShortName>DFLPRICE</ShortName>
    </ScheduleBid>
<ScheduleBid day="2014-08-24" ID="99905">
    <PriceCurve>
        <PricePoint price="99.69" MW="35">
            <FuelIndex>
                <Name>Coal_HS</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
            <FuelIndex>
                <Name>MA_natgas1</Name>
                <Percentage>0</Percentage>
            </FuelIndex>
        </PricePoint>
        <PricePoint price="99.78" MW="57">
            <FuelIndex>
                <Name>Coal_HS</Name>
                <Percentage>100</Percentage>
            </FuelIndex>
            <FuelIndex>
                <Name>MA_natgas1</Name>
                <Percentage>0</Percentage>
            </FuelIndex>
```

```xml
        </PricePoint>
      </PriceCurve>
      <UseStartupNoLoad>true</UseStartupNoLoad>
      <UseOfferSlope>false</UseOfferSlope>
      <HotStartupCostAndFuel>
        <Cost>12345.16</Cost>
        <FuelIndex>
          <Name>Coal_HS</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>MA_natgas1</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </HotStartupCostAndFuel>
      <InterStartupCostAndFuel>
        <Cost>12345.67</Cost>
        <FuelIndex>
          <Name>Coal_HS</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>MA_natgas1</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </InterStartupCostAndFuel>
      <ColdStartupCostAndFuel>
        <Cost>11111.11</Cost>
        <FuelIndex>
          <Name>Coal_HS</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>MA_natgas1</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </ColdStartupCostAndFuel>
      <NoLoadCostAndFuel>
        <Cost>1234.56</Cost>
        <FuelIndex>
          <Name>Coal_HS</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>MA_natgas1</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </NoLoadCostAndFuel>
      <ShortName>UNXPric</ShortName>
  </ScheduleBid>
</GetScheduleBidResponse>
```

4.15.6 Unit Schedule Selection XML Report

This report contains the information that you entered and is on the Unit Schedule Selection display for all schedules of every unique unit listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleSelectionResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ScheduleSelection day="2014-08-24">
    <Schedule ID="88805">
      <Available>true</Available>
      <ShortName>UNITPric</ShortName>
    </Schedule>
    <Schedule ID="88896">
      <Available>false</Available>
      <ShortName>UNIT_R3</ShortName>
    </Schedule>
    <Schedule ID="88897">
      <Available>false</Available>
      <ShortName>UNIT_R2</ShortName>
    </Schedule>
    <Schedule ID="88898">
      <Available>false</Available>
      <ShortName>UNIT_R1</ShortName>
    </Schedule>
    <Schedule ID="88899">
      <Available>true</Available>
      <ShortName>UNIT_M</ShortName>
    </Schedule>
    <Schedule ID="99905">
      <Available>true</Available>
      <ShortName>UNIXPric</ShortName>
    </Schedule>
    <Schedule ID="99996">
      <Available>false</Available>
      <ShortName>UNIX_R3</ShortName>
    </Schedule>
    <Schedule ID="99997">
      <Available>false</Available>
      <ShortName>UNIX_R2</ShortName>
    </Schedule>
    <Schedule ID="99998">
      <Available>false</Available>
      <ShortName>UNIX_R1</ShortName>
    </Schedule>
    <Schedule ID="99999">
      <Available>true</Available>
      <ShortName>UNIX_M</ShortName>
    </Schedule>
  </ScheduleSelection>
</GetScheduleSelectionResponse>
```

4.15.7 Unit Hourly Updates XML Report

This report contains the information that you entered and is on the Unit Hourly Updates display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetUnitHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <UnitHourly day="2014-08-24" ID="666">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <EmerMin>9</EmerMin>
        <EcoMax>9</EcoMax>
        <EcoMin>9</EcoMin>
        <RTHighOperLimit>9</RTHighOperLimit>
        <ResourceStatus>MustRun</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      <HourlyValues time="2014-08-24T01:00:00-04:00">
        <EmerMin>9</EmerMin>
        <EcoMax>9</EcoMax>
        <EcoMin>9</EcoMin>
        <RTHighOperLimit>9</RTHighOperLimit>
        <ResourceStatus>MustRun</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      <HourlyValues time="2014-08-24T02:00:00-04:00">
        <EmerMin>9</EmerMin>
        <EcoMax>9</EcoMax>
        <EcoMin>9</EcoMin>
        <RTHighOperLimit>9</RTHighOperLimit>
        <ResourceStatus>MustRun</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      .
      .
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <EmerMin>9</EmerMin>
        <EcoMax>9</EcoMax>
        <EcoMin>9</EcoMin>
        <RTHighOperLimit>9</RTHighOperLimit>
        <ResourceStatus>MustRun</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <EmerMin>9</EmerMin>
        <EcoMax>9</EcoMax>
        <EcoMin>9</EcoMin>
        <RTHighOperLimit>9</RTHighOperLimit>
        <ResourceStatus>MustRun</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
    </HourlyProfile>
```

```xml
      <ShortName>UNIT</ShortName>
   </UnitHourly>
   <UnitHourly day="2014-08-24" ID="777">
      <HourlyProfile>
         <HourlyValues time="2014-08-24T00:00:00-04:00">
            <EmerMin xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <EcoMax xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <EcoMin xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <RTHighOperLimit xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <ResourceStatus xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
         </HourlyValues>
         <HourlyValues time="2014-08-24T01:00:00-04:00">
            <EmerMin>11</EmerMin>
            <EcoMax>32</EcoMax>
            <EcoMin>22.6</EcoMin>
            <RTHighOperLimit>34</RTHighOperLimit>
            <ResourceStatus>Economic</ResourceStatus>
            <Claim10>15.2</Claim10>
            <Claim30>25</Claim30>
         </HourlyValues>
         <HourlyValues time="2014-08-24T02:00:00-04:00">
            <EmerMin>11</EmerMin>
            <EcoMax>32</EcoMax>
            <EcoMin>22.6</EcoMin>
            <RTHighOperLimit>34</RTHighOperLimit>
            <ResourceStatus>Economic</ResourceStatus>
            <Claim10>15.2</Claim10>
            <Claim30>25</Claim30>
         </HourlyValues>
         .
         .
         <HourlyValues time="2014-08-24T22:00:00-04:00">
            <EmerMin>11</EmerMin>
            <EcoMax>32</EcoMax>
            <EcoMin>22.6</EcoMin>
            <RTHighOperLimit>34</RTHighOperLimit>
            <ResourceStatus>Economic</ResourceStatus>
            <Claim10>15.2</Claim10>
            <Claim30>25</Claim30>
         </HourlyValues>
         <HourlyValues time="2014-08-24T23:00:00-04:00">
            <EmerMin xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <EcoMax xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <EcoMin xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <RTHighOperLimit xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <ResourceStatus xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
            <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
         </HourlyValues>
      </HourlyProfile>
      <ShortName>UNIX</ShortName>
   </UnitHourly>
</GetUnitHourlyResponse>
```

4.15.8 Unit Hourly Ramp Rate Updates XML Report

This report contains the information that you entered and is on the Unit Ramp Rate Hourly Updates display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetUnitRampRateHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <UnitRampRateHourly day="2014-08-24" ID="666">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T01:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T02:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T03:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T04:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T05:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T06:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T07:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T08:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T09:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T10:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T11:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T12:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T13:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T14:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
```

```xml
      </HourlyValues>
      <HourlyValues time="2014-08-24T15:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T16:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T17:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T18:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="4.1" MW="118.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T19:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T20:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="1.6" MW="50.1"/>
          <RampRatePoint rate="2.6" MW="90.1"/>
          <RampRatePoint rate="3.6" MW="120.1"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T21:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <FixedRampRate>4.9</FixedRampRate>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIT</ShortName>
  </UnitRampRateHourly>
</GetUnitRampRateHourlyResponse>
```

4.15.9 Schedule Offers Hourly Updates XML Report

This report contains the information that you entered and is on the Unit Schedule Offers Hourly Updates display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleBidHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ScheduleBidHourly day="2014-08-24" ID="66697">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <PriceCurve>
          <PricePoint price="183.71" MW="55">
            <FuelIndex>
              <Name>MA_natgas2</Name>
              <Percentage>0</Percentage>
            </FuelIndex>
            <FuelIndex>
              <Name>No2</Name>
              <Percentage>100</Percentage>
            </FuelIndex>
          </PricePoint>
          <PricePoint price="210.18" MW="60">
            <FuelIndex>
              <Name>MA_natgas2</Name>
              <Percentage>0</Percentage>
            </FuelIndex>
            <FuelIndex>
              <Name>No2</Name>
              <Percentage>100</Percentage>
            </FuelIndex>
          </PricePoint>
        </PriceCurve>
        <UseStartupNoLoad> true </UseStartupNoLoad>
        <UseOfferSlope>true</UseOfferSlope>
        <HotStartupCostAndFuel>
          <Cost> 9999.12 </Cost>
          <FuelIndex>
            <Name>MA_natgas2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
        </HotStartupCostAndFuel>
        <InterStartupCostAndFuel>
          <Cost>14999.12</Cost>
          <FuelIndex>
            <Name>MA_natgas2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
        </InterStartupCostAndFuel>
        <ColdStartupCostAndFuel>
```

```xml
        <Cost>99999.12</Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
    </ColdStartupCostAndFuel>
    <NoLoadCostAndFuel>
        <Cost>5047.0</Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
    </NoLoadCostAndFuel>
</HourlyValues>
.
.
<HourlyValues time="2014-08-24T23:00:00-04:00">
   <PriceCurve>
      <PricePoint price="183.71" MW="55">
        <FuelIndex>
           <Name>MA_natgas2</Name>
           <Percentage>0</Percentage>
        </FuelIndex>
        <FuelIndex>
           <Name>No2</Name>
           <Percentage>100</Percentage>
        </FuelIndex>
      </PricePoint>
      <PricePoint price="210.18" MW="60">
        <FuelIndex>
           <Name>MA_natgas2</Name>
           <Percentage>0</Percentage>
        </FuelIndex>
        <FuelIndex>
           <Name>No2</Name>
           <Percentage>100</Percentage>
        </FuelIndex>
      </PricePoint>
   </PriceCurve>
   <UseStartupNoLoad> true </UseStartupNoLoad>
   <UseOfferSlope>true</UseOfferSlope>
   <HotStartupCostAndFuel>
      <Cost>9999.12 </Cost>
      <FuelIndex>
         <Name>MA_natgas2</Name>
         <Percentage>0</Percentage>
      </FuelIndex>
      <FuelIndex>
         <Name>No2</Name>
         <Percentage>100</Percentage>
```

```xml
          </FuelIndex>
        </HotStartupCostAndFuel>
        <InterStartupCostAndFuel>
          <Cost>14999.12</Cost>
          <FuelIndex>
            <Name>MA_natgas2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
        </InterStartupCostAndFuel>
        <ColdStartupCostAndFuel>
          <Cost>99999.12</Cost>
          <FuelIndex>
            <Name>MA_natgas2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
        </ColdStartupCostAndFuel>
        <NoLoadCostAndFuel>
          <Cost>5047.0</Cost>
          <FuelIndex>
            <Name>MA_natgas2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
        </NoLoadCostAndFuel>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIT_R2</ShortName>
  </ScheduleBidHourly>
  <ScheduleBidHourly day="2014-08-24" ID="66698">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <PriceCurve>
          <PricePoint price="83.71" MW="55">
            <FuelIndex>
              <Name>MA_natgas2</Name>
              <Percentage>100</Percentage>
            </FuelIndex>
            <FuelIndex>
              <Name>No2</Name>
              <Percentage>0</Percentage>
            </FuelIndex>
          </PricePoint>
          <PricePoint price="110.18" MW="60">
            <FuelIndex>
              <Name>MA_natgas2</Name>
              <Percentage>100</Percentage>
            </FuelIndex>
```

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```xml
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
        </PricePoint>
      </PriceCurve>
      <UseStartupNoLoad> true </UseStartupNoLoad>
      <UseOfferSlope>true</UseOfferSlope>
      <HotStartupCostAndFuel>
        <Cost>6666.12 </Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </HotStartupCostAndFuel>
      <InterStartupCostAndFuel>
        <Cost>11666.12</Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </InterStartupCostAndFuel>
      <ColdStartupCostAndFuel>
        <Cost>166666.12</Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </ColdStartupCostAndFuel>
      <NoLoadCostAndFuel>
        <Cost>2547.0</Cost>
        <FuelIndex>
          <Name>MA_natgas2</Name>
          <Percentage>100</Percentage>
        </FuelIndex>
        <FuelIndex>
          <Name>No2</Name>
          <Percentage>0</Percentage>
        </FuelIndex>
      </NoLoadCostAndFuel>
</HourlyValues>
.
.
.
<HourlyValues time="2014-08-24T23:00:00-04:00">
  <PriceCurve>
    <PricePoint price="83.71" MW="55">
```

```xml
      <FuelIndex>
        <Name>MA_natgas2</Name>
        <Percentage>100</Percentage>
      </FuelIndex>
      <FuelIndex>
        <Name>No2</Name>
        <Percentage>0</Percentage>
      </FuelIndex>
    </PricePoint>
    <PricePoint price="110.18" MW="60">
      <FuelIndex>
        <Name>MA_natgas2</Name>
        <Percentage>100</Percentage>
      </FuelIndex>
      <FuelIndex>
        <Name>No2</Name>
        <Percentage>0</Percentage>
      </FuelIndex>
    </PricePoint>
  </PriceCurve>
  <UseStartupNoLoad> true </UseStartupNoLoad>
  <UseOfferSlope>true</UseOfferSlope>
  <HotStartupCostAndFuel>
    <Cost>6666.12 </Cost>
    <FuelIndex>
      <Name>MA_natgas2</Name>
      <Percentage>100</Percentage>
    </FuelIndex>
    <FuelIndex>
      <Name>No2</Name>
      <Percentage>0</Percentage>
    </FuelIndex>
  </HotStartupCostAndFuel>
  <InterStartupCostAndFuel>
    <Cost>11666.12</Cost>
    <FuelIndex>
      <Name>MA_natgas2</Name>
      <Percentage>100</Percentage>
    </FuelIndex>
    <FuelIndex>
      <Name>No2</Name>
      <Percentage>0</Percentage>
    </FuelIndex>
  </InterStartupCostAndFuel>
  <ColdStartupCostAndFuel>
    <Cost>166666.12</Cost>
    <FuelIndex>
      <Name>MA_natgas2</Name>
      <Percentage>100</Percentage>
    </FuelIndex>
    <FuelIndex>
      <Name>No2</Name>
      <Percentage>0</Percentage>
    </FuelIndex>
  </ColdStartupCostAndFuel>
  <NoLoadCostAndFuel>
    <Cost>2547.0</Cost>
    <FuelIndex>
```

```xml
            <Name>MA_natgas2</Name>
            <Percentage>100</Percentage>
          </FuelIndex>
          <FuelIndex>
            <Name>No2</Name>
            <Percentage>0</Percentage>
          </FuelIndex>
        </NoLoadCostAndFuel>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIT_R1</ShortName>
</ScheduleBidHourly>
```

4.15.10 Schedule Times Hourly Updates XML Report

This report contains the information that you entered and is on the Unit Schedule Times Hourly Updates display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetScheduleTimesHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ScheduleTimesHourly day="2014-08-24" ID="77797">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <HotStartupTime>1.5</HotStartupTime>
        <InterStartupTime>2.5</InterStartupTime>
        <ColdStartupTime>4</ColdStartupTime>
        <HotNotifyTime>1</HotNotifyTime>
        <InterNotifyTime>1</InterNotifyTime>
        <ColdNotifyTime>1.5</ColdNotifyTime>
      </HourlyValues>
      .
      .
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <HotStartupTime>1.5</HotStartupTime>
        <InterStartupTime>2.5</InterStartupTime>
        <ColdStartupTime>4</ColdStartupTime>
        <HotNotifyTime>1</HotNotifyTime>
        <InterNotifyTime>1</InterNotifyTime>
        <ColdNotifyTime>1.5</ColdNotifyTime>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIX_R2</ShortName>
  </ScheduleTimesHourly>
  <ScheduleTimesHourly day="2014-08-24" ID="77798">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <HotStartupTime>1.5</HotStartupTime>
        <InterStartupTime>2.5</InterStartupTime>
        <ColdStartupTime>4</ColdStartupTime>
        <HotNotifyTime>1</HotNotifyTime>
        <InterNotifyTime>1</InterNotifyTime>
        <ColdNotifyTime>1.5</ColdNotifyTime>
      </HourlyValues>
      .
      .
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <HotStartupTime>1.5</HotStartupTime>
        <InterStartupTime>2.5</InterStartupTime>
        <ColdStartupTime>4</ColdStartupTime>
        <HotNotifyTime>1</HotNotifyTime>
        <InterNotifyTime>1</InterNotifyTime>
        <ColdNotifyTime>1.5</ColdNotifyTime>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIX_R1</ShortName>
  </ScheduleTimesHourly>
</GetScheduleTimesHourlyResponse>
```

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4.15.11 Fuel Price Adjustments XML Report

This report contains the information that is shown in the Submitted FPA section of the Fuel Price Adjustments display for all unique units listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetFuelPriceAdjustmentUnitResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <FuelPriceAdjustmentUnit day="2014-08-24" ID="666">
    <UnitLongName>UNITLongName</UnitLongName>
    <FuelPriceAdjustmentFuel>
      <FuelIndex>MA_natgas2</FuelIndex>
      <FuelPriceAdjustment FPAID="466188495">
        <StartHour>2014-08-24T08:00:00-04:00</StartHour>
        <EndHour>2014-08-24T10:00:00-04:00</EndHour>
        <RequestedPrice>4.5</RequestedPrice>
        <EffectivePrice>4.05</EffectivePrice>
        <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
        <SubmittedBy>GenUser</SubmittedBy>
        <SubmitAcceptedTime>2014-08-23T08:32:13-04:00</SubmitAcceptedTime>
        <WithdrawnBy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnHour xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnAcceptedTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Status>Capped</Status>
        <Attachments>
          <Attachment>
            <AttachmentID>466188624</AttachmentID>
            <FileName>error message.docx</FileName>
            <UploadedBy>GenUser</UploadedBy>
            <UploadedTime>2014-08-23T08:34:37-04:00</UploadedTime>
          </Attachment>
        </Attachments>
      </FuelPriceAdjustment>
      <FuelPriceAdjustment FPAID="466188795">
        <StartHour>2014-08-24T14:00:00-04:00</StartHour>
        <EndHour>2014-08-24T19:00:00-04:00</EndHour>
        <RequestedPrice>4.11</RequestedPrice>
        <EffectivePrice>4.11</EffectivePrice>
        <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
        <SubmittedBy>GenUser</SubmittedBy>
        <SubmitAcceptedTime>2014-08-23T08:35:35-04:00</SubmitAcceptedTime>
        <WithdrawnBy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnHour xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnAcceptedTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Status>Approved</Status>
      </FuelPriceAdjustment>
      <FuelPriceAdjustment FPAID="466203107">
        <StartHour>2014-08-24T20:00:00-04:00</StartHour>
        <EndHour>2014-08-24T22:00:00-04:00</EndHour>
        <RequestedPrice>4.75</RequestedPrice>
        <EffectivePrice>4.75</EffectivePrice>
        <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
        <SubmittedBy>ISO-NE IMM</SubmittedBy>
        <SubmitAcceptedTime>2014-08-23T13:33:47-04:00</SubmitAcceptedTime>
        <WithdrawnBy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnHour xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <WithdrawnAcceptedTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Status>Approved</Status>
```

```
        </FuelPriceAdjustment>
      </FuelPriceAdjustmentFuel>
    </FuelPriceAdjustmentUnit>
    <FuelPriceAdjustmentUnit day="2014-08-24" ID="999">
      <UnitLongName>UNIT X</UnitLongName>
      <FuelPriceAdjustmentFuel>
        <FuelIndex>No6_070</FuelIndex>
        <FuelPriceAdjustment FPAID="466207278">
          <StartHour>2014-08-24T03:00:00-04:00</StartHour>
          <EndHour>2014-08-24T07:00:00-04:00</EndHour>
          <RequestedPrice>30</RequestedPrice>
          <EffectivePrice>16.64</EffectivePrice>
          <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
          <SubmittedBy>GenUser</SubmittedBy>
          <SubmitAcceptedTime>2014-08-23T14:56:32-04:00</SubmitAcceptedTime>
          <WithdrawnBy xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <WithdrawnHour xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <WithdrawnAcceptedTime xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Status>Capped</Status>
        </FuelPriceAdjustment>
      </FuelPriceAdjustmentFuel>
    </FuelPriceAdjustmentUnit>
  </GetFuelPriceAdjustmentUnitResponse>
```

4.15.12 Effective Hourly Fuel Prices of Units with FPAs XML Report

This report contains the information that is shown in the Effective Fuel Price Adjustments section of the Fuel Price Adjustments display for all unique units listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetFuelPriceAdjustmentUnitHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <FuelPriceAdjustmentUnitHourly day="2014-08-24" ID="999">
    <UnitLongName>UNITXLongName</UnitLongName>
    <FuelPriceAdjustmentFuelHourly>
      <FuelIndex>MA_natgas2</FuelIndex>
      <HourlyProfile>
        <HourlyValues time="2014-08-24T08:00:00-04:00">
          <FPAID>466188495</FPAID>
          <EffectivePrice>41.5</EffectivePrice>
          <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
          <Status>Approved</Status>
        </HourlyValues>
        <HourlyValues time="2014-08-24T09:00:00-04:00">
          <FPAID>466188495</FPAID>
          <EffectivePrice>41.5</EffectivePrice>
          <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
          <Status>Approved</Status>
        </HourlyValues>
        <HourlyValues time="2014-08-24T10:00:00-04:00">
          <FPAID>466188495</FPAID>
          <EffectivePrice>41.5</EffectivePrice>
          <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
          <Status>Approved</Status>
        </HourlyValues>
        <HourlyValues time="2014-08-24T11:00:00-04:00">
          <FPAID>466188495</FPAID>
          <EffectivePrice>40.5</EffectivePrice>
          <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
```

```xml
    <Status>Capped</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T12:00:00-04:00">
    <FPAID>466188495</FPAID>
    <EffectivePrice>40.5</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Capped</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T13:00:00-04:00">
    <FPAID>466188495</FPAID>
    <EffectivePrice>40.5</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Capped</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T14:00:00-04:00">
    <FPAID>466188795</FPAID>
    <EffectivePrice>40.5</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Capped</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T15:00:00-04:00">
    <FPAID>466188795</FPAID>
    <EffectivePrice>40.5</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Capped</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T16:00:00-04:00">
    <FPAID>466188805</FPAID>
    <EffectivePrice>39.95</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Approved</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T17:00:00-04:00">
    <FPAID>466188805</FPAID>
    <EffectivePrice>39.95</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Approved</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T18:00:00-04:00">
    <FPAID>466188805</FPAID>
    <EffectivePrice>39.95</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Approved</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T19:00:00-04:00">
    <FPAID>466188805</FPAID>
    <EffectivePrice>39.95</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Approved</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T20:00:00-04:00">
    <FPAID>466188805</FPAID>
    <EffectivePrice>39.95</EffectivePrice>
    <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
    <Status>Approved</Status>
  </HourlyValues>
  <HourlyValues time="2014-08-24T21:00:00-04:00">
    <FPAID>466203107</FPAID>
```

```xml
        <EffectivePrice>41.75</EffectivePrice>
        <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
        <Status>Approved</Status>
      </HourlyValues>
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <FPAID>466203107</FPAID>
        <EffectivePrice>41.75</EffectivePrice>
        <EffectivePriceIsIndex>false</EffectivePriceIsIndex>
        <Status>Approved</Status>
      </HourlyValues>
    </HourlyProfile>
   </FuelPriceAdjustmentFuelHourly>
  </FuelPriceAdjustmentUnitHourly>
</GetFuelPriceAdjustmentUnitHourlyResponse>
```

4.15.13 Generation by Unit XML Report

This report contains the same information that is shown on the Generation by Portfolio display. The report contains information only after the Day-Ahead market has been cleared and the time for the opening of the Re-Offer Period of the selected day has passed. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetGenByParticipantResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <GenByParticipant day="2014-08-24" ID="666">
    <UnitShortName>UNIT</UnitShortName>
    <UnitScheduleID>66699</UnitScheduleID>
    <UnitScheduleShortName>UNIT_M</UnitScheduleShortName>
    <HourlyProfile>
      <HourlyValues priceCapped="false" time="2014-08-24T00:00:00-04:00" MW="23" price="29.62"/>
      <HourlyValues priceCapped="false" time="2014-08-24T01:00:00-04:00" MW="23" price="29.53"/>
      <HourlyValues priceCapped="false" time="2014-08-24T02:00:00-04:00" MW="23" price="30.78"/>
      <HourlyValues priceCapped="false" time="2014-08-24T03:00:00-04:00" MW="23" price="35.55"/>
      <HourlyValues priceCapped="false" time="2014-08-24T04:00:00-04:00" MW="23" price="38.69"/>
      <HourlyValues priceCapped="false" time="2014-08-24T05:00:00-04:00" MW="23" price="41.67"/>
      <HourlyValues priceCapped="false" time="2014-08-24T06:00:00-04:00" MW="23" price="42.09"/>
      <HourlyValues priceCapped="false" time="2014-08-24T07:00:00-04:00" MW="23" price="40.75"/>
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      <HourlyValues priceCapped="false" time="2014-08-24T22:00:00-04:00" MW="23" price="36.45"/>
      <HourlyValues priceCapped="false" time="2014-08-24T23:00:00-04:00" MW="23" price="34.44"/>
    </HourlyProfile>
  </GenByParticipant>
  <GenByParticipant day="2014-08-24" ID="666">
    <UnitShortName>UNIT</UnitShortName>
    <UnitScheduleID>66605</UnitScheduleID>
    <UnitScheduleShortName>UNITPric</UnitScheduleShortName>
    <HourlyProfile>
      <HourlyValues priceCapped="false" time="2014-08-24T09:00:00-04:00" MW="13" price="129.62"/>
      <HourlyValues priceCapped="false" time="2014-08-24T10:00:00-04:00" MW="13" price="129.53"/>
      <HourlyValues priceCapped="false" time="2014-08-24T11:00:00-04:00" MW="13" price="130.78"/>
      <HourlyValues priceCapped="false" time="2014-08-24T12:00:00-04:00" MW="13" price="135.55"/>
      <HourlyValues priceCapped="false" time="2014-08-24T13:00:00-04:00" MW="13" price="138.69"/>
      <HourlyValues priceCapped="false" time="2014-08-24T14:00:00-04:00" MW="13" price="141.67"/>
      <HourlyValues priceCapped="false" time="2014-08-24T15:00:00-04:00" MW="13" price="142.09"/>
      <HourlyValues priceCapped="false" time="2014-08-24T16:00:00-04:00" MW="13" price="140.75"/>
      <HourlyValues priceCapped="false" time="2014-08-24T17:00:00-04:00" MW="13" price="138.95"/>
      <HourlyValues priceCapped="false" time="2014-08-24T18:00:00-04:00" MW="13" price="136.45"/>
      <HourlyValues priceCapped="false" time="2014-08-24T19:00:00-04:00" MW="13" price="134.44"/>
      <HourlyValues priceCapped="false" time="2014-08-24T20:00:00-04:00" MW="13" price="136.54"/>
```

        <HourlyValues priceCapped="false" time="2014-08-24T21:00:00-04:00" MW="13" price="129.33"/>
      </HourlyProfile>
  </GenByParticipant>
  <GenByParticipant day="2014-08-24" ID="77776">
    <UnitShortName>UNIX</UnitShortName>
    <UnitScheduleID>7777601</UnitScheduleID>
    <UnitScheduleShortName>DFLPRICE</UnitScheduleShortName>
    <HourlyProfile>
        <HourlyValues priceCapped="false" time="2014-08-24T00:00:00-04:00" MW="11" price="225.96"/>
        <HourlyValues priceCapped="false" time="2014-08-24T01:00:00-04:00" MW="11" price="223.91"/>
        <HourlyValues priceCapped="false" time="2014-08-24T02:00:00-04:00" MW="11" price="222.45"/>
        <HourlyValues priceCapped="false" time="2014-08-24T03:00:00-04:00" MW="11" price="221.42"/>
        <HourlyValues priceCapped="false" time="2014-08-24T04:00:00-04:00" MW="11" price="222.47"/>
        <HourlyValues priceCapped="false" time="2014-08-24T05:00:00-04:00" MW="11" price="223.82"/>
        <HourlyValues priceCapped="false" time="2014-08-24T06:00:00-04:00" MW="11" price="228.04"/>
        <HourlyValues priceCapped="false" time="2014-08-24T07:00:00-04:00" MW="11" price="231.35"/>
        <HourlyValues priceCapped="false" time="2014-08-24T08:00:00-04:00" MW="11" price="231.44"/>
        <HourlyValues priceCapped="false" time="2014-08-24T09:00:00-04:00" MW="11" price="232.27"/>
        <HourlyValues priceCapped="false" time="2014-08-24T10:00:00-04:00" MW="11" price="233.56"/>
        <HourlyValues priceCapped="false" time="2014-08-24T11:00:00-04:00" MW="11" price="235.06"/>
        <HourlyValues priceCapped="false" time="2014-08-24T12:00:00-04:00" MW="12" price="239.89"/>
        <HourlyValues priceCapped="false" time="2014-08-24T13:00:00-04:00" MW="12" price="243.62"/>
        <HourlyValues priceCapped="false" time="2014-08-24T14:00:00-04:00" MW="17" price="246.19"/>
        <HourlyValues priceCapped="false" time="2014-08-24T15:00:00-04:00" MW="17" price="246.79"/>
        <HourlyValues priceCapped="false" time="2014-08-24T16:00:00-04:00" MW="17" price="246.33"/>
        <HourlyValues priceCapped="false" time="2014-08-24T17:00:00-04:00" MW="12" price="243.79"/>
        <HourlyValues priceCapped="false" time="2014-08-24T18:00:00-04:00" MW="12" price="240.52"/>
        <HourlyValues priceCapped="false" time="2014-08-24T19:00:00-04:00" MW="12" price="237.71"/>
        <HourlyValues priceCapped="false" time="2014-08-24T20:00:00-04:00" MW="12" price="239.22"/>
        <HourlyValues priceCapped="false" time="2014-08-24T21:00:00-04:00" MW="11" price="232.22"/>
        <HourlyValues priceCapped="false" time="2014-08-24T22:00:00-04:00" MW="11" price="230.35"/>
        <HourlyValues priceCapped="false" time="2014-08-24T23:00:00-04:00" MW="11" price="228.97"/>
      </HourlyProfile>
  </GenByParticipant>
</GetGenByParticipantResponse>

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5. Regulation Tab

To access the Regulation Tab, you must be a registered user with a Regulation Read/Write or Read-Only role. When you have this access, the Regulation tab will be shown and selecting it will show all of its display sub tabs as shown below.

5.1 Regulation Offer Concepts

Regulation resources are specially equipped generating resources that are able to increase or decrease generation output every four seconds in response to signals it receives from ISO New England in order to control changes in the system load and fluctuations on the system tie-lines. There are two types of regulation resources:

- Generating units that are capable of providing regulation. These are flagged as Regulation Resources in the database. This status is shown on the Generation Unit Default Parameters display.

- Alternative Technology Regulation Resources (ATRRs) – These are a new type of assets in the Market database that are capable of providing only regulation capability and therefore are limited to participating in only the Regulation Market.

When submitting data, it is important to understand the hierarchy of the Regulation offer data and the implications of data overrides. Figure 9 below shows the hierarchy of the Regulation displays used to submit data and where the same offer data appears in different displays, the data of which display has precedence over (overrides) the others. [**Note**: only the data elements subject to overrides are shown.]

The Regulation Offer display is at the root of the hierarchy. Participants must submit a complete set of Regulation offer data using this display when the asset is first instantiated in the database. These offers persist for future Market days until they are changed. The Regulation Hourly Updates displays allow the Participant to profile his physical and financial regulation offers on an hourly basis for a given Market day. These hourly updates offer data supersede the corresponding offer data for the Market day only; they don't extend to future market days.
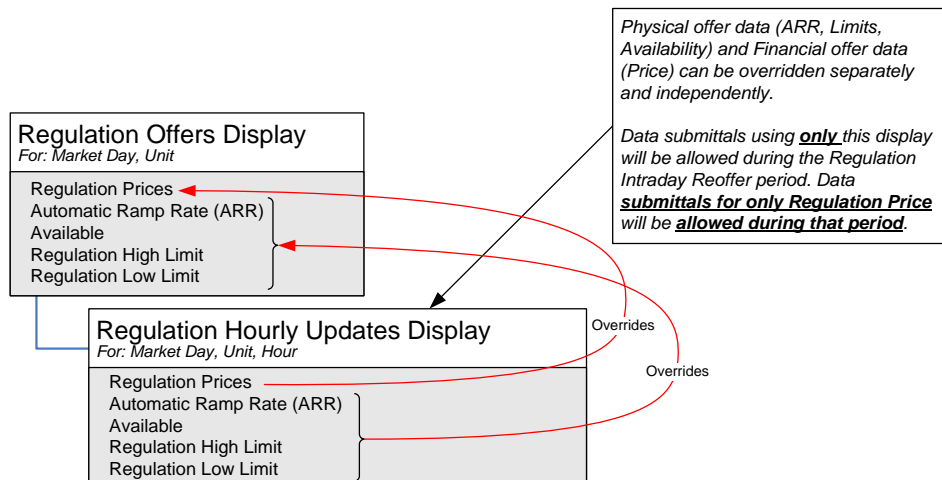
Figure 9 – Regulation Display Hierarchy and Data Precedence

5.2 Regulation Portfolio Manager Display

A regulation portfolio is a collection of regulation resources that are identified by each user. The user assigns a unique name to each portfolio when it is created. There is no limit to the number of regulation portfolios a user can create. Once a portfolio is created the user assigns one or more regulation resource. There is no limit to the number of regulation resources that can be "assigned" to a portfolio. A regulation resource can be assigned to more than one portfolio. It must be noted that only regulation resources can be assigned to regulation portfolios. Therefore where you are looking at the Portfolio Manager display for regulation portfolios, only generating units capable of providing regulation and ATRRs that belong to the Participant that you represent will be listed as Regulation Assets.

Data is filtered by the regulation portfolio on the following displays:

- Regulation Offers
- Regulation Hourly Updates Display

Note: A regulation resource that is not associated with a portfolio cannot be selected in these displays' tooltray filters.

See §3.1 Manage Portfolios for more information on the purpose of portfolios and details on using this display.

5.3 Regulation Offers Default Display

A regulation offer is submitted by a regulation Market Participant to sell regulation services. This display is to view and update the Participant's regulation offers for every regulation resource in the user's selected portfolio.

Regulation offers for a regulation resource consist of regulation high and low limits, a regulation (automatic) ramp rate, offers for regulation capacity (two parts) and service, and the resource's availability to participate in the Regulation market. Regulation offers for a given market day can be updated up to the close of the daily Regulation Market period. See §1.4 for a complete definition of the eMarket timeline for regulation offers.

The format of this display is shown below:

The fields on this display are:

- **Resource Short Name** – The name of the regulation resource.
- **Reg Capability** – The regulation capability: a calculated value equal to the day's derate factor times the minimum of 5 times the regulation ramp rate (ARR) and half the difference between the regulation high and low limits; i.e., Reg Capability = Derate Factor x Min (5 x ARR, [Reg High[19] – Reg Low[19]]/2).
- **Reg Cap ITO Cost** – The price requested to cover the regulation inter-temporal opportunity capacity cost ($/MWH) of the resource.
- **Reg Cap Offer Other** – The price requested to cover all other regulation capacity cost ($/MWH) of the resource.
- **Reg Serv Price** – The price requested to cover the regulation service cost ($/MWH) of the resource.
- **ARR (Automatic Response Rate)** – The MW/Minute rate at which the resource can change its MW output in response to regulation dispatch instructions.

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[19] Effectively, it is the minimum of the Reg High and Reg Ceil limits and the maximum of the Reg Low and Reg Floor limits.

- **ARR Cap** – The resource's demonstrated ARR Capability value that was established during the last audit conducted by ISO New England. The offer value for ARR will be capped (constrained) to this value within the generation dispatch software if it is defined. If the demonstrated capability value is undefined, it will be shown as blank.
- **Dispatch Method** – The dispatch methodology of the regulating resource. The possibilities are:
  - CONT – for Continuous; not energy neutral (for traditional thermal units, but can apply to ATRRs)
  - ENC – for Energy Neutral Continuous (applicable to ATRRs only)
  - ENT – for Energy Neutral Trinary (applicable to ATRRs only)

- **Reg High** – The highest level of energy, in MW, that the Participant will allow for the operation of the resource while it is providing regulation (on Automatic Generation Control). This is the Regulation High Limit (RHL).
- **RHL Ceil** – The highest level of energy, in MW, recognized by ISO New England for the operation of the resource while it is providing regulation (on Automatic Generation Control). For generators, this is the unit's <u>daily</u> Economic Maximum limit shown on the Schedule Detail Defaults display for the schedule designated for the RT Market on the selected market day. For ATRRs, this is a value set for the resource by the ISO New England.
- **Reg Low** – The lowest level of energy, in MW, that the Participant will allow for operation of the resource while it is providing regulation (on Automatic Generation Control). This is the Regulation Low Limit (RLL).
- **RLL Floor** – The lowest level of energy, in MW, recognized by ISO New England for the operation of the resource while it is providing regulation (on Automatic Generation Control). For generators, this is unit's <u>daily</u> Economic Minimum limit shown on the Schedule Detail Defaults display for the schedule designated for the RT Market on the selected market day. For ATRRs, this is a value set for the resource by the ISO New England.
- **Unavail** – When checked it indicates that the resource is not available for regulation; entered by the Participant.
- **Derate Factor** – This is a value between 0 and 1 that is calculated based on historical performance that provides an estimate of the resource's future capability to respond to an AGC setpoint. It is set by the ISO New England.
- **Derate Comment** – A comment entered by the ISO New England the last time the Derate Factor value was changed.
- **Service Factor** – A factor that is calculated based on historical performance that provides an estimate of the resource's regulation service as a multiple of capacity. It is set by the ISO New England.
- **Service Comment** – A comment entered by the ISO New England the last time the Service Factor value was changed.
- **Exclude Flag** – When checked it indicates that the resource is excluded from the regulation market by the ISO New England.
- **Exclude Comment** – A comment entered by the ISO New England the last time the Exclude Flag value was changed.

5.3.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered value is valid:

- Automatic Response Rate cannot be less than a minimum allowable response rate that is set by ISO New England.
- A warning will be issued if the Automatic Response rate exceeds the ARR Cap, when one is defined.

- Reg Floor ≤ Reg Low < Reg High ≤ Reg Ceil
  Note that for ATRRs, the regulation limits can be negative. For generating units, the regulation limits must be strictly positive; the economic limits (Reg Floor = Economic Minimum, Reg Ceil = Economic Maximum) are the more constraining of the limits among the daily default (those entered on the Schedule Detail Defaults display) and the hourly updates (those entered on the Unit Hourly Updates display) for the selected market day; thus the limits used for validation are not necessarily the ones shown on the display in the Reg Floor and Reg Ceil columns. This is the *limit nesting rule*. A warning message is returned when this rule is violated.

- Total regulation capacity offer price (Reg Cap ITO Cost + Reg Cap Offer Other) cannot exceed $100.00 and must be greater than the Regulation Floor Price determined by the ISO New England.

- Regulation service offer price (Reg Serv Price) cannot exceed $10.00 and must be greater than the Regulation Floor Price determined by the ISO New England.

5.3.2 Modify Regulation Offers

1. In the Regulation Navigation sub tabs, click the **Regulation Offers Default** tab.

   - The Regulation Offers Daily Default display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.

      ▪ The detail of the regulation offers for the resources in the selected portfolio is displayed.

3. Enter any or all of the following information for the desired resources:

   a. Regulation Prices
   b. Automatic Response Rate
   c. Available/Unavailable
   d. Regulation limits

4. Click the **Update** button to save the data.

5.4 Regulation Hourly Updates Display

This display is used to view and modify the hourly overrides of a resource's daily (default) regulation offer parameters for a specified market day. Refer to section 1.4 Business Rules and Timelines for the specification of when regulation hourly updates can be submitted into the market and which can be submitted during the Regulation Intraday Re-Offer period.

The format of this display is shown below:

During the Regulation Intraday Re-Offer period, the rows for hours where regulation offers cannot be updated will be grayed out. For generating resources the data entry cells for future hours of regulation financial offers will be the only ones shown (open) on the display, as illustrated below.

There are two frames in this display:

1. **Regulation Daily Default Values** – This frame shows the daily default regulation offer parameters for the selected regulation resource and market day. They are the values shown on the Regulation Offers Default display. You cannot change these values using this display; they are shown for reference only.

2. **Regulation Hourly Updates** – This frame shows the hourly overrides of the selected resource's regulation parameters for the selected market day. The fields in this frame are:

   - **Hour** – Hour ending values are shown in the first column for each hour in the day. The row for hour ending 03 is not shown for the Spring Daylight Saving Time transition day. Similarly, the value on the row of the repeating hour ending 02 of the Fall Daylight Saving Time transition day is marked with an asterisk (*).
   - **Reg Capability** – The MW regulation capability for the hour calculated from the ARR for the hour, the regulation limits for the hour and the derate

factor for the day. It is equal to the day's derate factor times the minimum of 5 times the regulation ramp rate (ARR) and half the difference between the regulation high and low limits; i.e.,

Reg Capability = Derate Factor x Min (5 x ARR, [Reg High[20] – Reg Low[20]]/2).

In the absence of an ARR and regulation limits for the hour, the daily offer values are used.

- **Reg Low** – The regulation low limit override value if it is not blank.
- **Reg High** – The regulation high limit override value if it is not blank
- **ARR (Automatic Response Rate)** – The regulation response rate override value if it is not blank.
- **Unavail** – Checkbox that serves to override the default status for the day. Refer to the legend shown of the display for the definition of the each state of the tri-state checkbox.
- **Reg Cap ITO Cost** – The regulation inter-temporal opportunity capacity cost ($/MWH) override value if it is not blank.
- **Reg Cap Offer Oth** – The other regulation capacity cost ($/MWH) override value if it is not blank.
- **Reg Serv Price** – The regulation service cost ($/MWH) override value if it is not blank.

The top row of the grid provides you with the means to enter or clear overrides for a selected range of hours. You select the range of hours to override by selecting a "From" hour-ending value (left) and a "To" hour-ending value and then selecting the "Copy" button to copy the values entered in the top row to the hourly rows that you specified for the hourly range before you select the "Update" to save the data that you entered on the screen.

Hourly overrides of the physical parameters (Reg Low, Reg High, ARR and Unavail) and the financial parameters (Reg Cap ITO Cost, Reg Cap Offer Oth and Reg Serv Price) are independent. In other words, you can submit overrides of the physical parameters for some hours without also submitting overrides of the financial parameters for these hours; the financial parameter values for these hours would be the daily default values. Vice versa, you can submit overrides of the financial parameters for some hours without also submitting overrides of the physical parameters for these hours; the physical parameter values for these hours would be the daily default values. In either case, **you must submit a complete set of override values for an hour**. In other words, when you submit an override of the physical parameters for an hour, you must submit override values for all four parameters: Reg Low, Reg High, ARR and Unavail, even if it means entering the daily default value. Similarly, when you submit an override of the financial parameters for an hour, you must submit override values for all three parameters: Reg Cap ITO Cost, Reg Cap Offer Oth and Reg Serv Price, even if it means entering the daily default value. This rule also applies to entries in the top row of the grid

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[20] Effectively, it is the minimum of the Reg High and Reg Ceil limits and the maximum of the Reg Low and Reg Floor limits for the hour.

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that you want to copy to a range of hours. Note however that when entering values in the top row, if you leave either set of values blank, the blank fields will be copied to the range of hours selected, meaning that any previously entered hourly overrides of these values in the range are being deleted and returning the values in these hours to their daily default values. ***You cannot use the top row to selectively update the overrides in one column for a range of hours while retaining the override values in the other columns***.

5.4.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- The hourly ARR (Automatic Response Rate) cannot be less than a minimum allowable response rate that is set by ISO New England.

- A warning will be issued if the hourly ARR exceeds the Active ARR Cap, when one is defined. The Active ARR Cap is shown in the Daily Default Values frame.

- On an hourly basis, RLL Floor ≤ Reg Low < Reg High ≤ RHL Ceil

- The RLL Floor and the RHL Ceil are shown in the Daily Values frame. Note that for ATRRs, the regulation limits can be negative. For generating units, the regulation limits must be strictly positive.

- Total regulation capacity offer price (Reg Cap ITO Cost + Reg Cap Offer Other) for an hour cannot exceed $100.00 and must be greater than the Regulation Floor Price determined by the ISO New England.

- Regulation service offer price (Reg Serv Price) for an hour cannot exceed $10.00 and must be greater than the Regulation Floor Price determined by the ISO New England

5.4.2 Override Regulation Offer Parameters for Day and Hour

To override a resource's default daily regulation limits, availability to provide regulation and financial regulation offers:

1. In the Regulation Navigation sub tabs, click the **Regulation Hourly Updates** tab.

   - The Regulation Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **Resource** filter. Note: only regulation resources listed in the selected portfolio will be listed in the drop-down list.

      - The display reflects the regulation daily default offers and the hourly overrides for the selected unit.

3. To update the overrides of physical parameters for individual hours:

a. Enter the override value for each of the limits, for the ARR and for the resource availability in the hours that you wish; you must enter a value for each parameter. If you want to remove an override of the physical parameters, you enter a blank for each limit and the ARR and set the Unavail flag to "No Override".

b. Click the **Update** button to save the data

4. To update the overrides of financial parameters for individual hours:

a. Enter the override value for each of financial offers in the hours that you wish; you must enter a value for each of the three parameters. If you want to remove an override, you must enter blanks for each parameter.

b. Click the **Update** button to save the data

5. To update the overrides for a range of hours:

a. Enter the override value for each of the limits, for the ARR and for the resource availability in the top row. Enter the override value for each of the financial regulation offer parameters in the top row. Remember: if you leave blank the fields of either set of parameters, it means that you want to remove the overrides of that set of parameters.

b. Select the range of hours to override on the top row. Then select the "Copy" button. This will copy all of the values on the top row (including blanks) to the hourly rows for the range of hours selected.
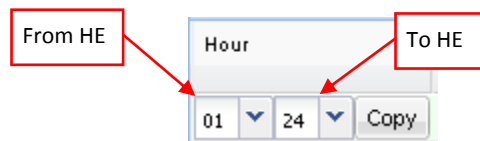
c. Click the **Update** button to save the data for the selected hours.

5.5 XML Download for Regulation Display

The XML Download display is accessible through the Regulation Navigation sub tab. This display enables you to download pre-defined Regulation specific XML report files of data that you maintain in the ISO-NE Market System. It also provides you the means to upload data in XML formatted data files into the ISO-NE Market System to be used to clear the Day-Ahead and Real Time markets. The format of the XML files can be found in the eMarket Data Exchange Specification posted on the ISO-NE web site under *__Support -> Data Retrieval -> Upload/Download File Formats__*.

The following XML reports of generation data are available for downloading:

- Regulation Offers
- Regulation Hourly Updates

Each returns an XML formatted report for the selected date and for all the unique regulation resources listed in all of the user's portfolios.

See §3.2 for details on uploading and downloading files. The following sections provide samples of the downloaded reports.

5.5.1 Regulation Offers XML Report

This report contains the information that you entered and is on the Regulation Offers Default display for all unique resources listed in all of your portfolios. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetRegOfferResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
C:\Documents and Settings\mpinsonneault\Local Settings\Temp\unit   <RegOffer day="2014-12-15"
ID="11">
    <ARR>4.5</ARR>
    <ARRCap>21</ARRCap>
    <Available>true</Available>
    <Capability>4.2</Capability>
    <DerateComment>Reduced Derate factor</DerateComment>
    <DerateFactor>1</DerateFactor>
    <DispatchMethod>CONT</DispatchMethod>
    <ExcludedComment>Exclusion comment</ExcludedComment>
    <Excluded>false</Excluded>
```

```xml
    <RegHighLimit>19.4</RegHighLimit>
    <RegLowLimit>10.4</RegLowLimit>
    <RegCapOther>15.45</RegCapOther>
    <RegITOCap>10.45</RegITOCap>
    <RegServicePrice>9.45</RegServicePrice>
    <RHLCeil>21</RHLCeil>
    <RLLFloor>11</RLLFloor>
    <ServiceComment>Reduced Service factor</ServiceComment>
    <ServiceFactor>10</ServiceFactor>
  </RegOffer>
  <RegOffer day="2014-12-15" ID="5">
    <ARR>45.5</ARR>
    <ARRCap>10</ARRCap>
    <Available>true</Available>
    <Capability>2.2</Capability>
    <DerateComment>Initial default derate factor</DerateComment>
    <DerateFactor>1</DerateFactor>
    <DispatchMethod>ENC</DispatchMethod>
    <ExcludedComment xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true" />
    <Excluded>false</Excluded>
    <RegHighLimit>1.5</RegHighLimit>
    <RegLowLimit>-3</RegLowLimit>
    <RegCapOther>11.15</RegCapOther>
    <RegITOCap>7.15</RegITOCap>
    <RegServicePrice>3.1</RegServicePrice>
    <RHLCeil>15</RHLCeil>
    <RLLFloor>-5</RLLFloor>
    <ServiceComment>Initial default service factor</ServiceComment>
    <ServiceFactor>10</ServiceFactor>
  </RegOffer>
</GetRegOfferResponse>
```

5.5.2 Regulation Hourly Updates XML Report

This report contains the information that you entered and is on the Regulation Hourly Updates display for all unique resources listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetRegHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <RegHourly day="2014-12-15" ID="444">
    <HourlyProfile>
      <HourlyValues time="2014-12-15T00:00:00-04:00">
        <ARR>21.5</ARR>
        <Available>true</Available>
        <Capability>37.5</Capability>
        <RegHighLimit>680</RegHighLimit>
        <RegLowLimit>400</RegLowLimit>
        <RegCapOther>70</RegCapOther>
        <RegITOCap>70</RegITOCap>
        <RegServPrice>70</RegServPrice>
      </HourlyValues>
      <HourlyValues time="2014-12-15T01:00:00-04:00">
        <ARR>21.5</ARR>
        <Available>true</Available>
        <Capability>37.5</Capability>
        <RegHighLimit>680</RegHighLimit>
        <RegLowLimit>400</RegLowLimit>
        <RegCapOther>70</RegCapOther>
```

```xml
            <RegITOCap>70</RegITOCap>
            <RegServPrice>70</RegServPrice>
        </HourlyValues>
        <HourlyValues time="2014-12-15T02:00:00-04:00">
            <Available>true</Available>
            <Capability>37.5</Capability>
            <RegHighLimit>680</RegHighLimit>
            <RegLowLimit>400</RegLowLimit>
            <RegCapOther>70</RegCapOther>
            <RegITOCap>70</RegITOCap>
            <RegServPrice>70</RegServPrice>
        </HourlyValues>
        .
        .
        <HourlyValues time="2014-12-15T23:00:00-04:00">
            <Available>true</Available>
            <Capability>37.5</Capability>
            <RegHighLimit>680</RegHighLimit>
            <RegLowLimit>400</RegLowLimit>
            <RegCapOther>70</RegCapOther>
            <RegITOCap>70</RegITOCap>
            <RegServPrice>70</RegServPrice>
        </HourlyValues>
    </HourlyProfile>
    <ShortName>UNIT</ShortName>
  </RegHourly>
</GetRegHourlyResponse>
```

6. Demand Tab

To access the Demand Tab, you must be a registered user with a Demand Read/Write or Read-Only role. When you have this access, the Demand tab will be shown and selecting it will show all of its display sub tabs as shown below.

6.1 Demand Portfolio Manager Display

A demand portfolio is a collection of price locations (Pnodes) that are identified by each user. The user assigns a unique name to each portfolio when it is created. There is no limit to the number of demand portfolios a user can create. Once a portfolio is created the user assigns one or more price location. There is no limit to the number of price locations that can be "assigned" to a portfolio. A price location can be assigned to more than one portfolio.

Data is filtered by the demand portfolio on the following displays:

- Demand Bids
- Inc/Dec Bids
- Demand by Portfolio

Note: A Pnode that is not associated with a portfolio cannot be selected in these displays' tooltray filters.

See §3.1 Manage Portfolios for more information on the purpose of portfolios and details on using this display.

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6.2 Demand Bids Display

This display is used to view and update fixed and price-sensitive demand bids. Demand bids are daily bids for energy to satisfy demand at Day-Ahead market prices for a given date. They specify a MW amount of energy to buy and the price per MWH the user is offering to pay for the energy. Demand bids can only be submitted at load zones (pricing location). A user can submit fixed demand bids and price-sensitive demand bids:

- A fixed demand bid does not have a price associated with it because the user is offering to unconditionally buy an amount of energy at a specified location irrespective of the Day-Ahead clearing price to satisfy his demand.

- A price-sensitive demand bid as its name implies has a price associated with it. The user is offering to buy an amount of energy at a specified location provided that the Day-Ahead clearing price at that location is below a user specified amount. The user can submit up to ten price-sensitive demand bids per hour for each pricing location.

The format of the display used to submit demand bids is shown below:

The fields on this display are:

- **Hour** – Hour ending values are shown in the first column for each hour of the day. The row for hour ending 03 is not shown for the Spring Daylight Saving

Time transition day. Similarly, the value on the row of the repeating hour ending 02 of the Fall Daylight Saving Time transition day is marked with an asterisk (*).

- **F** – Labels that identify the fields used to enter fixed demand bids.
- **#** – This is the number of a price-sensitive demand bid for the hour.
- **MW** – The MW amount of a fixed or price-sensitive demand bid.
- **Price** – The price offered for a price-sensitive demand bid.
- **Total** – The cumulative MW value of all demand bids for the hour.

The format of the display is slightly different for Participants who have registered subaccounts in the ISO-NE Customer and Asset Management System (CAMS). As shown below, there is an additional selection drop-down box labeled "SubAccount" in the **Filters** pane that is blank when the display is first called up. The user must select one of the subaccounts appearing on the drop-down list before the display data entry fields are shown. Only subaccounts active on the selected market day and inactive subaccounts for which there are demand bids on the selected market day will be listed. Inactive subaccounts will appear with an asterisk (*) appended to their name. See §1.8 for more information on subaccounts.

An additional column of information is shown on the display:

- **Participant Total** – The cumulative MW value of all demand bids submitted by the Participant users across all subaccounts for the hour.

6.2.1 Data Validation Rules

When you click the **Update** button, eMarket makes the following checks to ensure that the entered data is valid:

- MW values must be greater than zero; i.e. MW > 0.
- The Price of a price-sensitive demand bid must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Offer Floor price; i.e.
  Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[21].
- Demand bids can only be submitted at Load Zone pricing nodes (Pnodes whose name begins with ".Z.").

Price-sensitive demand bids for a given hour can be entered in any order; each is treated independently when clearing the Day-Ahead market. Since each is treated independently, entering multiple duplicate bids for a given hour is equivalent to entering a single bid where the MW value is the sum of the MW

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[21] Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.

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values of the duplicate bids; for example, three bids for hour-ending 02 of 2 MW @ $10.00 is equivalent to one bid of 6 MW @ $10.00.

6.2.2 View Demand Bids

1. In the Demand Navigation sub tabs, click the **Demand Bids** tab.

   - The Demand Bids display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired load zone price location from the **Nodes** filter.
   d. Select the desired subaccount from the **SubAccount** filter if it is shown.

      ▪ The data for the selected price location is shown.

6.2.3 Submit Fixed Demand Bids

1. View the demand bids for the location and date of interest (§6.2.2)
2. To submit various fixed demand bids for individual hours:

   a. Click in the **MW** cell to the right of an **"F"** in the desired hour.
   b. Enter the MW amount of the bid.
   c. Repeat 2a-b for all hours as needed.
   d. Click the Update button to save the data.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

3. To submit the same demand bid for a range of hours:

   a. Enter the **MW** amount of the bid in the first MW column on the first row.
   b. Select the range of hours in the top row. Then select the "Copy" button. This will copy all of the values on the top row (including blanks) to the hourly rows for the range of hours selected.
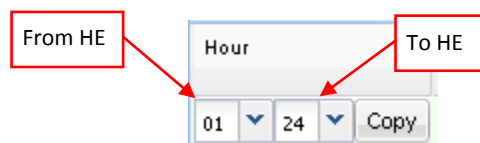
   c. Click the **Update** button to save the data for the selected hours.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

Note: You cannot submit fixed and price-sensitive demand bids independently using the first row of the grid. That is to say, if you enter only a fixed demand bid leaving the price-sensitive demand bid cells empty, you are requesting eMarket to delete all the price-sensitive demand bids in the range of hours that you selected.

6.2.4 Submit Price-Sensitive Demand Bids

1. View the demand bids for the location and date of interest (§6.2.2)
2. To submit various price-sensitive demand bids for individual hours

   a. Enter the **MW** amount and the **Price** of the bids in the cells provided for the hour of the day desired, up to ten per hour.
   b. Repeat 2a for all hours as needed.
   c. Click the Update button to save the data.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

3. To submit the same demand bids for a range of hours:

   a. Enter the **MW** amount and the **Price** of the bids in the cells provided on the first row.
   b. Select the range of hours in the top row. Then select the "Copy" button. This will copy all of the values on the top row (including blanks) to the hourly rows for the range of hours selected.
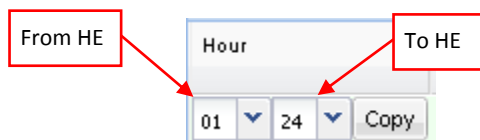
   c. Click the **Update** button to save the data for the selected hours.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

Note: You cannot submit fixed and price-sensitive demand bids independently using the first row of the grid. That is to say, if you enter only price-sensitive demand bids leaving the fixed demand bid cell empty, you are requesting eMarket to delete the fixed demand bids in the range of hours that you selected.

6.2.5 Deleting Ranges of Demand Bids

If you want to delete the fixed and price-sensitive demand bids at a location for a range of hours of a given date, you can use the top row of the grid to do this.

1. Leave the fixed and price-sensitive demand bid cells of the first row empty.
2. Select the range of hours in the top row. Then select the "Copy" button. This will copy the blanks on the top row to the hourly rows for the range of hours selected.
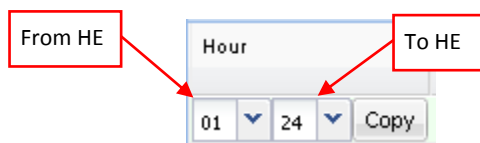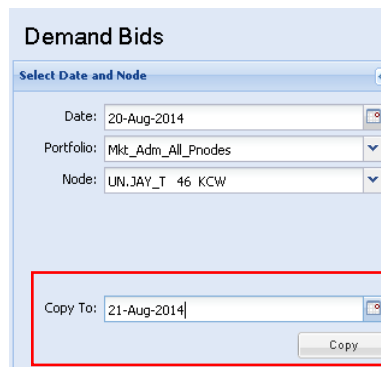
3. Click the **Update** button. All of the existing bids shown on the display will be deleted.

Note: If you select an *inactive* subaccount, you can **ONLY** delete demand bids; you cannot modify the demand bids that exist on the selected day, nor can you submit new demand bids. The inactive subaccount will appear on the drop-down select list **only** if there are demand bids for the subaccount on the selected market day; if there are no demand bids for the subaccount, it won't even be listed and hence not be available for the submission of demand bids.

6.2.6 Duplicating one Day's Demand Bids

If you are interested in initializing your demand bids at a location with the bids that you submitted on another day, you can use the tool provided in the tooltray.

1. View the demand bids for the location and date that you want to copy to another date (§6.2.2)
2. In the "**Copy To**" field select the date on the drop-down calendar to which you want to copy your demand bids.
3. Select the **Copy** button in the tooltray to copy all of your demand bids, fixed and price-sensitive, for the selected subaccount when applicable. When the operation completes, you will notice that the "**Date**:" filter field is set to the date that you entered/selected.

Note: The request to copy your bid data will be rejected when the selected subaccount is terminated on the selected "**Copy To**" date.
Note: You cannot use the **Copy** functionality to duplicate bids from one subaccount to another subaccount; rather, it can only be used to duplicate bids from one market day to another for a selected subaccount.

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6.3 Increment Offers and Decrement Bids (Inc/Dec) Display

This display is used to view and enter incremental offers or decrement bids, also known as *virtual bids*, at a pricing location for each hour of a market day, Virtual bids can be made at all price node location (Pnode) for which ISO calculates an LMP. Virtual bids are supported in the Day-Ahead market only. Increment offers and decrement bids are used to indicate the prices at which you are willing to increase an injection (increment offer) or a withdrawal (decrement bids). An increment offer or decrement bid can be used to:

- Cover one side of a bilateral transaction
- Protect a day-ahead generation offer
- Cover congestion

The format of the display used to submit virtual bids is shown below:

This display is divided into two identical sections – the upper is for decrement bids and the lower is for increment offers. Each has the same usage and fields:

- **Hour** – Hour ending values are shown in the first column for each hour of the day. The row for hour ending 03 is not shown for the Spring Daylight Saving Time transition day. Similarly, the value on the row of the repeating hour ending 02 of the Fall Daylight Saving Time transition day is marked with an asterisk (*).
- **#** – This is the number of a price-sensitive demand bid for the hour.
- **MW** – The MW amount of the virtual bid.

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- **Price**– The price of the virtual bid. For an incremental offer, this is the price above which you are offering to pick up an obligation to sell energy; i.e. if the price at the Pnode you selected is equal to or greater than this offer price value, you are offering to sell the number of MW specified in your offer. Conversely for a decrement bid, this is the price below which you are willing to buy energy; i.e. if the price at the Pnode you selected is less than or equal to this bid price value, you are offering to buy the number of MW specified in your bid.
- **Total** – The MW total of the bids for the hour.

Without exploding the rows, up to five virtual bids per hour can be entered on the display. However, each row can be exploded to provide the ability to enter up to fifty virtual bids per hour as shown below. You do this by clicking on the "+" icon at the beginning of the row; to collapse the row again, you click on the "-" icon at the beginning of the row.

Note: when the market is CLOSED, you will be *able to explode a row only if there are additional bids for the hour* that are not shown and the row will be exploded only enough to show those additional bids. Hence if you have five or less bids for an hour, you won't be able to explode the row to see more empty cells.

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The format of the display is slightly different for Participants who have registered subaccounts in the ISO-NE Customer and Asset Management System (CAMS). As shown below, there is an additional selection drop-down box labeled "SubAccount" in the **Filters** pane that is blank when the display is first called up. The user must select one of the subaccounts appearing on the drop-down list before the display data entry fields are shown. Only subaccounts active on the selected market day and inactive subaccounts for which there are demand bids on the selected market day will be listed. Inactive subaccounts will appear with an asterisk (*) appended to their name. See §1.8 for more information on subaccounts.

An additional column of information is shown on the display:

- **Participant Total** – The cumulative MW value of all virtual bids submitted by the Participant users across all subaccounts for the hour.

6.3.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- MW values must be greater than zero; i.e. MW > 0.
- The Price of a bid must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Floor price; i.e. Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[22].

Increment offers and decrement bids for a given hour can be entered in any order; each is treated independently when clearing the Day-Ahead market. Since each is treated independently, entering multiple duplicate offer/bids for a given hour is equivalent to entering a single bid where the MW value is the sum of the MW values of the duplicate offer/bids; for example, three decrements bids for hour-ending 05 of 2 MW @ $10.00 is equivalent to one bid of 6 MW @ $10.00.

6.3.2 Submit/Modify Virtual Bids (Decrement Bids / Increment Offers)

Increment offers look like spot market sales or generation offers.
Decrement bids look like spot market purchases or price-sensitive demand bids.

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22 Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.

The method to enter/modify them using the Inc/Dec Bids display is the same; the only difference is that they are entered separately, decrement bids in the top portion of the display, increment offers in the low portion.

1. In the Demand Navigation sub tabs, click the **Inc/Dec Bids** tab.

   • The Inc/Dec Bids display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired price location from the **Node** filter.
   d. Select the desired subaccount from the **SubAccount** filter if it is shown.

      ▪ The data for the selected price location displays.

3. To submit virtual bids for individual hours

   a. Enter the **MW** amount and the **Price** of the bids in the cells provided for the hour of the day desired. Explode the row for the hour to give you access to the 45 additional pairs of cells to enter bids. To delete a bid, you need to clear the MW and Price values of the bid in the cells.
   b. Repeat 3a for all hours as needed.
   c. Click the **Update** button to save the data. Remember that you have to submit Increments and Decrements separately and independently.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

4. To submit the same virtual bid for a range of hours:

   a. Enter the **MW** amount and the **Price** of the bids in the cells provided on the top row. Explode the row to give you access to the 45 additional pairs of cells to enter bids.
   b. Select the range of hours in the top row. Then select the "Copy" button. This will copy all of the values on the top row (including blanks) to the hourly rows for the range of hours selected.
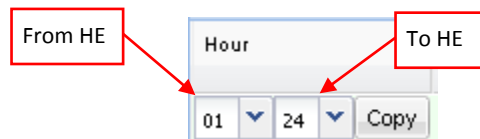
   c. Click the **Update** button to save the data for the selected hours.

      ▪ The totals column of each affected hour is updated to reflect the MW total of the bids; the Participant totals column if it is shown is also updated.

6.3.3 Deleting Ranges of Virtual Bids

If you want to delete the incremental offers or decrements bids at a location for a range of hours of a given date, you can use the top row of the grids to do this.

1. Leave all the data entry cells of the top row empty.
2. Select the range of hours in the top row. Then select the "Copy" button. This will copy the blanks on the top row to the hourly rows for the range of hours selected.
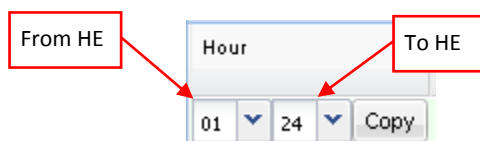
3. Click the **Update** button. All of the existing offer/bids shown on the display will be deleted.

Note: If you select an *inactive* subaccount, you can **ONLY** delete virtual bids; you cannot modify the bids that exist on the selected day, nor can you submit new bids. The inactive subaccount will appear on the drop-down select list **only** if there are virtual bids for the subaccount on the selected market day; if there are no bids for the subaccount, it won't even be listed and hence not be available for the submission of virtual bids.

6.3.4 Duplicating one Day's Virtual Bids

If you are interested in initializing your virtual bids at a location with the bids that you submitted on another day, you can use the tool provided in the tooltray.
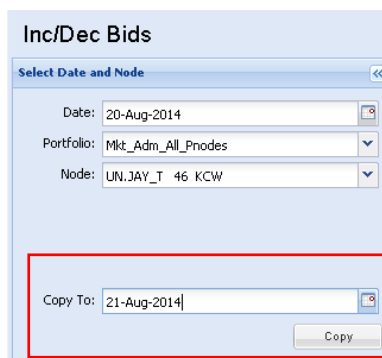
1. View the virtual bids for the location and date that you want to copy to another date (§6.2.2)
2. In the "**Copy To**" filed select the date on the drop-down calendar to which you want to copy your virtual bids.
3. Select the **Copy** button in the tooltray to copy all of your virtual bids, for the selected subaccount when applicable. When the operation completes, you will notice that the "**Date**:" filter field is set to the date that you entered/selected.

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Note: The request to copy your bid data will be rejected when the selected subaccount is terminated on the selected "**Copy To**" date.
Note: You cannot use the **Copy** functionality to duplicate bids from one subaccount to another subaccount; rather, it can only be used to duplicate bids from one market day to another for a selected subaccount.

Load Response (PRD) Offer Display

This display is used to view and update Price Response Demand (PRD) offers. These offers are used to indicate the Day-Ahead price at which you are willing to interrupt a specified amount of load in Real-Time, if cleared.

A PRD offer can be submitted for a single day or a range of days, as specified by the Start Day and Stop Day. The maximum duration of a PRD offer is the end of the next month if the threshold price for the next month has been published; otherwise it is the end of the current month. In other words, a PRD offer for the next month can only be posted if the threshold price for the next month has been published, which is normally done by the middle of the month.

The format of this display is shown below:

The fields on this display are:

- **Start Day** – the first day that the offer is effective. The earliest day that a PRD offer can be effective is the day following the current day
- **Stop Day**– the last day (inclusive) that the offer is effective.
- **MW** – the amount of load interruption offered. A single MW interruption amount applies to all program hours per day.
- **Price** – the price per MWH at which the amount of load interruption is offered. A single offer price applies to all program hours per day.
- **Curtailment Initiation Price** – the price per interruption at which the amount of interruption is offered. The Curtailment Initiation Price is paid each time a load curtailment is scheduled.
- **Offer Cost** – The offer cost is computed as follows:
  offer cost = offer price + [curtailment initiation price /
  (minimum interruption duration x bid MW amount)]
- **Minimum Interruption Duration** – the minimum amount of time that the resource must be scheduled to interrupt, if cleared.
- **Maximum Interruptible Capacity (MIC)** – an estimate of the maximum hourly demand reduction amount that a PRD resource can deliver.

- **Demand Reduction Threshold Price (DRTP)** – the minimum offer price calculated pursuant to Market Rule 1, Appendix E. This value is calculated every month. The value shown in the column is the DRTP applicable to the month selected in the filter tooltray.

6.3.5 Data Validation Rules

When you click the **Update** button, eMarket makes the following checks to ensure that the entered data is valid:

- **Start Day** must be in the future, i.e. after the current day

- **Stop Day** must be later than or equal to the Start Day, i.e. ≥ Start Day

- **Stop Day** is subject to the limit of horizon months. The Stop Day date must fall in a month where the **Demand Response Threshold Price (DRTP)** is defined; in other words, Stop Day date ≤ date of the last day of a month where the DRTP is defined. Since the DRTP of a month will be defined and published around the 15th of the previous month, PRD offers for the next month can be submitted only after the DRTP is published.

- The **MW** interruption amount must be greater than or equal to 0.1 MW and less than the minimum of the **Maximum Interruptible Capacity (MIC)** values of the PRD resource for the dates spanned by the PRD offer at the time the offer is submitted. Note that the monthly MIC of a resource can change at any time, even after an offer has been submitted and accepted. The market clearing software will use the lesser of the MIC effective for the market day and the MW amount of the offer.

- **Offer price** ≤ the maximum defined in Market Rule 1, Appendix E (e.g. $1,000/MWH). Also, it must be greater than the maximum of the monthly **Demand Response Threshold Price (DRTP)** for the months spanned by the PRD offer. The DRTP is calculated on a monthly basis as defined in Market Rule 1, Appendix E and posted to the ISO New England website by the 15th day of the preceding month in advance of the Demand Reduction Threshold Price's effective date. The DRTP applies to only the next month and does not change the DRTP for the current month.

- **Offer Cost** calculated value cannot exceed the maximum defined in Market Rule 1, Appendix E (e.g. $1,000/MWH).

- **Curtailment Initiation Price** must be less than the maximum defined in Market Rule 1, Appendix E (e.g. $1,000/MWH).

- **Minimum Interruption Duration** must be greater than or equal to 1 hour and less than or equal to 4 hours, and must be in whole hourly increments.

6.3.6 View a Load Response (PRD) Offer

1. In the Demand Navigation sub tabs, click the **Load Response Offers** tab.

   - The Load Response Offers display is shown in the display pane.

2. In the **Filters pane**:

    a. Select the desired month from the **Date** filter.
    b. Select the desired resource from the **Load Response** filter.

       ▪ If any offers exist for the selected resource for the selected month, the offer(s) will be shown in the display and available for update.

6.3.7 Create a new Load Response (PRD) offer

1. View the offers for the Load Response resource (§6.3.6)
2. Click the **New** button; you can click more than once if you want to create multiple new offers.
3. Enter the following information in the data entry cells provided:

    a. Start Day
    b. Stop Day
    c. MW
    d. Price
    e. Curtailment Initiation Price (optional – it defaults to $0.00)
    f. Minimum Interruption Duration

4. Click the **Update** button to save the data.
5. Repeat steps 2 & 3 above to create additional offers.

6.3.8 Modify an existing Load Response (PRD) offer

1. View the offers for the Load Response resource (§6.3.6)
2. Modify the data in the data entry cells for the offers shown as needed.
3. Click the **Update** button to save the data.

6.3.9 Delete a Load Response (PRD) Offer

1. View the offers for the Load Response resource (§6.3.6)
2. Click a cell in the row that you want to delete and hit Enter. The cell will be highlighted in pink.
3. Click the **Delete** button.

6.3.10 Delete a Range of Load Response (PRD) Offers

1. View the offers for the Load Response resource (§6.3.6)
2. Click a cell in each of the rows that you want to delete and hit Enter. Each cell will be highlighted in pink.
3. Click the **Delete** button. Each row with a cell highlighted is deleted.

6.4 Demand by Portfolio Display

You can view the net amount of your demand and virtual bids that cleared in the Day-Ahead Market at each of the Pnodes listed in your selected portfolio using the **Demand by Portfolio** display that is accessible on one of the Demand sub tabs. The information shown includes the name of the Pnode, the net MW amount of demand/virtual bids that cleared and the nodal price for each hour of the day. The 24-hour period is shown on two lines: the top line details the hours ending 01 through 12; the second line details hours ending 13 through 24. The last row of the display is labeled **Total Portfolio MW** and shows the total net MW amount of your bids for each hour that cleared in the Day-Ahead market for all the Pnodes listed. Information on the display is shown only after the Day-Ahead market has been cleared and the time for the opening of the Re-Offer Period of the selected day has passed.

The format of this display is shown below:

The fields on this display are:

- **Node** – the Pnode name of the price location.
- **MW @ Price** – the net MW amount that cleared in the market and the LMP at which the bids cleared. Be aware that in the calculation of the net MW amount, the MW amount of increment offers that cleared are treated as negative quantities.

The format of the display is slightly different for Participants who register subaccounts in the ISO-NE Customer and Asset Management System (CAMS). As shown below, there is an additional selection drop-down box labeled "SubAccount" in the **Filters** pane that is blank when the display is first called up. The user must select one of the subaccounts appearing on the drop-down list before data is shown on the display. Only subaccounts active on the selected market day or inactive subaccounts for which there are demand bids on the selected market day will be listed. Inactive subaccounts will appear with an asterisk (*) appended to their name. See §1.8 for more information on subaccounts.

When a subaccount is selected, the net amount of the demand and virtual bids that were submitted in the selected subaccount and that cleared in the Day-Ahead Market at each of the Pnodes listed in the selected portfolio is shown on the display, along with a total for the portfolio.

6.4.1 View DA Cleared Bids at Pnodes in Portfolio

1. In the Demand Navigation sub tabs, click the **Demand by Portfolio** tab.

    - The Demand by Portfolio display is shown in the display pane.

2. In the **Filters pane**:

    a. Select the desired date from the **Date** filter.
    b. Select the desired portfolio from the **Portfolio** filter.
    c. Select the desired subaccount from the **SubAccount** filter if it is shown.

        ▪ Results are displayed for all Pnodes in the selected portfolio and for the selected date and when applicable, for the selected subaccount.

6.5 Load Response (PRD) Result Display

You can view the results of the Price Response Demand clearing which includes the cleared results for each hour for each of your PRD resources that were offered into the Day-Ahead Market for the specified date. This data is available after the Day-Ahead market clears.

The format of this display is shown below:

The following fields are on this display:

- **MW** – The MW amount of PRD cleared at the location.
- **Price** – The Day-Ahead Market LMP at the location.

6.5.1 View Day-Ahead Load Response (PRD) Cleared Offers

1. In the Demand Navigation sub tabs, click **Load Response Result**.

   - The Load Response Result display is shown in the display pane.

2. Select the desired date from the **Date** filter located in the **Filters pane**.
3. Review the information on the display.

6.6 XML Download for Demand Display

The XML Download display is accessible through the Demand Navigation sub tab. This display enables you to download pre-defined Demand specific XML report files of data that you maintain in the ISO-NE Market System, including results from the cleared Day-Ahead market. It also provides you the means to upload data in XML formatted data files into the ISO-NE Market System to be used to clear the Day-Ahead and Real Time markets. The format of the XML files can be found in the eMarket Data Exchange Specification posted on the ISO-NE web site under ***Support -> Data Retrieval -> Upload/Download File Formats***.

The format of the display is slightly different for Participants who register subaccounts in the ISO-NE Customer and Asset Management System (CAMS). As shown below, there is an additional selection drop-down box labeled "SubAccount" in the **Filters** pane that is blank when the display is first called up. The user can select one of the subaccounts appearing on the drop-down list before requesting a download of the reports. If a subaccount is not selected, the requested demand report will contain information for all of the Participant's subaccounts. Only subaccounts active on the selected market day and inactive subaccounts for which there are demand bids on the selected market day will be listed. Inactive subaccounts will appear with an asterisk (*) appended to their name. See §1.8 for more information on subaccounts.

The following XML reports of demand data are available for downloading:

- Bids (Demand, Increment, Decrement)
- Demand by Participant
- Detailed Demand by Participant
- Load Response Results
- Load Response Offers

Each returns an XML formatted report for the selected date and for all the Pnodes and Load Response resources listed in all of the user's portfolios and when applicable, for each of the user's subaccounts unless a specific one is selected.

See §3.2 for details on uploading and downloading files. The following sections provide samples of the downloaded reports.

6.6.1 Bids XML Report

This report contains the information that you entered and is shown on the Demand Bids and Inc/Dec Bids displays for all Pnodes listed in all of your portfolios, and when applicable, for each of your subaccounts or for the subaccount that you selected. The following is a sample of the report. If you are using subaccounts, each set of *DemandBid* information appears within *DemandBidBySubAccount* tags that identify the name of the subaccount as follows:

```
- <DemandBidBySubAccount subAccount ="SubaccountName">
    - <DemandBid bidType="…" day="…" ID="…">
        .
        .
    </DemandBid>
 </DemandBidBySubAccount>
```

Sample Report:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetDemandBidResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <DemandBid bidType="Decrement" day="2014-08-24" ID="4000">
        <NodeName>.H.INTERNAL_HUB</NodeName>
      - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
            <PricePoint price="222" MW="99" />
            <PricePoint price="17.15" MW="3" />
            <PricePoint price="15.15" MW="5" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
            <PricePoint price="222" MW="99" />
            <PricePoint price="17.15" MW="3" />
            <PricePoint price="15.15" MW="5" />
          </HourlyBid>
            .
            .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
            <PricePoint price="15.15" MW="2" />
            <PricePoint price="11.15" MW="2" />
          </HourlyBid>
        </HourlyProfile>
      </DemandBid>
    - <DemandBid bidType="Increment" day="2014-08-24" ID="4000">
        <NodeName>.H.INTERNAL_HUB</NodeName>
      - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="23.15" MW="2" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="22.15" MW="2" />
          </HourlyBid>
            .
            .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="22.15" MW="2" />
```

```
            </HourlyBid>
          </HourlyProfile>
      </DemandBid>
 - <DemandBid bidType="Decrement" day="2014-08-24" ID="4004">
        <NodeName>.Z.CONNECTICUT</NodeName>
      - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
              <PricePoint price="34.02" MW="30" />
              <PricePoint price="17.15" MW="3" />
              <PricePoint price="15.15" MW="5" />
          </HourlyBid>
          .
          .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
              <PricePoint price="34.02" MW="20" />
              <PricePoint price="15.15" MW="2" />
              <PricePoint price="11.15" MW="2" />
          </HourlyBid>
      </HourlyProfile>
      </DemandBid>
 - <DemandBid bidType="Increment" day="2014-08-24" ID="4004">
        <NodeName>.Z.CONNECTICUT</NodeName>
      - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
              <PricePoint price="25.15" MW="3" />
              <PricePoint price="23.15" MW="2" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
              <PricePoint price="25.15" MW="3" />
              <PricePoint price="22.15" MW="2" />
          </HourlyBid>
          .
          .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
              <PricePoint price="25.15" MW="3" />
              <PricePoint price="22.15" MW="2" />
          </HourlyBid>
      </HourlyProfile>
      </DemandBid>
 - <DemandBid bidType="Fixed" day="2014-08-24" ID="4004">
        <NodeName>.Z.CONNECTICUT</NodeName>
      - <HourlyProfile>
              <HourlyBid time="2014-08-24T00:00:00-04:00" fixedMW="100" />
              <HourlyBid time="2014-08-24T01:00:00-04:00" fixedMW="101" />
              <HourlyBid time="2014-08-24T02:00:00-04:00" fixedMW="102" />
            .
            .
              <HourlyBid time="2014-08-24T22:00:00-04:00" fixedMW="122" />
              <HourlyBid time="2014-08-24T23:00:00-04:00" fixedMW="123" />
      </HourlyProfile>
      </DemandBid>
 - <DemandBid bidType="PriceSensitive" day="2014-08-24" ID="4004">
        <NodeName>.Z.CONNECTICUT</NodeName>
      - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
              <PricePoint price="400.13" MW="13.1" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
```

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```xml
            <PricePoint price="400.13" MW="11.9" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T02:00:00-04:00">
            <PricePoint price="400.13" MW="11.4" />
          </HourlyBid>
          .
          .
        - <HourlyBid time="2014-08-24T22:00:00-04:00">
            <PricePoint price="400.13" MW="15.3" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
            <PricePoint price="400.13" MW="14.2" />
          </HourlyBid>
      </HourlyProfile>
  </DemandBid>
- <DemandBid bidType="Decrement" day="2014-08-24" ID="4007">
      <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
            <PricePoint price="222" MW="44" />
            <PricePoint price="17.15" MW="3" />
            <PricePoint price="15.15" MW="5" />
          </HourlyBid>
          .
          .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
            <PricePoint price="222" MW="33" />
            <PricePoint price="15.15" MW="2" />
            <PricePoint price="11.15" MW="2" />
          </HourlyBid>
      </HourlyProfile>
  </DemandBid>
- <DemandBid bidType="Increment" day="2014-08-24" ID="4007">
      <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="23.15" MW="2" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="22.15" MW="2" />
          </HourlyBid>
          .
          .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
            <PricePoint price="25.15" MW="3" />
            <PricePoint price="22.15" MW="2" />
          </HourlyBid>
      </HourlyProfile>
  </DemandBid>
- <DemandBid bidType="PriceSensitive" day="2014-08-24" ID="4007">
      <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
            <PricePoint price="400.13" MW="52.1" />
          </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
```

```xml
        <PricePoint price="400.13" MW="46.7" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T02:00:00-04:00">
        <PricePoint price="400.13" MW="44.8" />
      </HourlyBid>
    .
    .
    - <HourlyBid time="2014-08-24T23:00:00-04:00">
        <PricePoint price="400.13" MW="59.3" />
      </HourlyBid>
   </HourlyProfile>
  </DemandBid>
</GetDemandBidResponse>
```

6.6.2 Demand by Participant XML Report

This report shows the net amount of your demand and virtual bids that cleared in the Day-Ahead Market at each of the distinct Pnodes that are listed in all of your Demand portfolios, and when applicable, for each of your subaccounts or for the subaccount that you selected, and the price at which they cleared. Be aware that in the calculation of the net MW amount cleared the MW amount of Increment offers that cleared are treated as negative quantities. The report contains information only after the time for the opening of the Re-Offer Period of the selected day has passed. The following is a sample of the report. If you are using subaccounts, each set of *DemandByParticipant* information appears within *DemandByParticipantBySubAccount* tags that identify the name of the subaccount as follows:

```
- <DemandByParticipantBySubAccount subAccount ="SubaccountName">
    - <DemandByParticipant day="..." ID="...">
        .
    </DemandByParticipant>
  </DemandByParticipantBySubAccount>
```

Sample Report:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetDemandByParticipantResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <DemandByParticipant day="2014-08-24" ID="4000">
        <NodeName>.H.INTERNAL_HUB</NodeName>
        - <HourlyProfile>
            <HourlyValues time="2014-08-24T00:00:00-04:00" MW="99" price="21.61" />
            <HourlyValues time="2014-08-24T01:00:00-04:00" MW="99" price="19.11" />
            <HourlyValues time="2014-08-24T02:00:00-04:00" MW="99" price="20.15" />
            <HourlyValues time="2014-08-24T03:00:00-04:00" MW="99" price="19.19" />
            <HourlyValues time="2014-08-24T04:00:00-04:00" MW="99" price="19.94" />
            <HourlyValues time="2014-08-24T05:00:00-04:00" MW="99" price="21.12" />
            <HourlyValues time="2014-08-24T06:00:00-04:00" MW="99" price="23.95" />
            <HourlyValues time="2014-08-24T07:00:00-04:00" MW="55" price="25.49" />
            <HourlyValues time="2014-08-24T08:00:00-04:00" MW="99" price="31.7" />
            <HourlyValues time="2014-08-24T09:00:00-04:00" MW="97" price="37.58" />
            <HourlyValues time="2014-08-24T10:00:00-04:00" MW="30" price="35.51" />
            <HourlyValues time="2014-08-24T11:00:00-04:00" MW="-8" price="34.09" />
            <HourlyValues time="2014-08-24T12:00:00-04:00" MW="-9" price="32.93" />
            <HourlyValues time="2014-08-24T13:00:00-04:00" MW="-103" price="26.14" />
            <HourlyValues time="2014-08-24T14:00:00-04:00" MW="-99" price="24.61" />
            <HourlyValues time="2014-08-24T15:00:00-04:00" MW="-99" price="24.11" />
            <HourlyValues time="2014-08-24T16:00:00-04:00" MW="-99" price="24.04" />
            <HourlyValues time="2014-08-24T17:00:00-04:00" MW="-99" price="25.83" />
            <HourlyValues time="2014-08-24T18:00:00-04:00" MW="-99" price="25.84" />
            <HourlyValues time="2014-08-24T19:00:00-04:00" MW="-99" price="31.99" />
            <HourlyValues time="2014-08-24T20:00:00-04:00" MW="99" price="36.85" />
            <HourlyValues time="2014-08-24T21:00:00-04:00" MW="94" price="33.68" />
            <HourlyValues time="2014-08-24T22:00:00-04:00" MW="-2" price="23.53" />
            <HourlyValues time="2014-08-24T23:00:00-04:00" MW="-2" price="23.67" />
        </HourlyProfile>
    </DemandByParticipant>
    - <DemandByParticipant day="2014-08-24" ID="4004">
        <NodeName>.Z.CONNECTICUT</NodeName>
        - <HourlyProfile>
            <HourlyValues time="2014-08-24T00:00:00-04:00" MW="43.1" price="21.86" />
```

```xml
            <HourlyValues time="2014-08-24T01:00:00-04:00" MW="41.9" price="19.29" />
            <HourlyValues time="2014-08-24T02:00:00-04:00" MW="41.4" price="20.34" />
            <HourlyValues time="2014-08-24T03:00:00-04:00" MW="30.8" price="19.37" />
            <HourlyValues time="2014-08-24T04:00:00-04:00" MW="10.7" price="20.09" />
            <HourlyValues time="2014-08-24T05:00:00-04:00" MW="11" price="21.35" />
            <HourlyValues time="2014-08-24T06:00:00-04:00" MW="11.5" price="23.86" />
            <HourlyValues time="2014-08-24T07:00:00-04:00" MW="12.4" price="25.52" />
            <HourlyValues time="2014-08-24T08:00:00-04:00" MW="13.3" price="31.86" />
            <HourlyValues time="2014-08-24T09:00:00-04:00" MW="12.4" price="38.03" />
            <HourlyValues time="2014-08-24T10:00:00-04:00" MW="12.1" price="35.93" />
            <HourlyValues time="2014-08-24T11:00:00-04:00" MW="7.1" price="34.52" />
            <HourlyValues time="2014-08-24T12:00:00-04:00" MW="35.6" price="33.24" />
            <HourlyValues time="2014-08-24T13:00:00-04:00" MW="40.2" price="26.41" />
            <HourlyValues time="2014-08-24T14:00:00-04:00" MW="13.7" price="24.83" />
            <HourlyValues time="2014-08-24T15:00:00-04:00" MW="13.3" price="24.33" />
            <HourlyValues time="2014-08-24T16:00:00-04:00" MW="13.2" price="24.15" />
            <HourlyValues time="2014-08-24T17:00:00-04:00" MW="13.5" price="25.99" />
            <HourlyValues time="2014-08-24T18:00:00-04:00" MW="14.2" price="25.98" />
            <HourlyValues time="2014-08-24T19:00:00-04:00" MW="15.1" price="32.18" />
            <HourlyValues time="2014-08-24T20:00:00-04:00" MW="16" price="37.09" />
            <HourlyValues time="2014-08-24T21:00:00-04:00" MW="61.1" price="33.92" />
            <HourlyValues time="2014-08-24T22:00:00-04:00" MW="33.3" price="23.5" />
            <HourlyValues time="2014-08-24T23:00:00-04:00" MW="32.2" price="23.82" />
        </HourlyProfile>
    </DemandByParticipant>
  - <DemandByParticipant day="2014-08-24" ID="4007">
        <NodeName>.Z.WCMASS</NodeName>
      - <HourlyProfile>
            <HourlyValues time="2014-08-24T00:00:00-04:00" MW="96.1" price="21.75" />
            <HourlyValues time="2014-08-24T01:00:00-04:00" MW="90.7" price="19.23" />
            <HourlyValues time="2014-08-24T02:00:00-04:00" MW="88.8" price="20.3" />
            <HourlyValues time="2014-08-24T03:00:00-04:00" MW="88" price="19.34" />
            <HourlyValues time="2014-08-24T04:00:00-04:00" MW="89.3" price="20.08" />
            <HourlyValues time="2014-08-24T05:00:00-04:00" MW="93.4" price="21.28" />
            <HourlyValues time="2014-08-24T06:00:00-04:00" MW="75" price="24.07" />
            <HourlyValues time="2014-08-24T07:00:00-04:00" MW="83.9" price="25.62" />
            <HourlyValues time="2014-08-24T08:00:00-04:00" MW="93.3" price="31.88" />
            <HourlyValues time="2014-08-24T09:00:00-04:00" MW="96.8" price="37.84" />
            <HourlyValues time="2014-08-24T10:00:00-04:00" MW="98.3" price="35.77" />
            <HourlyValues time="2014-08-24T11:00:00-04:00" MW="36.5" price="34.33" />
            <HourlyValues time="2014-08-24T12:00:00-04:00" MW="35" price="33.14" />
            <HourlyValues time="2014-08-24T13:00:00-04:00" MW="36.7" price="26.33" />
            <HourlyValues time="2014-08-24T14:00:00-04:00" MW="38.6" price="24.78" />
            <HourlyValues time="2014-08-24T15:00:00-04:00" MW="37.1" price="24.28" />
            <HourlyValues time="2014-08-24T16:00:00-04:00" MW="39.4" price="24.18" />
            <HourlyValues time="2014-08-24T17:00:00-04:00" MW="40.7" price="25.99" />
            <HourlyValues time="2014-08-24T18:00:00-04:00" MW="40.3" price="25.99" />
            <HourlyValues time="2014-08-24T19:00:00-04:00" MW="44.1" price="32.17" />
            <HourlyValues time="2014-08-24T20:00:00-04:00" MW="115.4" price="37.03" />
            <HourlyValues time="2014-08-24T21:00:00-04:00" MW="104.4" price="33.84" />
            <HourlyValues time="2014-08-24T22:00:00-04:00" MW="98.3" price="23.64" />
            <HourlyValues time="2014-08-24T23:00:00-04:00" MW="90.3" price="23.78" />
        </HourlyProfile>
    </DemandByParticipant>
</GetDemandByParticipantResponse>
```

6.6.3 Detailed Demand by Participant XML Report

This report lists each of your demand and virtual bids that cleared in the Day-Ahead Market at each of the distinct Pnodes that are listed in all of your Demand portfolios, and when applicable, for each of your subaccounts or for the subaccount that you selected. The report contains information only after the time for the opening of the Re-Offer Period of the selected day has passed.

It essentially is a breakdown of the bids that contributed to the net MW amount shown in the Demand by Participant report. If nothing cleared for a market hour, the Demand by Participant report will show a net MW amount of zero and the Detailed Demand by Participant report will list nothing. Note however that if the Demand by Participant report shows a net MW amount of zero, it does not mean that none of your bids cleared; you may have submitted demand or decrements bids that are countered by increment offers of total equal magnitude resulting in a net MW amount of zero since in the calculation of the net MW amount cleared the MW amount of Increment offers that cleared are treated as negative quantities. Note also that the sum of the MW amounts of the demand and decrement bids and increment offers listed for a given hour may not exactly match the net MW amount shown in the Demand by Participant report; this will happen when one of the bid/offers is marginal, thereby setting the price at the Pnode, which implies that only a portion of the MW amount bid/offered cleared.

The report lists the bids by type exactly as you've submitted them. In other words it does not report the MW amount of the bid that cleared, although it will be the same unless the bid is marginal, nor does it report the price at which the bid cleared but the bid price.

The following is a sample of the report. If you are using subaccounts, each set of *DetailedDemandByParticipant* information appears within *DetailedDemandByParticipantBySubAccount* tags that identify the name of the subaccount as follows:

```
- <DetailedDemandByParticipantBySubAccount subAccount ="SubaccountName">
    - <DetailedDemandByParticipant bidType ="..." day="..." ID="...">
        .
    </DetailedDemandByParticipant>
</DetailedDemandByParticipantBySubAccount>
```

Sample Report:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetDetailedDemandByParticipantResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <DetailedDemandByParticipant bidType="Decrement" day="2014-08-24" ID="4000">
        <NodeName>.H.INTERNAL_HUB</NodeName>
        - <HourlyProfile>
            - <HourlyBid time="2014-08-24T00:00:00-04:00">
                <PricePoint price="222" MW="99" />
            </HourlyBid>
            - <HourlyBid time="2014-08-24T01:00:00-04:00">
                <PricePoint price="222" MW="99" />
            </HourlyBid>
            .
            .
```

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```xml
- <HourlyBid time="2014-08-24T23:00:00-04:00">
      <PricePoint price="222" MW="0" />
  </HourlyBid>
  </HourlyProfile>
</DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="Increment" day="2014-08-24" ID="4000">
    <NodeName>.H.INTERNAL_HUB</NodeName>
  - <HourlyProfile>
    - <HourlyBid time="2014-08-24T21:00:00-04:00">
        <PricePoint price="25.15" MW="2" />
        <PricePoint price="30.15" MW="3" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T22:00:00-04:00">
        <PricePoint price="22.15" MW="2" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T23:00:00-04:00">
        <PricePoint price="22.15" MW="2" />
      </HourlyBid>
    </HourlyProfile>
</DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="Decrement" day="2014-08-24" ID="4004">
    <NodeName>.Z.CONNECTICUT</NodeName>
  - <HourlyProfile>
    - <HourlyBid time="2014-08-24T00:00:00-04:00">
        <PricePoint price="34.02" MW="30" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T01:00:00-04:00">
        <PricePoint price="34.02" MW="30" />
      </HourlyBid>
      .
      .
    - <HourlyBid time="2014-08-24T23:00:00-04:00">
        <PricePoint price="34.02" MW="20" />
      </HourlyBid>
    </HourlyProfile>
</DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="Increment" day="2014-08-24" ID="4004">
    <NodeName>.Z.CONNECTICUT</NodeName>
  - <HourlyProfile>
    - <HourlyBid time="2014-08-24T21:00:00-04:00">
        <PricePoint price="25.15" MW="2" />
        <PricePoint price="30.15" MW="3" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T22:00:00-04:00">
        <PricePoint price="22.15" MW="2" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T23:00:00-04:00">
        <PricePoint price="22.15" MW="2" />
      </HourlyBid>
    </HourlyProfile>
</DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="PriceSensitive" day="2014-08-24" ID="4004">
    <NodeName>.Z.CONNECTICUT</NodeName>
  - <HourlyProfile>
    - <HourlyBid time="2014-08-24T00:00:00-04:00">
        <PricePoint price="400.13" MW="13.1" />
      </HourlyBid>
    - <HourlyBid time="2014-08-24T01:00:00-04:00">
```

```xml
                <PricePoint price="400.13" MW="11.9" />
            </HourlyBid>
        .
        .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
                <PricePoint price="400.13" MW="14.2" />
            </HourlyBid>
        </HourlyProfile>
    </DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="Decrement" day="2014-08-24" ID="4007">
        <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
                <PricePoint price="222" MW="44" />
            </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
                <PricePoint price="222" MW="44" />
            </HourlyBid>
        .
        .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
                <PricePoint price="222" MW="33" />
            </HourlyBid>
        </HourlyProfile>
    </DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="Increment" day="2014-08-24" ID="4007">
        <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T21:00:00-04:00">
                <PricePoint price="25.15" MW="2" />
                <PricePoint price="30.15" MW="3" />
            </HourlyBid>
        - <HourlyBid time="2014-08-24T22:00:00-04:00">
                <PricePoint price="22.15" MW="2" />
            </HourlyBid>
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
                <PricePoint price="22.15" MW="2" />
            </HourlyBid>
        </HourlyProfile>
    </DetailedDemandByParticipant>
- <DetailedDemandByParticipant bidType="PriceSensitive" day="2014-08-24" ID="4007">
        <NodeName>.Z.WCMASS</NodeName>
    - <HourlyProfile>
        - <HourlyBid time="2014-08-24T00:00:00-04:00">
                <PricePoint price="400.13" MW="52.1" />
            </HourlyBid>
        - <HourlyBid time="2014-08-24T01:00:00-04:00">
                <PricePoint price="400.13" MW="46.7" />
            </HourlyBid>
        .
        .
        - <HourlyBid time="2014-08-24T23:00:00-04:00">
                <PricePoint price="400.13" MW="59.3" />
            </HourlyBid>
        </HourlyProfile>
    </DetailedDemandByParticipant>
</GetDetailedDemandByParticipantResponse>
```

6.6.4 Load Response (PRD) Offers XML Report

This report contains the information that you entered and is on the Load Response Offers display for all unique PRD resources listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetLoadResponseOfferResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <LoadResponseOffer name="Pratt & Whitney Middletown">
        <AssetID>31994</AssetID>
        <CurtailmentInitiationPrice>0</CurtailmentInitiationPrice>
        <MinimumInterruptionDuration>1</MinimumInterruptionDuration>
        <OfferMW>0.111</OfferMW>
        <OfferPrice>31</OfferPrice>
        <StartDay>2014-08-12</StartDay>
        <StopDay>2014-08-30</StopDay>
    </LoadResponseOffer>
    - <LoadResponseOffer name="Pratt & Whitney Middletown">
        <AssetID>31994</AssetID>
        <CurtailmentInitiationPrice>70</CurtailmentInitiationPrice>
        <MinimumInterruptionDuration>1</MinimumInterruptionDuration>
        <OfferMW>0.111</OfferMW>
        <OfferPrice>31</OfferPrice>
        <StartDay>2014-09-01</StartDay>
        <StopDay>2014-09-05</StopDay>
    </LoadResponseOffer>
    - <LoadResponseOffer name="Pratt & Whitney Middletown">
        <AssetID>31994</AssetID>
        <CurtailmentInitiationPrice>55</CurtailmentInitiationPrice>
        <MinimumInterruptionDuration>2</MinimumInterruptionDuration>
        <OfferMW>2</OfferMW>
        <OfferPrice>29</OfferPrice>
        <StartDay>2014-09-06</StartDay>
        <StopDay>2014-09-14</StopDay>
    </LoadResponseOffer>
    - <LoadResponseOffer name="Pratt & Whitney Middletown">
        <AssetID>31994</AssetID>
        <CurtailmentInitiationPrice>95</CurtailmentInitiationPrice>
        <MinimumInterruptionDuration>1</MinimumInterruptionDuration>
        <OfferMW>2</OfferMW>
        <OfferPrice>32</OfferPrice>
        <StartDay>2014-09-15</StartDay>
        <StopDay>2014-09-21</StopDay>
    </LoadResponseOffer>
    - <LoadResponseOffer name="Pratt & Whitney Middletown">
        <AssetID>31994</AssetID>
        <CurtailmentInitiationPrice>65</CurtailmentInitiationPrice>
        <MinimumInterruptionDuration>2</MinimumInterruptionDuration>
        <OfferMW>1.1</OfferMW>
        <OfferPrice>29</OfferPrice>
        <StartDay>2014-09-22</StartDay>
        <StopDay>2014-09-31</StopDay>
    </LoadResponseOffer>
</GetLoadResponseOfferResponse>
```

6.6.5 Load Response (PRD) Results XML Report

This report contains the same information that is shown on the Load Response Results display. This report shows the total MW amount of load reduction by resource and the price at which they cleared for each hour of the day. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetLoadResponseResultResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <LoadResponseResult day="2014-08-24" ID="37812">
        <Name>Madison Paper Industries</Name>
      - <HourlyProfile>
            <HourlyValues time="2014-08-24T07:00:00-04:00" LMP="24.98" MW="0" />
            <HourlyValues time="2014-08-24T08:00:00-04:00" LMP="31.34" MW="0" />
            <HourlyValues time="2014-08-24T09:00:00-04:00" LMP="36.43" MW="0" />
            <HourlyValues time="2014-08-24T10:00:00-04:00" LMP="34.26" MW="0" />
            <HourlyValues time="2014-08-24T11:00:00-04:00" LMP="33.05" MW="0" />
            <HourlyValues time="2014-08-24T12:00:00-04:00" LMP="32.05" MW="0" />
            <HourlyValues time="2014-08-24T13:00:00-04:00" LMP="25.61" MW="0" />
            <HourlyValues time="2014-08-24T14:00:00-04:00" LMP="24.05" MW="0" />
            <HourlyValues time="2014-08-24T15:00:00-04:00" LMP="23.57" MW="0" />
            <HourlyValues time="2014-08-24T16:00:00-04:00" LMP="23.52" MW="0" />
            <HourlyValues time="2014-08-24T17:00:00-04:00" LMP="25.3" MW="0" />
        </HourlyProfile>
    </LoadResponseResult>
    - <LoadResponseResult day="2014-08-24" ID="31994">
        <Name>Pratt & Whitney Middletown</Name>
      - <HourlyProfile>
            <HourlyValues time="2014-08-24T07:00:00-04:00" LMP="25.52" MW="0" />
            <HourlyValues time="2014-08-24T08:00:00-04:00" LMP="31.86" MW="0" />
            <HourlyValues time="2014-08-24T09:00:00-04:00" LMP="38.03" MW="0" />
            <HourlyValues time="2014-08-24T10:00:00-04:00" LMP="35.93" MW="0" />
            <HourlyValues time="2014-08-24T11:00:00-04:00" LMP="34.52" MW="0" />
            <HourlyValues time="2014-08-24T12:00:00-04:00" LMP="33.24" MW="0" />
            <HourlyValues time="2014-08-24T13:00:00-04:00" LMP="26.41" MW="0" />
            <HourlyValues time="2014-08-24T14:00:00-04:00" LMP="24.83" MW="0" />
            <HourlyValues time="2014-08-24T15:00:00-04:00" LMP="24.33" MW="0" />
            <HourlyValues time="2014-08-24T16:00:00-04:00" LMP="24.15" MW="0" />
            <HourlyValues time="2014-08-24T17:00:00-04:00" LMP="25.99" MW="0" />
        </HourlyProfile>
    </LoadResponseResult>
</GetLoadResponseResultResponse>
```

7. Asset-Related Demand (ARD) Tab

To access the Generation Tab, you must be a registered user with an ARD Read/Write or Read-Only role. When you have this access, the ARD tab will be shown and selecting it will show all of its display sub tabs as shown below.

7.1 ARD Offer Concepts

An ARD asset is a physical load, either dispatchable or non-dispatchable, that has been discretely modeled within the ISO New England's Energy Management and Settlement systems that settles at a nodal location. Dispatchable ARD assets (aka DARDs) are loads that can be dispatched just like generators to increase or decrease consumption and get nodal pricing as opposed to load zone pricing as is the case for demand in general. Non-dispatchable ARD assets are special loads that satisfy all of the ISO-NE metering and are eligible for nodal pricing; unlike DARDs, they are not dispatchable and as such are simple price takers in the energy market. The following discussions are applicable to dispatchable ARDs.

When submitting data, it is important to understand the hierarchy of the ARD data and the implications of data overrides. Figure 10 below shows the hierarchy of the ARD displays used to submit data and where the same bid data appears in different displays, the data of which display has precedence over (overrides) the others. [**Note**: only the data elements subject to overrides are shown.]

The ARD Default Parameters display is at the root of the hierarchy. The ARD record itself is initially created by ISO New England with default bid data when the asset is instantiated in the Market system. Participants must update some data values, like the asset's default dispatch availability status and single value ramp rate, using the ARD Default Parameters display. For assets capable of providing off-line reserves, the default Claim10 and Claim30 values must be updated on this display.

To participate in the energy market, a Participant must define at least one schedule for the asset using the Schedule Manager display and all of the child data that goes with it. The schedule defines a container for which detail bid data must be submitted.

Managing ARD schedules is accomplished by performing the following general steps:

- Create or modify a schedule using the Schedule Manager display

- Create or modify schedule-specific default data, which include MW operating limits and market participation (day-ahead or real time) using the Schedule Detail Defaults display.

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- Create or modify schedule-bid default data (MW and price) using the
  Schedule Offers Default display.

ARD Default Parameters Display
For: ARD – Daily, effective dated

Default Status - - (Eco, SS, UA)
Daily Claim 10
Daily Claim 30
Daily Ramp Rate (MRR) (single value)

ARD Ramp Rate Default Display
For: ARD – Daily, effective dated

Daily Ramp Rate Curve (MW/Ramp Rate pairs)

Overrides

ARD Hourly Updates Display
For: ARD, Market Day, Hour

Status - - - - - (Eco, SS, UA)
Claim 10
Claim 30
Min Consumption
Max Consumption

Overrides

ARD Ramp Rate Hourly Updates Display
For: ARD, Market Day, Hour

Ramp Rate (MRR) (single value)
Ramp Rate Curves (MW/Ramp Rate pairs)

Overrides

Overrides

Overrides

ARD Schedule Manager Display
For: ARD

All Schedules

ARD Schedule Detail Default Display
For: Market Day, ARD Schedule

Min Consumption
Max Consumption

ARD Schedule Offers Default Display
For Market Day, ARD Schedule

MW / $$
Use Offer Slope Flag

*Data submittals using only this
display will be allowed during
the intraday reoffer period.*

ARD Schedule Offers Hourly Updates Display
For Market Day, ARD Schedule, Hour

MW / $$
Use Offer Slope Flag

Overrides

ARD Schedule Selection Display
For: Market Day

All ARDs in portfolio, All Schedules

Figure 10 – ARD Display Hierarchy and Data Precedence

- Identify the schedule or schedules to be used in the clearing of the Day-
  Ahead and Real Time (Balancing) Markets using the Schedule Selection
  display.

The other displays allow for overriding either schedule based default data or an asset's default dispatch availability data. Bid data in other displays higher in the hierarchy are overridden by the presence of data in these displays:

- The ARD Ramp Rate Default display can be used to define a default ramp rate curve for an asset that overrides the simple slope defined with the ARD Default Parameters display.

- The Minimum Consumption and Maximum Consumption limits on the Hourly Updates display override for specified hours of the day the corresponding limit values defined in the Schedule Detail Defaults display for all schedules.

- The dispatch availability status (Unavailable, Economic, Must Run) on the Hourly Updates display overrides for specified hours of the day the default dispatch availability status (Default Status) defined with the ARD Default Parameters display. For assets capable of providing off-line reserves, the display can be used to override for specific hours of the day the default Claim10 and Claim30 values defined on the ARD Default Parameters display.

- The incremental energy offers (Price/MW pairs) shown on the Schedule Offers Hourly Updates display override for specified hours of the day the default values defined in the Schedule Offers Default display for the corresponding schedule.

7.2 ARD Portfolio Manager Display

An ARD portfolio is a collection of ARD assets that is defined by each individual user. The user assigns a unique name to each portfolio when it is created. Once a portfolio is created, the user assigns it one or more ARD assets. An ARD asset can be assigned to more than one portfolio.

Data is filtered by ARD portfolios on the following displays:

- ARD Default Parameters
- ARD Multiple Ramp Rates Default
- ARD Ramp Rate Hourly Updates
- ARD Schedule Manager
- ARD Schedule Detail Defaults
- ARD Schedule Offers Default
- ARD Schedule Offers Hourly Updates
- ARD Schedule Selection
- ARD Hourly Updates
- ARD by Portfolio

Note: An asset that is not associated with a portfolio cannot be selected in these displays' tooltray filters.

See section 3.1, Manage Portfolios, for details on the purpose of portfolios and details using this display.

7.3 ARD Default Parameters Display

The ARD Default Parameters display allows you to view asset ownership information and to update an asset's default ramp rate, dispatch status and when applicable, its off-line reserve Claim Capability values. ARD bid data is defined on an asset basis, as well as on schedule basis. The ARD Default Parameters Display is for managing an ARD's more static bid data.

ISO New England requires that the Participant submit to the ISO, asset specific information about an ARD. This information is used to create the initial ARD asset record in the market system database and must be submitted in writing to ISO-NE and verified by ISO-NE before the Participant submits bids. (For more information on the data required, see the ***ISO New England Manual for Market Operations, Manual 11***.)

When the asset-specific information is received, ISO creates the necessary records in the market system database. Some of this information is shown on the ARD Default Parameters display, and users cannot modify the information from here.

The format of the ARD Default Parameters display is shown below:

The fields on this display are:

- **Asset Type** – the physical type of the asset (e.g. Pump vs Non-Pump).
- **Asset Number** – the ISO-NE generated unique identifier for the asset. This is the preferred reference number used in doing business with the Customer Service Department.
- **Node** – the name of the pricing node, or bus, at which the ISO calculates day-ahead and real-time LMPs and to which the asset is connected. ISO assigns the pricing node for each ARD based on the asset's telemetry and on the ISO state estimator model.
- **Asset Short Name** – the abbreviated name of the ARD asset

- **Asset Long Name** – the full name or description of the Asset Related Demand. This label is shown on other ARD displays and in the ARD filter of all ARD displays.
- **Lead Participant ID** – the ISO-NE assigned unique identifier of the Market Participant whose users are responsible for submitting the operating information of the ARD using the eMarket application.
- **Lead Participant Name** – the full name of the Market Participant whose users are responsible for submitting the operating information of the ARD asset using the eMarket application.
- **Dispatch Zone** – the electrical dispatch zone in which the ARD reside.
- **Dispatchable** – indication as to whether the asset is a DARD and can respond to ISO New England dispatch signals or simply an ARD nodal price-taker.
- **Default Status (Economic/Unavailable/Must Run)** – the default dispatch availability status of the ARD; applicable only to DARDs.
- **DA Schedule Required** – indicates whether or not the ARD must submit a bid into the Day-Ahead market.
- **Ramp Rate (MW/Min)** – the number of MW per minute with which the asset can respond to dispatch signals when it is on-line. This value is used in the calculation of reserves unless it is overridden by a default ramp rate curve on the Ramp Rate Default display or an override for an hour defined on the Ramp Rate Hourly Updates display.
- **Ramp Rate Cap** – the asset's demonstrated ramp rate capability value that was established during the last audit conducted by ISO New England. The bid value will be capped (constrained) to this value if it is defined. If the demonstrated capability value is undefined, it will be shown as "UD".
- **Claim 10 Capable** – indicates if the ARD asset is registered as capable of producing Ten Minute Non-Spinning Reserve. Only DARDs are Claim 10 eligible.
- **Claim 10 (MW)** – the submitted bid for the number of consumption MW an asset can shed within 10 minutes. Used in the calculation of Ten Minute Non Spinning Reserves.
- **Claim 10 Cap** – the asset's demonstrated Claim 10 Capability value that was established during the last audit conducted by ISO New England. The bid value will be capped (constrained) to this value if it is defined. If the demonstrated capability value is undefined or the asset is not Claim 10 Capable, it will be shown as "UD".
- **Claim 30 Capable** – indicates if the ARD asset is registered as capable of producing Thirty Minute Reserve. Only DARDs are Claim 30 eligible.
- **Claim 30 (MW)** – the submitted bid for the number of consumption MW an asset can shed within 30 minutes. Used in the calculation of Thirty Minute (non-spinning) Reserves.
- **Claim 30 Cap** – the asset's demonstrated Claim 30 Capability value that was established during the last audit conducted by ISO New England. The bid value will be capped (constrained) to this value if it is defined. If the

demonstrated capability value is undefined or the asset is not Claim 30 Capable, it will be shown as "UD".

7.3.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- 0 ≤ Ramp Rate
- A warning will be issued if the Ramp Rate exceeds Ramp Rate Cap when the demonstrated capability is defined (not "UD")
- A warning will be returned if the asset is Claim10 capable and any of the following conditions exist

  - Claim 10 = 0 or NULL
  - Claim 10 > Claim 10 Cap when the demonstrated capability is defined (not "UD") – meaning that the Claim 10 Cap value will be used instead of the offered value

- A warning will be returned if the asset is Claim 30 capable and any of the following conditions exist

  - Claim 30 = 0 or NULL
  - Claim 30 > Claim 30 Cap when the demonstrated capability is defined (not "UD") – meaning that the Claim 30 Cap value will be used instead of the offered value
  - Claim 30 < Claim 10 – meaning that the Claim 10 value will be used instead of the offered Claim 30 value.

7.3.2 View Specific Asset Information:

1. In the ARD Navigation sub tabs, click the **ARD Default Parameters** tab.

   - The ARD Default Parameters display is shown in the display pane.

2. In the **Filters** pane:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired asset from the **ARD** filter.

      - The default data for the selected date and asset is shown in the ARD Default Parameters display.

7.3.3 Modify Asset Default Claim 10/30 and Ramp Rate

An asset's Claim 10/30 values and its default ramp rate are specified at the asset level. To define these values:

1. View the desired unit's information as described in §7.3.2
2. Enter all of the following information:

   a. Claim 10 (MW) if Claim 10 Capable
   b. Claim 30 (MW) if Claim 30 Capable
   c. Ramp Rate (MW/Min)

3. Click the **Update** button to save the data.

7.3.4 Modify Asset Default Status

1. View the desired unit's information as described in §7.3.2
2. Select one of the following radio buttons:

    a. Economic
    b. Unavailable
    c. Must Run

3. Click the **Update** button to save the selection.

7.4 ARD Multiple Ramp Rates Daily Default Display

This display provides for viewing and modifying an asset's default ramp rate curve. A ramp rate defines how quickly an asset can change its consumption in MW per min. Depending on the asset's physical characteristics this rate can vary as a function of the asset's MW consumption. When that is the case, the Participant can use this display to model the asset's ramp rate curve. Ramp rate curves consist of Energy Ramp Rate (MW/Minute) over a range of the asset's MW consumption. Up to 10 MW ranges can be defined. The default ramp rate curve shown on the display is effective for the date selected and for all future days until it is redefined or removed at a future date. Note that the effective date of the data may be a date prior to the date selected. See §1.5 Effective Dates of Data.

Note: The existence of a ramp rate curve on this display overrides the simple slope specified in the Ramp Rate field on the ARD Default Parameters display.

The format of this display is shown below:

The fields on this display are:

- **MW** – the MW consumption level up to which the ramp rate applies.
- **Energy Ramp Rate**– the MW/Min the ARD can change consumption while its MW consumption is less than or equal to the MW value specified and greater than a lesser MW value specified on a separate row or zero if none. The ramp rate specified for the largest MW value will be used if the ARD's MW consumption is greater than this largest MW point defined for the curve.

7.4.1 Data Validation Rules

- Energy Ramp Rate ≥ 0; MW > 0
- eMarket will give you a warning if any of the entered rates is greater than the Ramp Rate Cap shown on the ARD Default Parameters display.

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- MW/Ramp Rate pairs can be entered in any order. eMarket will sort them and show them in increasing MW value order after the data is submitted and stored in the database.

7.4.2 View Ramp Rates

To view the ramp rate curve segments of an ARD:

1. In the ARD Navigation sub tabs, click the **Ramp Rate Default** tab.

   - The ARD Multiple Ramp Rates Daily Default display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired asset from the **ARD** filter.

      - The display shows the selected asset's default ramp rate curve data for the selected date; if a ramp rate curve is not defined for the selected date, nothing is shown on the display.

7.4.3 Create Ramp Rates

To create segments of a ramp rate curve for an ARD:

1. View the asset's ramp rate curve segments (§7.4.2)
2. Click the **New** button; you can click more than once if you want to create multiple segments.

   - A new row for each click is added in the grid with a pink background to indicate it has not been saved.

3. Type in the desired **MW** and **Energy Ramp Rate** values in the appropriate cells.
4. Repeat steps 2-3 as desired.
5. Click the **Update** button to save the data.

7.4.4 Modify Ramp Rates

To update ramp rate curve segments:

1. View the asset's ramp rate curve segments (§7.4.2)
2. (optional) To add new segments to the curve, do as described in §7.4.3.
3. (optional) To delete existing segments in the curve:

   a. Click a cell in the row to be deleted. The row will be highlighted.
   b. Click the **Delete** button. The row is removed.

4. To change the parameters of a curve segment, enter the desired **MW** and **Energy Ramp Rate** values in the appropriate cells.
5. Repeat steps 2-4 as needed.
6. Click the **Update** button to save the data.

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Note: to use the Ramp Rate defined on the ARD Default Parameters display, starting on the date selected, all Ramp Rate segments must be deleted from this display.

7.5 ARD Ramp Rate Hourly Updates Display

This display provides for viewing, entering and modifying hourly updates to an ARD's default ramp rate characteristics for a given market day. A ramp rate defines how quickly a unit can change its generation in MW per min. Depending on the ARD's physical characteristics this rate can vary as a function of the ARD's MW consumption, in other words the ARD's ramp rate characteristic is a curve defined as ramp rate for up to 10 ranges of the ARD's MW consumption. With this display, you can define an ARD's ramp rate characteristics on an hourly basis for a given market day to be either a single ramp rate or a ramp rate curve and thereby account for the ARD's physical configuration throughout the day.

Note: The existence of a ramp rate definition for an hour on this display overrides both the simple slope specified in the Ramp Rate field on the ARD Default Parameters display and the default ramp rate curve for the day, if one is defined, specified on the ARD Ramp Rate Default display.

The format of this display is shown below. There are two illustrations. The only difference is in the default values shown in the upper section when there is a default ramp rate curve defined for the ARD on the selected market day date and when there is none.

Shown only if there is a default ramp rate curve defined for the selected market day date.

The Default Values section is provided as a reference to show what are the default daily values for the chosen day that are being overridden by the hourly update values entered in the section below. The fields in this section of the display are:

- **Daily RR** – the ARD's default energy ramp rate defined on the ARD Default Parameters display for the selected market day date.

- **#/MW/RR** – the ARD's default ramp rate curve segments or MW blocks; # is the segment number, MW is the ARD's MW consumption upperbound for the block and RR is the ramp rate value for the range of MW consumption from the MW value of the previous segment (0 if there is no previous segment) up to the MW value of the segment. The RR of the last segment is the value used for ARD MW consumptions values greater than the MW value of the last segment.

The Default Values section can be collapsed using the double up-arrow icon at the extreme right of the section title bar to show more rows in the hourly section as shown below. The collapsed section can be expanded again to see the default values using the double down-arrow icon at the extreme right of the collapsed section title bar.

The Override Hourly Values section shows each hour of the day and fields to enter overrides. When the fields are blank, it means that there is no override of the default values for that hour. Hence setting all data entry fields for an hour to blank (NULL) means that the applicable daily default value is to be used for the market hour; i.e. it is equivalent to removing the override for the market hour.

The description of the fields in the Override Hourly Values section of the display are the same as those in the Default Values section, except they define the unit's ramp rate characteristic for the hour-ending shown in the Hour column. *Either a single ramp rate override or a ramp rate curve override can be defined for an hour, not both.*

The top row of the grid provides you with the means to enter or clear overrides for a selected range of hours. You select the "from" and "to" hours using the drop-down list boxes under the Hour column, enter a single ramp rate or a ramp rate curve using the data entry fields on the right and then select the "Copy" button. As illustrated below, the values entered in the top row are copied to the rows for each hour in the range selected and the cells where values are being changed are highlighted. This process can be repeated to enter different ramp rate updates for other hour ranges before selecting the "Update" button to save the values in the database. If you do use the top row, you need to *remember that leaving all data entry field on this row blank means that you want to remove the overrides for all hours in the range selected*. For example, if you want to remove overrides for every hour of the day, simply select "01" as the "From" hour and "24" as the "To" hour in the Hour drop-down selections, select Copy to blank out all data entry fields below and then select Update. Since you did not enter anything in the data entry fields, all overrides are removed.

Before selecting "Copy", example where you want to set the unit's ramp rate characteristics to a single ramp rate of 1.5 for hours ending 07 through 12.

After selecting "Copy", the values entered on the top row are copied to the rows for each of the selected hours. The fields where values are changed are highlighted to show where data entries will be made when the "Update" button is selected.

ARD Ramp Rate Hourly Updates

Before selecting "Copy", example where you want to set the unit's ramp rate characteristics to a different ramp rate curve for hours ending 04 through 06.

ARD Ramp Rate Hourly Updates

After selecting "Copy", the values entered on the top row are copied to the rows for each of the selected hours. The fields where values are changed are highlighted to show where data entries will be made when the "Update" button is selected.

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7.5.1 Data Validation Rules

- Ramp Rate ≥ 0; MW > 0

- eMarket will give you a warning if any of the entered rates is greater than the Ramp Rate Cap shown on the Unit Default Parameters display.

- MW/Ramp Rate pairs can be entered in any order. eMarket will sort them and show them in increasing MW value order after the data is submitted and stored in the database.

- Either a single ramp rate or a ramp rate curve can be defined for an hour, not both.

7.5.2 Override Unit's Default Ramp Rate for a Day and Hour

As discussed in §7.3 ARD Default Parameters Display, you define on this display a unit's daily default ramp rate. Similarly, as discussed in §7.4 ARD Multiple Ramp Rates Daily Default Display, you can define on this display a daily default ramp rate curve for the unit that supersedes the daily default. Both the daily default single ramp rate and the daily default ramp rate curve for a selected market day are shown in the Default Values section of the display. If you want to profile the unit's ramp rate characteristics on an hourly basis,:

1. In the Generation Navigation sub tabs, click the **Ramp Rate Hourly Updates** tab.

   - The ARD Ramp Rate Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired unit from the **ARD** filter.

      - The display reflects the hourly overrides for the selected unit.

3. To update the overrides for individual hours:

   a. Enter the override value for a single ramp rate or for a ramp curve in the hours that you wish. Remember that if you are switching from a ramp rate curve override to a single ramp rate value, you need to blank each segment of the ramp rate curve in addition to entering the single ramp rate value.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours

   a. Specify the range of hours by selecting "From" and "To" hour-ending values in the **Hour** drop-down list on the top row.
   b. Enter the override value for either a single ramp rate or a ramp rate curve in the top row.
   c. Select the **Copy** button to copy the entered values to the rows for each hour in the selected range.

d. Repeat steps a through c to enter different values in other range of hours if necessary.
e. Click the **Update** button to save the data for the selected hours.

7.6 ARD Schedule Manager Display

Schedule Manager enables users to view, create, and update schedules. The format of this display is shown below:

The fields on this display are:

- **Schedule Name** – a short name for the asset schedule, defined by the Participant. This label appears in the Schedule filter on the ARD displays.
- **Description** – a brief description of the asset's schedule, defined by the Participant. This label appears in the ARD by Portfolio display, which shows the DAM results by ARD portfolio.
- **Schedule Type** – identifies the number and type of the schedule, as follows:
  - **0 - 94** – price-based schedules
  - **95 - 99** – cost-based schedules, reserved for use by ISO New England.

7.6.1 Create a New Schedule

Users can define more than one price-based schedule for an ARD asset. To assist in creating multiple schedules for an ARD asset, the Schedule Manager display allows you to assign a schedule name and a description to a specific ARD asset schedule. To create a new schedule:

1. In the ARD Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired asset from the **ARD** filter.

      ▪ The existing schedules for the selected asset are listed.

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3. Click the **New** button.

4. Type the following information in the new row:

   a. Schedule Name
   b. Description

5. Select an unused type of schedule from the **Schedule Type** drop-down menu.

6. Click the **Update** button to save the data.

7.6.2 Modify a Schedule's Name and/or Description

After a schedule is created and saved to the database, you cannot modify the Schedule Type field. Only the schedule's name and description can be changed.

To modify an existing schedule's parameters:

1. In the ARD Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired asset from the **ARD** filter.

      ▪ The existing schedules for the selected asset are listed.

3. Modify the either or both of the following in any of the listed schedules:

   a. Schedule Name
   b. Description

4. Click the **Update** button to save the data.

7.6.3 Delete a schedule

1. In the ARD Navigation sub tabs, click the **Schedule Manager** tab.

   - The Schedule Manager display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired portfolio from the **Portfolio** filter.
   b. Select the desired asset from the **ARD** filter.

      ▪ The existing schedules for the selected asset are listed.

3. Select a cell in the row of the schedule that you want to delete.
4. Click the **Delete** button. If the schedule is not flagged available in any of the market days for the period that market information is preserved in the market database, it is deleted; otherwise you will get an error message.

7.7 ARD Schedule Detail Defaults Display

The Schedule Detail Defaults display is used to view and manage an ARD asset's default market offer parameters. The format of this display is shown below:

The fields on this display are:

- **Description** – the schedule description as entered on the Schedule Manager display.
- **Day Ahead Market** – this check box indicates whether the schedule is enabled for Day Ahead Market use.
- **Real Time Market** – this check box indicates whether the schedule is enabled for Real Time Market use.
- **Schedule Available** – indicates whether the schedule is to be used. This is managed on the Schedule Selection display.
- **Max Consumption (MW)** – the highest MW level at which the asset can be economically dispatched.
- **Min Consumption (MW)** – the lowest MW level at which the asset can be economically dispatched. This value represents the minimum amount, in MW, available from a Dispatchable Asset Related Demand that is not available for economic dispatch and is based on its physical characteristics.

7.7.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- Data is entered for each of the MW limit values, i.e. non-blank values appear in the data entry cells.

- Max Consumption ≥ Min Consumption ≥ 0 for dispatchable ARDs
  Max Consumption = Min Consumption ≥ 0 for non-dispatchable ARDs
  The data submitted is rejected if any of these limit value validations fails.

7.7.2 View Schedule Detail Defaults

To view the details of an ARD asset schedule:

1. In the ARD Navigation sub tabs, click the **Schedule Detail Defaults** tab.

    - The ARD Schedule Detail Defaults display is shown in the display pane.

2. In the **Filters pane**:

    a. Select the desired date from the **Date** filter.
    b. Select the desired portfolio from the **Portfolio** filter.
    c. Select the desired asset from the **ARD** filter.
    d. Select the desired schedule from the **Schedule** filter.

        - The display reflects the selected date's schedule detail.

7.7.3 Modify Schedule Operating Limits

To modify an ARD's schedule operating limits

1. View the ARD's schedule detail (§7.7.2)

2. Enter the desired changes for any or all of the following operating limits:

    a. Min Consumption (MW)
    b. Max Consumption (MW)

3. Click the **Update** button to save the data.

7.7.4 Enable Schedule for a Market

Another schedule parameter is market participation. The Participant selects the schedules that are enabled for the Day-Ahead Market (DAM) and/or the Real-Time market (RTM). The following steps enable a schedule for the specified market(s):

1. View the ARD's schedule detail (§7.7.2)
2. To enable/disable a schedule for use in the DAM, click the **Day Ahead Market** checkbox.
3. To enable/disable a schedule for use in the RTM, click the **Real Time Market** checkbox.
4. Click the **Update** button to save the data.

Note: If the schedule is flagged as available, you will not be able to change the schedule's applicable market flags. That is because one price-based schedule must be flagged as available for each of the markets at all times. To change a schedule's market eligibility, you must first make one or more other schedules available (one for each market).

7.8 ARD Schedule Offers Daily Default Display

The purpose of this display is to view and update the ARDs daily default schedule bid segments and Use Offer Slope flag. Schedule bid segments specify a MW amount and the price per MWH for consumption from the previous segment's MW amount up to this segment's MW amount. In other words, schedule bids consist of MW/price segments. Up to 10 segments can be defined for each schedule.

Bids in MW are cumulative. For example,

- To bid the first block of 15 MW of consumption at $30.00, you enter an offer segment of 15 MW @ $30.00

- To bid the next block of 20 MW of consumption at $10.00, you enter an offer segment of 35 MW @ $10.00

And so on. You can enter the segment bids in any order of MW values; eMarket will organize the segments and display them in increasing MW value order. The price value of each segment must however be less than the price of the previous segment after the segments are sorted in increasing MW value order. In other words, the bid segments must be monotonically decreasing in MW and increasing in price value.

The slope from zero to the first MW point (which can be zero), is equal to zero; that is to say that the price/MWH is fixed and equal to the price of the first segment. The price along the segment between MW points is a calculated slope or block, depending on the status of the Use Offer Slope checkbox.

The last MW point should be greater than or equal to the Max Consumption Limit. If it is not, the curve is extended with a slope equal to zero.

This is all illustrated in Figure 11.
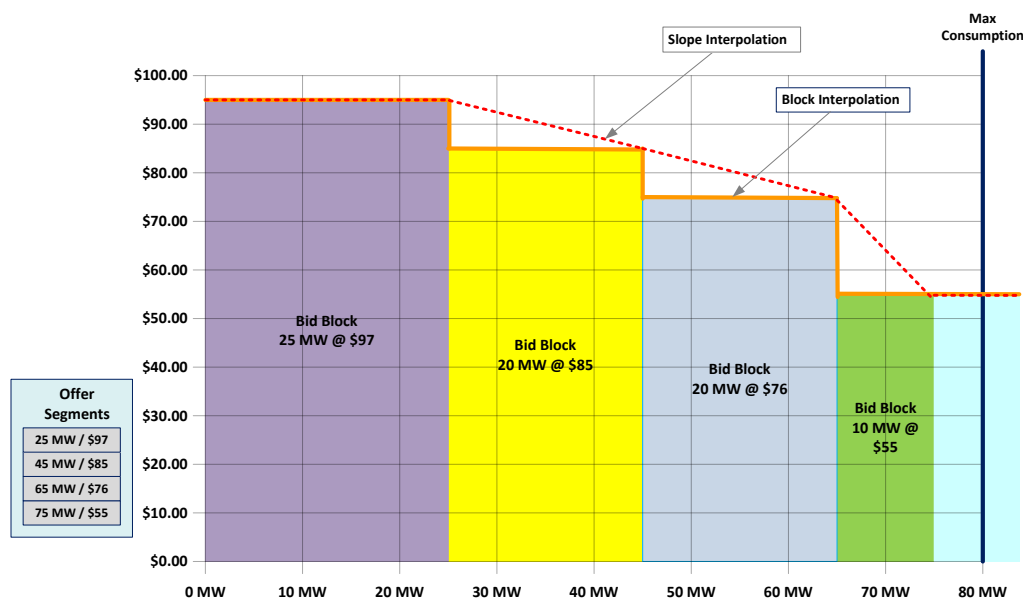
Figure 11 – Illustration of Schedule Bid Segments

ARD assets are eligible to change segment bid Price/MW pairs after the close of the DA market during the daily Re-Offer period and during the RT Intraday Re-Offer period.

The format of the Schedule Offers Daily Default display is shown below:

The fields on this display are:

- **MW** – the net MW consumption associated with this segment. The last MW point should be greater than or equal to the Max Consumption Limit.
- **Price** – the $/MWH price bid for this segment.
- **Use Offer Slope** – this check box indicates whether to use the offer slope for the incremental energy bids within the market clearing and dispatch software as illustrated in Figure 11.

7.8.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- MW quantity must be strictly positive or zero; i.e. MW ≥ 0

- Price must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Offer Floor price; i.e. Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[23].

- Offers must be monotonically decreasing. The price value for each segment must be less than the one of the previous segment after the segments are ordered in increasing MW value[24].

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[23] Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.
[24] The same price for successive segments is allowed; however it doesn't really make sense when considering Participant offers because the two segments are equivalent to a single segment with a MW value equal to that of the second segment. It is allowed only to permit mitigation reference price values for successive offer segments to be equal.

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7.8.2 Modify Schedule Offers

1. In the ARD Navigation sub tabs, click the **Schedule Offers Default** tab.

   - The Schedule Offers Daily Default display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired asset from the **ARD** filter.
   d. Select the desired schedule from the **Schedule** filter.

      ▪ The display reflects the selected schedule's bid data for the selected date.

3. (optional) Click the **New** button to add a new segment. You can click the button more than once to add several rows.

   - A new segment row is added for each click of the button and the background of each is pink to show that it has not been saved.

4. (optional) To delete a segment:

   a. Click in a cell in the row for the segment you wish to delete

      ▪ The row is highlighted

   b. Click the **Delete** button.

5. Type the following information for each segment as needed:

   a. MW
   b. Price

6. Repeat steps 3-5 as desired.
7. Click the **Update** button to save the data.

7.9 Schedule Offers Hourly Updates Display

This display provides for viewing, entering and modifying hourly updates to an ARD schedule's default offers for a given market day. Refer to §7.8 ARD Schedule Offers Daily Default Display for a description of these schedule offer parameters and how incremental energy offers must be structured. ***This is the only ARD display enabled for submittal of hourly updates during the RT Intraday Re-Offer period***.

The format of the display is shown below.

The Default Values section is provided as a reference to show what are the default offers for the chosen day that are being overridden by the hourly update values entered in the section below.

7.9.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- At least one MW/Price pair is entered for an hour and the Use Offer Slope checkbox must be set to a state other than "No Override". When all data entry cells for an hour are set to blank and the Use Offer Slope is set to "No Override", it means that the override for the hour is to be removed/deleted.

- MW quantity must be strictly positive or zero; i.e. MW ≥ 0

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- Price must be less than or equal to the Energy Offer Cap price and greater than or equal to the Energy Offer Floor price; i.e.
  Energy Offer Floor price ≤ Price ≤ Energy Offer Cap price[25].

- Offers must be monotonically decreasing. The price value for each segment must be less than the one of the previous segment after the segments are ordered in increasing MW value[26].

7.9.2 Override Schedule Offers for One or More Hours of a Market Day

1. In the ARD Navigation sub tabs, click the **Schedule Offers Hourly Updates** tab.

   - The ARD Schedule Offers Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:
   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired asset from the **ARD** filter.
   d. Select the desired schedule from the **Schedule** filter.

      ▪ The display reflects the hourly overrides for the selected ARD schedule.

3. To update the overrides for individual hours:

   a. Enter override values and set the Use Offer Slope in the hours that you wish. Enter blanks and set the Use Offer Slope to "No Override" if you want to remove an override.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours using the first row in the grid:

   a. Enter override values and set the Use Offer Slope in the top row. Enter blanks and set the Use Offer Slope to "No Override" if you want to remove overrides.
   b. Specify the range of hours to override by selecting the "From" (left drop-down selector) and "To" (right drop-down selector) hours in the top row
   c. Click the **Copy** button; this will copy the data that you entered in the top row to each row for the hours in the range that you selected.
   d. Repeat steps a through c for other range of hours as desired.
   e. Click the **Update** button to save the data for the selected hours.

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[25] Energy Offer Floor price and Energy Offer Cap price are both defined in Market Rule 1, section I.2.2.

[26] The same price for successive segments is allowed; however it doesn't really make sense when considering Participant offers because the two segments are equivalent to a single segment with a MW value equal to that of the second segment. It is allowed only to permit mitigation reference price values for successive offer segments to be equal.

7.10 ARD Schedule Selection Display

This display is used to make schedules available for a given day and market. The format of this display is shown below:

The fields on this display are:

- **ARD** – the name of the ARD asset.
- **Schedule ID** – the unique identifier of the schedule; it is the concatenation of the unique asset identifier and of the schedule type number.
- **Type** – the type of schedule: Price or Cost.
- **Schedule** – the name of the schedule as it was entered on the Schedule Manager display
- **Day Ahead** – an X-mark indicates that the schedule is enabled to be used in the clearing of the Day Ahead market if the schedule is flagged as available.
- **Real Time** – an X-mark indicates that the schedule is enabled to be used in the clearing of the Real Time market if the schedule is flagged as available.
- **Available** – a checkmark indicates that the schedule is to be use in the clearing of the selected markets on the selected operating day.

7.10.1 Select Schedule for an Operating Day and Market

The ARD Schedule Selection operation is for modifying the availability of a schedule for a specific day.

Note: One and only one price-based schedule can be available for a market on any given day. Therefore to make a schedule that is enabled for both Day Ahead and Real Time markets unavailable, you must at the same time make another schedule that is enabled for both markets available or two other schedules, one enabled for the Day Ahead market and another enabled for the Real Time market, available.

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To update data or enable a schedule:

1. In the ARD Navigation sub tabs, click the **Schedule Selection** tab.

   - The ARD Schedule Selection display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.

      - The schedules for all assets in the chosen portfolio are displayed.

3. Toggle the **Available** checkboxes as desired.
4. Click the **Update** button to save your modifications.

Note: To change the market to which a schedule applies you must use the Schedule Detail Defaults display.
Note: You cannot change the availability of the cost-based schedules. The availability of these is managed by ISO New England.

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7.11 ARD Hourly Updates Display

This display is used to view and modify the hourly overrides of an asset's MW limits, default dispatch availability status and when it is applicable, its off-line reserve capabilities for a specified market day. Changes made to the asset data using the ARD Hourly Updates display supersede all schedule limits (ARD Schedule Detail Defaults display) and default asset parameters (ARD Default Parameters Display).

The format of this display is shown below:

The Default Values section is provided as a reference to show what are the limit values in the various schedules and the default dispatch availability status and off-line reserve claim capability for the chosen day that are being overridden by the hourly update values entered in the section below.

- **Schedule** – The name of the schedule
- **Min Consumption** – The Min Consumption limit specified in the schedule detail.
- **Max Consumption** – The Max Consumption limit specified in the schedule detail.
- **Claim 10 and Claim 30 Capable** – Indicate whether the ARD is registered as capable (Yes/No) of providing 10 and 30 minute non-spinning reserves from an offline state.

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- **Claim 10 and Claim 30 Default** – The daily default off-line 10 and 30 minute off-line reserve capability for the market day as submitted using the ARD Default Parameters display.
- **Claim 10 and Claim 30 Cap** – The demonstrated claim capabilities that were established during the last audit conducted by ISO New England. If the demonstrated capability value is undefined, it will be shown as "UD".
- **Default Status (Economic/Unavailable/Must Run)** – The dispatch availability status (Default Status) specified on the ARD Default Parameters display

The Default Values section can be collapsed using the double up-arrow icon at the extreme right of the section title bar to show more rows in the hourly section as shown below. The collapsed section can be expanded again to see the default values using the double down-arrow icon at the extreme right of the collapsed section title bar.

The Override Hourly Values section shows each hour of the day and fields to enter overrides. When the fields are blank and the radio buttons unchecked, it means that there is no override of the schedule or default values for that hour.

- **Hour** – Hour ending values are shown in the first column for each hour in the day. The row for hour ending 03 is not shown for the Spring Daylight Saving Time transition day. Similarly, the value on the row of the repeating hour ending 02 of the Fall Daylight Saving Time transition day is marked with an asterisk (*).

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- **Min Consumption** – Column to enter overrides of the Min Consumption limit for any hour of the day.
- **Max Consumption** – Column to enter overrides of the Max Consumption limit for any hour of the day.
- **Claim 10** – Column to enter overrides of the Claim 10 capability for any hour of the day if the ARD is Claim 10 capable. If the ARD is not Claim 10 capable, there will be no data entry cells in this column.
- **Claim 30** – Column to enter overrides of the Claim 30 capability for any hour of the day if the ARD is Claim 30 capable. If the ARD is not Claim 30 capable, there will be no data entry cells in this column.

The following override the Default Status specified on the ARD Default Parameters display:

- **Unavailable** – When checked, it indicates that the asset is unavailable for commitment and dispatch for that hour of the operating day.
- **Economic** – When checked, it indicates that the asset is available for economic commitment and dispatch for that hour of the operating day.
- **Must Run** – When checked, it indicates that the asset is self-scheduling for that hour of the operating day; that is, the asset must be committed at its Min Consumption limit and can be dispatched up to the Max Consumption limit based on economics.

If a value is entered for an hour in any of these columns, values must also be entered in every other column even if they are copies of the default values. Setting these limit values to blank (NULL) means that the corresponding values defined in the Schedule Detail data of the schedules that are flagged as available for the market day are to be used for that market hour; i.e. it is equivalent to removing the override of the values for that market hour. Setting the off-line reserve claim values to blank (NULL) means that the corresponding values defined in the ARD Default Parameters data for the market day are to be used for that market hour. Similarly clearing all of the Unavailable/Economic/Must Run flags means that the ARD's default status defined in the ARD Default Parameters data for the market day is to be used for that market hour.

The top row of the grid provides you with the means to enter or clear overrides for a range of hours:

If you do use the top row, you need to *remember that leaving all data entry fields on this row blank means that you want to remove the overrides for all hours in the range selected*. For example, if you want to remove all overrides for every hour of the day, select 01 for the "From" hour (left drop-down selector) and 24 for the "To" hour (right drop-down selector) in the Hour drop-down selection list, select the "Copy" button and then select Update. Since you did not enter anything in the limit fields or select any of the dispatch availability override flags, all overrides are removed. *You cannot use the top row to selectively update the overrides in one column for a range of hours while retaining the override values in the other columns*.

7.11.1 Data Validation Rules

When you click the Update button, eMarket makes the following checks to ensure that the entered data is valid:

- Max Consumption ≥ Min Consumption ≥ 0 for dispatchable ARDs
  Max Consumption = Min Consumption ≥ 0 for non-dispatchable ARDs.

- A warning will be returned if the ARD is Claim 10 capable, a Claim 10 override is entered and any of the following conditions exist

  - Claim 10 = 0
  - Claim 10 > Claim 10 Cap – meaning that the Claim 10 Cap value will be used instead of the offered value

- A warning will be returned if the ARD is Claim 30 capable, a Claim 30 override is entered and any of the following conditions exist

  - Claim 30 = 0
  - Claim 30 > Claim 30 Cap – meaning that the Claim 30 Cap value will be used instead of the offered value
  - Claim 30 < Claim 10 – meaning that the Claim 10 value will be used instead of the offered Claim 30 value.

7.11.2 Override MW Operating Limits for a Day and Hour

As discussed in §7.7 ARD Schedule Detail Defaults Display, you define on this display an ARD's MW operating limits under the selected schedule. These limit values are shown in the Defaults section for each schedule that you've created for the ARD. If you want to profile the ARD's MW operating limits on an hourly basis, irrespective of which schedule is designated as available for a given market, you override the schedule values using the ARD Hourly Updates display as follows:

1. In the ARD Navigation sub tabs, click the **Hourly Updates** tab.

   - The ARD Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.
   b. Select the desired portfolio from the **Portfolio** filter.
   c. Select the desired asset from the **ARD** filter.

      - The display reflects the hourly overrides for the selected ARD.

3. To update the overrides for individual hours:

   a. Enter override values for all of the limits in the hours that you wish. You must also enter ARD dispatch availability status overrides. If the ARD is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove an override, you must enter blanks in every data entry cells and deselect all status overrides.
   b. Click the **Update** button to save the data.

4. To update the overrides for a range of hours

    a. Enter override values for all of the limits in the top row. You must also enter ARD dispatch availability status overrides. If the ARD is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove overrides, leave all the data entry cells on the first row blank and the status overrides deselected.
    b. In the Hour column, select a "From" hour (left drop-down selector) and a "To" hour (right drop-down selector) and then select the **Copy** button. This will copy the data entered in the top row to every row for the range of hours selected.
    c. Repeat steps a and b if you want to enter/remove overrides for other ranges of hours.
    d. Click the **Update** button to save the data for the selected hours.

7.11.3 Override the Status of an ARD Asset for a Day and Hour

As discussed in §7.3 ARD Default Parameters Display, you define on this display an ARD's default dispatch availability status (Default Status) for an entire market day. This status is shown in the Defaults section. If you want to profile the ARD's dispatch availability status on an hourly basis, you override this default status using the ARD Hourly Updates display.

1. In the ARD Navigation sub tabs, click the **Hourly Updates** tab.

    *   The ARD Hourly Updates display is shown in the display pane.

2. In the **Filters pane**:

    a. Select the desired date from the **Date** filter.
    b. Select the desired portfolio from the **Portfolio** filter.
    c. Select the desired asset from the **ARD** filter.

        ▪ The display reflects the hourly overrides for the selected unit.

3. To update the overrides for individual hours:

    a. Select the Unavailable/Economic/Must Run status for the hours that you want to override the default status. You must also enter override values for all the limits even if they are copies of the default values. If the ARD is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove an override, deselect all the status overrides and enter blanks in all other data entry cells.
    b. Click the **Update** button to save the data.

4. To update the overrides a range of hours

    a. Select the status override value in the first row. You must also enter override values for all the limits even if they are copies of the default values. If the ARD is Claim 10 or Claim 30 capable, you must also enter Claim 10 and Claim 30 override values. If you want to remove overrides, leave all the data entry cells on the first row blank and the status overrides deselected.

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b. In the Hour column, select a "From" hour (left drop-down selector) and a "To" hour (right drop-down selector) and then select the **Copy** button. This will copy the data entered in the top row to every row for the range of hours selected.

c. Repeat steps a and b if you want to enter/remove overrides for other ranges of hours.

d. Click the **Update** button to save the data for the selected hours.

7.11.4 Self-Schedule an ARD Asset

If you want to self-schedule (must run) an ARD asset, you must submit a **Must Run** status and indicate whether the ARD is block loaded or if it can follow ISO dispatch instructions. To self-commit a ARD and allow the ISO to issue dispatch instructions, submit a must run status for the ARD, with a Min Consumption limit less than the Max Consumption limit. To submit a fixed MW schedule for the ARD with a must run status, set the Min Consumption limit equal to the Max Consumption limit.

Note: For Non-dispatchable ARDs the Minimum Consumption and Maximum Consumption values must be equal.

7.12 ARD by Portfolio Display

You can view the cleared results of the Day-Ahead Market for each ARD asset listed in a selected portfolio using the **ARD by Portfolio** display that is accessible on one of the ARD sub tabs. The day-ahead ARD information includes the name of the schedule used when committing the ARD. That will be the schedule that was designated to be available for the DA market on the selected day. The other information is the MW amount that the ARD is committed to consume along with the Locational Marginal Price (LMP) at the ARD Pnode for each hour of the market day. If the ARD was not committed, "(*No Schedule Committed*)" will be shown instead of the schedule name. Information for a 24-hour period is shown on two lines: the top line details the hours ending 01 through 12; the second line details hours ending 13 through 24. The last row of the display is labeled **Total Portfolio MW** and shows the total MW amount for each hour committed in the Day-Ahead market for all the ARDs in your portfolio. Information on the display is shown only after the Day-Ahead market has been cleared.

The format of this display is shown below:

The following ARD information is displayed for each ARD asset included in the selected ARD portfolio:

- **ARD/Schedule** – the name of the ARD and of the schedule on which it was committed. If the ARD was not committed, "No Schedule Committed" is shown instead of a schedule name.
- **MW @ Price** – the MW amount that ARD is committed to consume and the $/MWH DA LMP at the ARD Pnode for each hour of the day.

7.12.1 View DA Commitment for each ARD in Portfolio

To view the commitment in the Day-Ahead market of the ARDs listed in your portfolios and the Day-Ahead LMPs at their Pnodes:

1. In the ARD Navigation sub tabs, click the **ARD by Portfolio** tab.

   - The ARD by Portfolio display is shown in the display pane.

2. In the **Filters pane**:

   a. Select the desired date from the **Date** filter.

   b. Select the desired portfolio from the **Portfolio** filter.

- The display reflects the selected market day's day-ahead commitment and LMPs for each of the ARDs listed in the selected portfolio. If the Day-Ahead market has not yet been cleared for the selected day, the following text is shown in the display title bar:
  "*The day ahead market results are not available …*".

7.13 XML Download for ARD Display

The XML Download display is accessible through the ARD Navigation sub tab. This display enables you to download pre-defined ARD specific XML report files of data that you maintain in the ISO-NE Market System, including results from the cleared Day-Ahead market. It also provides you the means to upload data in XML formatted data files into the ISO-NE Market System to be used to clear the Day-Ahead and Real Time markets. The format of the XML files can be found in the eMarket Data Exchange Specification posted on the ISO-NE web site under *Support -> Data Retrieval -> Upload/Download File Formats*.

The following XML reports of ARD data are available for downloading:

- Asset-Related Demand
- Asset-Related Demand Ramp Rates
- Asset-Related Demand Ramp Rate Hourly Updates
- ARD Schedules
- ARD Schedule Details
- ARD Schedule Offers
- ARD Schedule Offers Hourly (Updates)
- ARD Schedule Selection
- Asset-Related Demand Hourly Updates
- Asset-Related Demand Result

Each returns an XML formatted report for the selected date and for all the unique ARDs listed in all of the user's portfolios.

See §3.2 for details on uploading and downloading files. The following sections provide samples of the downloaded reports.

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7.13.1 Asset-Related Demand XML Report

This report contains the information that you entered and is on the ARD Default Parameters display for all unique ARDs listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARD day="2014-08-24" ID="12345">
    <ARDLongName>MY LOAD</ARDLongName>
    <ARDShortName>MYLD1</ARDShortName>
    <AssetType>Pump</AssetType>
    <AssetNumber>12345</AssetNumber>
    <Claim10Settings claim10Capable="true">
      <Claim10>0</Claim10>
      <Claim10Cap xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    </Claim10Settings>
    <Claim30Settings claim30Capable="true">
      <Claim30>0</Claim30>
      <Claim30Cap xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    </Claim30Settings>
    <DayAheadRequired>false</DayAheadRequired>
    <DefaultStatus>Economic</DefaultStatus>
    <Dispatchable>true</Dispatchable>
    <DispatchZone>West MA</DispatchZone>
    <LeadParticipantID>88888</LeadParticipantID>
    <LeadParticipantName>IAM PARTICIPANT</LeadParticipantName>
    <NodeID>99999</NodeID>
    <NodeName>ANODE</NodeName>
    <RampRateCap>11</RampRateCap>
    <RampRateDefault>9999</RampRateDefault>
  </ARD>
  <ARD day="2014-08-24" ID="55555">
    <ARDLongName>MY LOAD 2</ARDLongName>
    <ARDShortName>MYLD2</ARDShortName>
    <AssetType>Pump</AssetType>
    <AssetNumber>55555</AssetNumber>
    <Claim10Settings claim10Capable="true">
      <Claim10>0</Claim10>
      <Claim10Cap xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    </Claim10Settings>
    <Claim30Settings claim30Capable="true">
      <Claim30>0</Claim30>
      <Claim30Cap xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    </Claim30Settings>
    <DayAheadRequired>false</DayAheadRequired>
    <DefaultStatus>Economic</DefaultStatus>
    <Dispatchable>true</Dispatchable>
    <DispatchZone>West MA</DispatchZone>
    <LeadParticipantID>99999</LeadParticipantID>
    <LeadParticipantName> IAM PARTICIPANT 2</LeadParticipantName>
    <NodeID>55555</NodeID>
    <NodeName>ANODE2</NodeName>
    <RampRateCap xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <RampRateDefault>9999</RampRateDefault>
  </ARD>
</GetARDResponse>
```

7.13.2 Asset-Related Demand Ramp Rates XML Report

This report contains the information that you entered and is on the ARD Ramp Rates display for all unique ARDs listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDRampRateResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDRampRate day="2014-08-24" ID="55555">
    <RampRateCap>11</RampRateCap>
    <RampRateCurve>
      <RampRatePoint rate="1" MW="10"/>
    </RampRateCurve>
    <ShortName>ARDUX</ShortName>
  </ARDRampRate>
  <ARDRampRate day="2014-08-24" ID="66666">
    <RampRateCurve>
      <RampRatePoint rate="30" MW="25"/>
    </RampRateCurve>
    <ShortName>ARDUY</ShortName>
  </ARDRampRate>
</GetARDRampRateResponse>
```

7.13.3 Asset-Related Demand Ramp Rate Hourly Updates XML Report

This report contains the information that you entered and is on the ARD Ramp Rate Hourly Updates display for all unique ARDs listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDRampRateHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDRampRateHourly day="2014-08-24" ID="55555">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="10" MW="10"/>
          <RampRatePoint rate="1" MW="13"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T01:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="8" MW="5"/>
          <RampRatePoint rate="12" MW="10"/>
          <RampRatePoint rate="10" MW="12"/>
          <RampRatePoint rate="1" MW="13"/>
        </RampRateCurve>
      </HourlyValues>
      .
      .
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="10" MW="10"/>
          <RampRatePoint rate="1" MW="13"/>
        </RampRateCurve>
      </HourlyValues>
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <RampRateCurve>
          <RampRatePoint rate="8" MW="5"/>
```

```xml
                            <RampRatePoint rate="12" MW="10"/>
                            <RampRatePoint rate="10" MW="12"/>
                            <RampRatePoint rate="1" MW="13"/>
                        </RampRateCurve>
                    </HourlyValues>
                </HourlyProfile>
                <ShortName>ARPXP</ShortName>
            </ARDRampRateHourly>
            <ARDRampRateHourly day="2014-08-24" ID="44444">
                <HourlyProfile>
                    <HourlyValues time="2014-08-24T00:00:00-04:00">
                        <RampRateCurve>
                            <RampRatePoint rate="27" MW="240"/>
                            <RampRatePoint rate="29" MW="245"/>
                            <RampRatePoint rate="30" MW="250"/>
                        </RampRateCurve>
                    </HourlyValues>
                    <HourlyValues time="2014-08-24T01:00:00-04:00">
                        <RampRateCurve>
                            <RampRatePoint rate="27" MW="240"/>
                            <RampRatePoint rate="29" MW="245"/>
                            <RampRatePoint rate="30" MW="250"/>
                        </RampRateCurve>
                    </HourlyValues>
                    .
                    .
                    <HourlyValues time="2014-08-24T22:00:00-04:00">
                        <RampRateCurve>
                            <RampRatePoint rate="27" MW="240"/>
                            <RampRatePoint rate="28" MW="245"/>
                            <RampRatePoint rate="29" MW="246"/>
                            <RampRatePoint rate="29.5" MW="247"/>
                            <RampRatePoint rate="30" MW="248"/>
                            <RampRatePoint rate="31" MW="249"/>
                            <RampRatePoint rate="30" MW="250"/>
                        </RampRateCurve>
                    </HourlyValues>
                    <HourlyValues time="2014-08-24T23:00:00-04:00">
                        <RampRateCurve>
                            <RampRatePoint rate="27" MW="240"/>
                            <RampRatePoint rate="28" MW="245"/>
                            <RampRatePoint rate="29" MW="246"/>
                            <RampRatePoint rate="29.5" MW="247"/>
                            <RampRatePoint rate="30" MW="248"/>
                            <RampRatePoint rate="31" MW="249"/>
                            <RampRatePoint rate="30" MW="250"/>
                        </RampRateCurve>
                    </HourlyValues>
                </HourlyProfile>
                <ShortName>ARPVP</ShortName>
            </ARDRampRateHourly>
        </GetARDRampRateHourlyResponse>
```

7.13.4 Asset-Related Demand Schedules XML Report

This report contains the information that you entered and is on the ARD Schedule Manager display for all schedules of every unique ARD listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDScheduleResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDSchedule schedID="5555500">
    <ARDID>55555</ARDID>
    <ARDShortName>ARDXP</ARDShortName>
    <SchedLongName>DFLPRICE</SchedLongName>
    <SchedShortName>DFLPRICE</SchedShortName>
    <SchedType>Price</SchedType>
    <SchedTypeID>0</SchedTypeID>
  </ARDSchedule>
  <ARDSchedule schedID="5555599">
    <ARDID>55555</ARDID>
    <ARDShortName>ARDXP</ARDShortName>
    <SchedLongName>DFLCOST</SchedLongName>
    <SchedShortName>DFLCOST</SchedShortName>
    <SchedType>Cost</SchedType>
    <SchedTypeID>99</SchedTypeID>
  </ARDSchedule>
  <ARDSchedule schedID="6666600">
    <ARDID>66666</ARDID>
    <ARDShortName>ARDVP</ARDShortName>
    <SchedLongName>DFLPRICE</SchedLongName>
    <SchedShortName>DFLPRICE</SchedShortName>
    <SchedType>Price</SchedType>
    <SchedTypeID>0</SchedTypeID>
  </ARDSchedule>
  <ARDSchedule schedID="6666612">
    <ARDID>66666</ARDID>
    <ARDShortName>ARDVP</ARDShortName>
    <SchedLongName>ARDVP Price</SchedLongName>
    <SchedShortName>ARDVP1</SchedShortName>
    <SchedType>Price</SchedType>
    <SchedTypeID>12</SchedTypeID>
  </ARDSchedule>
  <ARDSchedule schedID="6666699">
    <ARDID>66666</ARDID>
    <ARDShortName>ARDVP</ARDShortName>
    <SchedLongName>DFLCOST</SchedLongName>
    <SchedShortName>DFLCOST</SchedShortName>
    <SchedType>Cost</SchedType>
    <SchedTypeID>99</SchedTypeID>
  </ARDSchedule>
</GetARDScheduleResponse>
```

7.13.5 Asset-Related Demand Schedule Details XML Report

This report contains the information that you entered and is on the ARD Schedule Detail display for all schedules of every unique ARD listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDScheduleDetailResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDScheduleDetail day="2014-08-24" ID="5555500">
    <MarketType>Both</MarketType>
    <MaxConsumption>295</MaxConsumption>
    <MinConsumption>240</MinConsumption>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>DFLPRICE</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="5555599">
    <MarketType>Both</MarketType>
    <MaxConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <MinConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>DFLCOST</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="6666600">
    <MarketType>Both</MarketType>
    <MaxConsumption>295</MaxConsumption>
    <MinConsumption>240</MinConsumption>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>DFLPRICE</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="6666699">
    <MarketType>Both</MarketType>
    <MaxConsumption>0</MaxConsumption>
    <MinConsumption>0</MinConsumption>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>DFLCOST</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="8888800">
    <MarketType>Both</MarketType>
    <MaxConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <MinConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <ScheduleAvailable>false</ScheduleAvailable>
    <ShortName>DFLPRICE</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="8888812">
    <MarketType>Both</MarketType>
    <MaxConsumption>13</MaxConsumption>
    <MinConsumption>0</MinConsumption>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>RR-P_12</ShortName>
  </ARDScheduleDetail>
  <ARDScheduleDetail day="2014-08-24" ID="8888899">
    <MarketType>Both</MarketType>
    <MaxConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <MinConsumption xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
    <ScheduleAvailable>true</ScheduleAvailable>
    <ShortName>DFLCOST</ShortName>
  </ARDScheduleDetail>
</GetARDScheduleDetailResponse>
```

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7.13.6 Asset-Related Demand Schedule Offers XML Report

This report contains the information that you entered and is on the ARD Schedule Offers display for all schedules of every unique ARD listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDScheduleBidResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
   <ARDScheduleBid day="2014-08-24" ID="3333300">
      <PriceCurve>
         <PricePoint price="20" MW="200"/>
      </PriceCurve>
      <UseOfferSlope>false</UseOfferSlope>
      <ShortName>DFLPRICE</ShortName>
   </ARDScheduleBid>
   <ARDScheduleBid day="2014-08-24" ID="3333399">
      <PriceCurve>
         <PricePoint price="21.5" MW="295"/>
      </PriceCurve>
      <UseOfferSlope>true</UseOfferSlope>
      <ShortName>DFLCOST</ShortName>
   </ARDScheduleBid>
   <ARDScheduleBid day="2014-08-24" ID="4444400">
      <PriceCurve>
         <PricePoint price="23" MW="295"/>
      </PriceCurve>
      <UseOfferSlope>false</UseOfferSlope>
      <ShortName>DFLPRICE</ShortName>
   </ARDScheduleBid>
   <ARDScheduleBid day="2014-08-24" ID="4444499">
      <PriceCurve>
         <PricePoint price="15" MW="295"/>
      </PriceCurve>
      <UseOfferSlope>false</UseOfferSlope>
      <ShortName>DFLCOST</ShortName>
   </ARDScheduleBid>
   <ARDScheduleBid day="2014-08-24" ID="5555512">
      <PriceCurve>
         <PricePoint price="6" MW="6"/>
         <PricePoint price="5.99" MW="13"/>
      </PriceCurve>
      <UseOfferSlope>false</UseOfferSlope>
      <ShortName>RR-P_12</ShortName>
   </ARDScheduleBid>
   <ARDScheduleBid day="2014-08-24" ID="5555599">
      <PriceCurve>
         <PricePoint price="61" MW="6"/>
         <PricePoint price="59" MW="13"/>
      </PriceCurve>
      <UseOfferSlope>false</UseOfferSlope>
      <ShortName>DFLCOST</ShortName>
   </ARDScheduleBid>
</GetARDScheduleBidResponse>
```

7.13.7 Asset-Related Demand Schedule Offers Hourly Updates XML Report

This report contains the information that you entered and is on the ARD Schedule Offers Hourly Updates display for all unique ARDs listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDScheduleBidHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDScheduleBidHourly day="2014-08-24" ID="5555500">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <PriceCurve>
          <PricePoint price="45.45" MW="240"/>
          <PricePoint price="40.4" MW="255"/>
          <PricePoint price="35.35" MW="270"/>
          <PricePoint price="30.3" MW="280"/>
          <PricePoint price="25" MW="295"/>
        </PriceCurve>
        <UseOfferSlope>false</UseOfferSlope>
      </HourlyValues>
      <HourlyValues time="2014-08-24T01:00:00-04:00">
        <PriceCurve>
          <PricePoint price="50.45" MW="241"/>
          <PricePoint price="45.4" MW="256"/>
          <PricePoint price="40.35" MW="271"/>
          <PricePoint price="35.3" MW="281"/>
          <PricePoint price="30" MW="296"/>
        </PriceCurve>
        <UseOfferSlope>false</UseOfferSlope>
      </HourlyValues>
      .
      .
      .
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <PriceCurve>
          <PricePoint price="45.45" MW="240"/>
          <PricePoint price="40.4" MW="255"/>
          <PricePoint price="35.35" MW="270"/>
          <PricePoint price="30.3" MW="280"/>
          <PricePoint price="25" MW="295"/>
        </PriceCurve>
        <UseOfferSlope>false</UseOfferSlope>
      </HourlyValues>
      <HourlyValues time="2014-08-24T23:00:00-04:00">
        <PriceCurve>
          <PricePoint price="50.45" MW="241"/>
          <PricePoint price="45.4" MW="256"/>
          <PricePoint price="40.35" MW="271"/>
          <PricePoint price="35.3" MW="281"/>
          <PricePoint price="30" MW="296"/>
        </PriceCurve>
        <UseOfferSlope>false</UseOfferSlope>
      </HourlyValues>
    </HourlyProfile>
    <ShortName>DFLPRICE</ShortName>
  </ARDScheduleBidHourly>
  <ARDScheduleBidHourly day="2014-08-24" ID="6666612">
```

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```xml
<HourlyProfile>
  <HourlyValues time="2014-08-24T00:00:00-04:00">
    <PriceCurve>
      <PricePoint price="16" MW="1"/>
      <PricePoint price="14" MW="2"/>
      <PricePoint price="12" MW="3"/>
      <PricePoint price="10" MW="4"/>
      <PricePoint price="8" MW="5"/>
      <PricePoint price="6" MW="6"/>
      <PricePoint price="4" MW="7"/>
      <PricePoint price="2" MW="9"/>
      <PricePoint price="0" MW="12"/>
      <PricePoint price="-10" MW="16"/>
    </PriceCurve>
    <UseOfferSlope>true</UseOfferSlope>
  </HourlyValues>
  <HourlyValues time="2014-08-24T01:00:00-04:00">
    <PriceCurve>
      <PricePoint price="16" MW="1"/>
      <PricePoint price="14" MW="2"/>
      <PricePoint price="12" MW="3"/>
      <PricePoint price="10" MW="4"/>
      <PricePoint price="8" MW="5"/>
      <PricePoint price="6" MW="6"/>
      <PricePoint price="4" MW="7"/>
      <PricePoint price="2" MW="9"/>
      <PricePoint price="0" MW="12"/>
      <PricePoint price="-10" MW="16"/>
    </PriceCurve>
    <UseOfferSlope>true</UseOfferSlope>
  </HourlyValues>
  .
  .
  <HourlyValues time="2014-08-24T23:00:00-04:00">
    <PriceCurve>
      <PricePoint price="16" MW="1"/>
      <PricePoint price="15" MW="2"/>
      <PricePoint price="12" MW="5"/>
      <PricePoint price="5" MW="10"/>
      <PricePoint price="0" MW="15"/>
      <PricePoint price="-15" MW="20"/>
    </PriceCurve>
    <UseOfferSlope>true</UseOfferSlope>
  </HourlyValues>
</HourlyProfile>
<ShortName>DFLPRICE</ShortName>
</ARDScheduleBidHourly>
</GetARDScheduleBidHourlyResponse>
```

7.13.8 Asset-Related Demand Schedule Selection XML Report

This report contains the information that you entered and is on the ARD Schedule Selection display for all schedules of every unique ARD listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDScheduleSelectionResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDScheduleSelection day="2014-08-24">
    <ARDSchedule ID="2222200">
      <Available>true</Available>
      <ShortName>DFLPRICE</ShortName>
    </ARDSchedule>
    <ARDSchedule ID="2222299">
      <Available>true</Available>
      <ShortName>DFLCOST</ShortName>
    </ARDSchedule>
    <ARDSchedule ID="3333300">
      <Available>true</Available>
      <ShortName>DFLPRICE</ShortName>
    </ARDSchedule>
    <ARDSchedule ID="3333399">
      <Available>true</Available>
      <ShortName>DFLCOST</ShortName>
    </ARDSchedule>
  </ARDScheduleSelection>
</GetARDScheduleSelectionResponse>
```

7.13.9 Asset-Related Demand Hourly Updates XML Report

This report contains the information that you entered and is on the ARD Hourly Updates display for all unique ARDs listed in all of your portfolios. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDHourlyResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDHourly day="2014-08-24" ID="33333">
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00">
        <MaxConsumption>0</MaxConsumption>
        <MinConsumption>0</MinConsumption>
        <ResourceStatus>Economic</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      <HourlyValues time="2014-08-24T01:00:00-04:00">
        <MaxConsumption>0</MaxConsumption>
        <MinConsumption>0</MinConsumption>
        <ResourceStatus>Economic</ResourceStatus>
        <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
      </HourlyValues>
      .
      .
      .
      <HourlyValues time="2014-08-24T22:00:00-04:00">
        <MaxConsumption>0</MaxConsumption>
        <MinConsumption>0</MinConsumption>
        <ResourceStatus>Economic</ResourceStatus>
```

```xml
          <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        </HourlyValues>
        <HourlyValues time="2014-08-24T23:00:00-04:00">
          <MaxConsumption>0</MaxConsumption>
          <MinConsumption>0</MinConsumption>
          <ResourceStatus>Economic</ResourceStatus>
          <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        </HourlyValues>
      </HourlyProfile>
      <ShortName>ARDXP</ShortName>
    </ARDHourly>
    <ARDHourly day="2014-08-24" ID="44444">
      <HourlyProfile>
        <HourlyValues time="2014-08-24T00:00:00-04:00">
          <MaxConsumption>0</MaxConsumption>
          <MinConsumption>0</MinConsumption>
          <ResourceStatus>Economic</ResourceStatus>
          <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        </HourlyValues>
        <HourlyValues time="2014-08-24T01:00:00-04:00">
          <MaxConsumption>288</MaxConsumption>
          <MinConsumption>280</MinConsumption>
          <ResourceStatus>Economic</ResourceStatus>
          <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        </HourlyValues>
        .
        .
        <HourlyValues time="2014-08-24T23:00:00-04:00">
          <MaxConsumption>0</MaxConsumption>
          <MinConsumption>0</MinConsumption>
          <ResourceStatus>Economic</ResourceStatus>
          <Claim10 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
          <Claim30 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
        </HourlyValues>
      </HourlyProfile>
      <ShortName>ARDVP</ShortName>
    </ARDHourly>
</GetARDHourlyResponse>
```

7.13.10 Asset-Related Demand Results XML Report

This report contains the same information that is shown on the ARD by Portfolio display. The report contains information only after the Day-Ahead market has been cleared and the time for the opening of the Re-Offer Period of the selected day has passed. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetARDByParticipantResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
  <ARDByParticipant day="2014-08-24" ID="44444">
    <ARDShortName>ARDXP</ARDShortName>
    <ARDScheduleID>4444400</ARDScheduleID>
    <ARDScheduleShortName>DFLPRICE</ARDScheduleShortName>
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00" MW="0" price="36.2"/>
      <HourlyValues time="2014-08-24T01:00:00-04:00" MW="0" price="34.71"/>
      <HourlyValues time="2014-08-24T02:00:00-04:00" MW="0" price="33.81"/>
      <HourlyValues time="2014-08-24T03:00:00-04:00" MW="0" price="32.68"/>
      <HourlyValues time="2014-08-24T04:00:00-04:00" MW="0" price="33.83"/>
      <HourlyValues time="2014-08-24T05:00:00-04:00" MW="0" price="34.61"/>
      <HourlyValues time="2014-08-24T06:00:00-04:00" MW="0" price="38.54"/>
      <HourlyValues time="2014-08-24T07:00:00-04:00" MW="0" price="41.6"/>
      <HourlyValues time="2014-08-24T08:00:00-04:00" MW="0" price="41.61"/>
      <HourlyValues time="2014-08-24T09:00:00-04:00" MW="0" price="43.22"/>
      <HourlyValues time="2014-08-24T10:00:00-04:00" MW="0" price="51"/>
      <HourlyValues time="2014-08-24T11:00:00-04:00" MW="0" price="49.75"/>
      <HourlyValues time="2014-08-24T12:00:00-04:00" MW="0" price="52.61"/>
      <HourlyValues time="2014-08-24T13:00:00-04:00" MW="0" price="55.27"/>
      <HourlyValues time="2014-08-24T14:00:00-04:00" MW="0" price="57.03"/>
      <HourlyValues time="2014-08-24T15:00:00-04:00" MW="0" price="57.14"/>
      <HourlyValues time="2014-08-24T16:00:00-04:00" MW="0" price="57.18"/>
      <HourlyValues time="2014-08-24T17:00:00-04:00" MW="0" price="55.1"/>
      <HourlyValues time="2014-08-24T18:00:00-04:00" MW="0" price="52.06"/>
      <HourlyValues time="2014-08-24T19:00:00-04:00" MW="0" price="48.8"/>
      <HourlyValues time="2014-08-24T20:00:00-04:00" MW="0" price="51.63"/>
      <HourlyValues time="2014-08-24T21:00:00-04:00" MW="0" price="42.16"/>
      <HourlyValues time="2014-08-24T22:00:00-04:00" MW="0" price="40.7"/>
      <HourlyValues time="2014-08-24T23:00:00-04:00" MW="0" price="40.36"/>
    </HourlyProfile>
  </ARDByParticipant>
  <ARDByParticipant day="2014-08-24" ID="55555">
    <ARDShortName>ARDVP</ARDShortName>
    <ARDScheduleID>5555500</ARDScheduleID>
    <ARDScheduleShortName>DFLPRICE</ARDScheduleShortName>
    <HourlyProfile>
      <HourlyValues time="2014-08-24T00:00:00-04:00" MW="0" price="36.2"/>
      <HourlyValues time="2014-08-24T01:00:00-04:00" MW="288" price="34.71"/>
      <HourlyValues time="2014-08-24T02:00:00-04:00" MW="288" price="33.81"/>
      <HourlyValues time="2014-08-24T03:00:00-04:00" MW="288" price="32.68"/>
      <HourlyValues time="2014-08-24T04:00:00-04:00" MW="286" price="33.83"/>
      <HourlyValues time="2014-08-24T05:00:00-04:00" MW="286" price="34.61"/>
      <HourlyValues time="2014-08-24T06:00:00-04:00" MW="0" price="38.54"/>
      <HourlyValues time="2014-08-24T07:00:00-04:00" MW="0" price="41.6"/>
      <HourlyValues time="2014-08-24T08:00:00-04:00" MW="0" price="41.61"/>
      <HourlyValues time="2014-08-24T09:00:00-04:00" MW="0" price="43.22"/>
      <HourlyValues time="2014-08-24T10:00:00-04:00" MW="0" price="51"/>
      <HourlyValues time="2014-08-24T11:00:00-04:00" MW="0" price="49.75"/>
      <HourlyValues time="2014-08-24T12:00:00-04:00" MW="0" price="52.61"/>
```

```
            <HourlyValues time="2014-08-24T13:00:00-04:00" MW="0" price="55.27"/>
            <HourlyValues time="2014-08-24T14:00:00-04:00" MW="0" price="57.03"/>
            <HourlyValues time="2014-08-24T15:00:00-04:00" MW="0" price="57.14"/>
            <HourlyValues time="2014-08-24T16:00:00-04:00" MW="0" price="57.18"/>
            <HourlyValues time="2014-08-24T17:00:00-04:00" MW="0" price="55.1"/>
            <HourlyValues time="2014-08-24T18:00:00-04:00" MW="0" price="52.06"/>
            <HourlyValues time="2014-08-24T19:00:00-04:00" MW="0" price="48.8"/>
            <HourlyValues time="2014-08-24T20:00:00-04:00" MW="0" price="51.63"/>
            <HourlyValues time="2014-08-24T21:00:00-04:00" MW="0" price="42.16"/>
            <HourlyValues time="2014-08-24T22:00:00-04:00" MW="0" price="40.7"/>
            <HourlyValues time="2014-08-24T23:00:00-04:00" MW="0" price="40.36"/>
        </HourlyProfile>
    </ARDByParticipant>
</GetARDByParticipantResponse>
```

8. Public Tab

The Public Tab selection provides all market system users' access to displays showing general information from the cleared Day-Ahead Market for a selected market day. Selecting the Public tab will show all of the display sub tabs shown below.

The information that is shown on these public displays is available only after the Day-Ahead Market for the selected day is cleared. On each of the public displays, information for a 24-hour period is shown on two lines as shown below: the top line shows data for hours ending 01 through 12; the second line shows data for hours ending 13 through 24.

Day-Ahead Demand	01 / 13	02 / 14	03 / 15	04 / 16	05 / 17	06 / 18	07 / 19	08 / 20	09 / 21	10 / 22	11 / 23	12 / 24
	10347	9869	10078	9963	10085	10145	10408	11277	12153	12535	12635	12403
	12248	12082	11772	11622	11651	11831	12034	12335	12734	12129	11309	10331

8.1 System Summary Display

The System Summary display shows the hourly values of the following:

- Day-Ahead Demand – the total demand (net of all the demand bids) cleared in the Day-Ahead Market
- Day-Ahead Load Forecast – the ISO forecasted system load.
- Day-Ahead Operating Reserve Objectives – the system operating reserve requirements cleared in the Day-Ahead Market

8.2 Prices Display

This display shows the Day-Ahead Locational Marginal Prices (LMPs) at every pricing location (Pnode) that were calculated by the clearing of the Day-Ahead Market for every hour of the market day.

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8.3 Binding Constraints Display

This display shows all the transmission constraints that were applied and binding in the clearing of the Day-Ahead Market.

8.4 Reactive Interface Limits Display

This display shows the MW flow on each of the system interfaces along with the MW flow limit on the interface for each hour of the market day in the Day-Ahead Market clearing solution.

8.5 Net Tie Schedules Display

This display shows the scheduled MW flow on each of the ISO New England interfaces with its neighboring control areas as calculated in the clearing of the Day-Ahead Market.

8.6 Public XML Download Display

The XML Download Display is used to view the following public XML reports of data from the clearing of the Day-Ahead Market:

- Day-Ahead System Summary

- Day-Ahead Prices

- Day-Ahead Binding Constraints

- Day-Ahead Reactive Limits

- Day-Ahead Net Tie Schedules

The reports are available for download after the Day-Ahead Market results are posted and the Re-Offer Period for the Real-Time Market opens. The format of the XML files can be found in the eMarket Data Exchange Specification posted on the ISO-NE web site under ***Support -> Data Retrieval -> Upload/Download File Formats***.

See ***Section*** 4 for details on uploading and downloading files. The following sections provide samples of the downloaded reports.

8.6.1 DA System Summary XML Report

This report contains the information that you see on the System Summary display. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetSystemSummaryResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <SystemSummary day="2014-08-24">
        - <AreaSummary name="NEPEX">
            - <HourlyValues time="2014-08-24T00:00:00-04:00">
                <DemandBidMW>10347</DemandBidMW>
                <DemandForecastMW>10600</DemandForecastMW>
                <Reserve>0</Reserve>
                </HourlyValues>
            - <HourlyValues time="2014-08-24T01:00:00-04:00">
                <DemandBidMW>9869</DemandBidMW>
                <DemandForecastMW>10170</DemandForecastMW>
                <Reserve>0</Reserve>
```

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```
            </HourlyValues>
            .
            .
          - <HourlyValues time="2014-08-24T22:00:00-04:00">
                <DemandBidMW>11309</DemandBidMW>
                <DemandForecastMW>12040</DemandForecastMW>
                <Reserve>0</Reserve>
            </HourlyValues>
          - <HourlyValues time="2014-08-24T23:00:00-04:00">
                <DemandBidMW>10331</DemandBidMW>
                <DemandForecastMW>11110</DemandForecastMW>
                <Reserve>0</Reserve>
            </HourlyValues>
        </AreaSummary>
      </SystemSummary>
  </GetSystemSummaryResponse>
```

8.6.2 DA Prices XML Report

This is a large report. It contains the information that you see on the Prices display, specifically the hourly DA nodal LMPs at every public pricing node (Pnode) in the data model. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetPricesResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
   - <Prices day="2014-08-24">
      .
      .
      - <NodePrices ID="4000" name=".H.INTERNAL_HUB">
            <HourlyPrice time="2014-08-24T00:00:00-04:00" price="21.61" />
            <HourlyPrice time="2014-08-24T01:00:00-04:00" price="19.11" />
          .
          .
            <HourlyPrice time="2014-08-24T23:00:00-04:00" price="23.67" />
        </NodePrices>
      - <NodePrices ID="4001" name=".Z.MAINE">
            <HourlyPrice time="2014-08-24T00:00:00-04:00" price="21.02" />
            <HourlyPrice time="2014-08-24T01:00:00-04:00" price="18.67" />
          .
          .
            <HourlyPrice time="2014-08-24T23:00:00-04:00" price="23.17" />
        </NodePrices>
      .
      .
      - <NodePrices ID="39004" name="LD.VT_YK 115">
            <HourlyPrice time="2014-08-24T00:00:00-04:00" price="21.46" />
          .
          .
            <HourlyPrice time="2014-08-24T22:00:00-04:00" price="23.08" />
            <HourlyPrice time="2014-08-24T23:00:00-04:00" price="23.23" />
        </NodePrices>
      .
      .
    </Prices>
  </GetPricesResponse>
```

8.6.3 DA Binding Constraints XML Report

This report contains the information that you see on the Binding Constraints display. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetBindingLimitsResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <BindingLimits day="2014-08-24">
        - <BindingLimit>
            <BranchName>CONVERTRK42-3 A LN</BranchName>
            <ContingencyName>Actual</ContingencyName>
            - <HoursImpacted>
                <Hour>2014-08-24T00:00:00-04:00</Hour>
                <Hour>2014-08-24T03:00:00-04:00</Hour>
                <Hour>2014-08-24T05:00:00-04:00</Hour>
                <Hour>2014-08-24T06:00:00-04:00</Hour>
                <Hour>2014-08-24T23:00:00-04:00</Hour>
            </HoursImpacted>
        </BindingLimit>
        - <BindingLimit>
            <BranchName>CONVERTR_K42-3_A_LN</BranchName>
            <ContingencyName>Actual</ContingencyName>
            - <HoursImpacted>
                <Hour>2014-08-24T01:00:00-04:00</Hour>
                <Hour>2014-08-24T02:00:00-04:00</Hour>
            </HoursImpacted>
        </BindingLimit>
    </BindingLimits>
</GetBindingLimitsResponse>
```

8.6.4 DA Reactive Limits XML Report

This report contains the information that you see on the Reactive Interface Limits display. The following is a sample of the report.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetInterfaceLimitsResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <InterfaceLimits day="2014-08-24">
        - <InterfaceLimit>
            <Name>BSTN</Name>
            - <HourlyProfile>
                <HourlyValues time="2014-08-24T00:00:00-04:00" flow="1509" limit="99999" />
                <HourlyValues time="2014-08-24T01:00:00-04:00" flow="1571" limit="99999" />
                <HourlyValues time="2014-08-24T02:00:00-04:00" flow="1520" limit="99999" />
                .
                .
                <HourlyValues time="2014-08-24T22:00:00-04:00" flow="1528" limit="99999" />
                <HourlyValues time="2014-08-24T23:00:00-04:00" flow="1341" limit="99999" />
            </HourlyProfile>
        </InterfaceLimit>
        - <InterfaceLimit>
            <Name>MENH</Name>
            - <HourlyProfile>
                <HourlyValues time="2014-08-24T00:00:00-04:00" flow="13" limit="99999" />
                <HourlyValues time="2014-08-24T01:00:00-04:00" flow="-41" limit="99999" />
                .
                .
                <HourlyValues time="2014-08-24T22:00:00-04:00" flow="-96" limit="99999" />
                <HourlyValues time="2014-08-24T23:00:00-04:00" flow="-26" limit="99999" />
```

```
                    </HourlyProfile>
                </InterfaceLimit>
              - <InterfaceLimit>
                    <Name>MYS8-9</Name>
                  - <HourlyProfile>
                        <HourlyValues time="2014-08-24T00:00:00-04:00" flow="1297" limit="10000" />
                        <HourlyValues time="2014-08-24T01:00:00-04:00" flow="986" limit="10000" />

                        .
                        .
                        <HourlyValues time="2014-08-24T22:00:00-04:00" flow="1774" limit="10000" />
                        <HourlyValues time="2014-08-24T23:00:00-04:00" flow="1780" limit="10000" />
                    </HourlyProfile>
                </InterfaceLimit>
              - <InterfaceLimit>
                    <Name>NE_E-W</Name>
                  - <HourlyProfile>
                        <HourlyValues time="2014-08-24T00:00:00-04:00" flow="757" limit="99999" />
                        <HourlyValues time="2014-08-24T01:00:00-04:00" flow="557" limit="99999" />

                        .
                        .
                        <HourlyValues time="2014-08-24T22:00:00-04:00" flow="-136" limit="99999" />
                        <HourlyValues time="2014-08-24T23:00:00-04:00" flow="125" limit="99999" />
                    </HourlyProfile>
                </InterfaceLimit>
              - <InterfaceLimit>
                    <Name>NHME</Name>
                  - <HourlyProfile>
                        <HourlyValues time="2014-08-24T00:00:00-04:00" flow="-13" limit="99999" />
                        <HourlyValues time="2014-08-24T01:00:00-04:00" flow="41" limit="99999" />

                        .
                        .
                        <HourlyValues time="2014-08-24T22:00:00-04:00" flow="96" limit="99999" />
                        <HourlyValues time="2014-08-24T23:00:00-04:00" flow="26" limit="99999" />
                    </HourlyProfile>
                </InterfaceLimit>
            </InterfaceLimits>
        </GetInterfaceLimitsResponse>
```

8.6.5 DA Net Tie Schedules XML Report

This report contains the information that you see on the Net Tie Schedules display. The following is a sample of the report.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <GetNetTieSchedulesResponse xmlns="http://www.markets.iso-ne.com/MUI/eMkt/Messages">
    - <NetTieSchedules day="2014-08-24">
        - <NetTieSchedule area=".I.HQHIGATE120 2">
            <HourlyValue time="2014-08-24T00:00:00-04:00" MW="248" />
            <HourlyValue time="2014-08-24T01:00:00-04:00" MW="248" />
            .
            .
            <HourlyValue time="2014-08-24T22:00:00-04:00" MW="218" />
            <HourlyValue time="2014-08-24T23:00:00-04:00" MW="248" />
        </NetTieSchedule>
        - <NetTieSchedule area=".I.HQ_P1_P2345 5">
            <HourlyValue time="2014-08-24T00:00:00-04:00" MW="1023" />
            <HourlyValue time="2014-08-24T01:00:00-04:00" MW="1023" />
            .
            .
```

```xml
                    <HourlyValue time="2014-08-24T22:00:00-04:00" MW="0" />
                    <HourlyValue time="2014-08-24T23:00:00-04:00" MW="0" />
                </NetTieSchedule>
              - <NetTieSchedule area=".I.NRTHPORT138 5">
                    <HourlyValue time="2014-08-24T00:00:00-04:00" MW="-100" />
                    <HourlyValue time="2014-08-24T01:00:00-04:00" MW="-100" />
                    .
                    .
                    <HourlyValue time="2014-08-24T22:00:00-04:00" MW="-185" />
                    <HourlyValue time="2014-08-24T23:00:00-04:00" MW="-100" />
                </NetTieSchedule>
              - <NetTieSchedule area=".I.ROSETON 345 1">
                    <HourlyValue time="2014-08-24T00:00:00-04:00" MW="-23" />
                    <HourlyValue time="2014-08-24T01:00:00-04:00" MW="44" />
                    .
                    .
                    <HourlyValue time="2014-08-24T22:00:00-04:00" MW="278" />
                    <HourlyValue time="2014-08-24T23:00:00-04:00" MW="181" />
                </NetTieSchedule>
              - <NetTieSchedule area=".I.SALBRYNB345 1">
                    <HourlyValue time="2014-08-24T00:00:00-04:00" MW="293" />
                    <HourlyValue time="2014-08-24T01:00:00-04:00" MW="202" />
                    .
                    .
                    <HourlyValue time="2014-08-24T22:00:00-04:00" MW="293" />
                    <HourlyValue time="2014-08-24T23:00:00-04:00" MW="293" />
                </NetTieSchedule>
              - <NetTieSchedule area=".I.SHOREHAM138 99">
                    <HourlyValue time="2014-08-24T00:00:00-04:00" MW="-330" />
                    <HourlyValue time="2014-08-24T01:00:00-04:00" MW="-330" />
                    .
                    .
                    <HourlyValue time="2014-08-24T22:00:00-04:00" MW="-330" />
                    <HourlyValue time="2014-08-24T23:00:00-04:00" MW="-330" />
                </NetTieSchedule>
            </NetTieSchedules>
        </GetNetTieSchedulesResponse>
```

Appendix A. List of Fuel Index Names used by ISO-NE Market Monitoring

FUEL INDEX NAME	FUEL INDEX DESCRIPTION	Third Party Vendor
Coal_HS	Central Appalachia 2.0 12500 CSX quarter	Argus
Coal_LS	Central Appalachia 1.2 12500 CSX quarter	Argus
No6_030	Fuel oil No 6 0.3% low-pour NYH	Argus
No6_050	Fuel oil No 6 0.5% NYH	Argus/Internal Market Monitor
No6_070	Fuel oil No 6 0.7% NYH	Argus/Internal Market Monitor
No6_100	Fuel oil No 6 1% NYH	Argus
No6_300	Fuel oil No 6 3% NYH	Argus
LS_Jet_kero	Kerosene NYH barge fob prompt	Argus
Jet_fuel	Jet fuel NYH barge fob prompt	Argus
No2	Heating oil NYH barge fob prompt	Argus
ULSDiesel	Diesel ULSD NYH barge fob prompt	Argus
ULSKerosene	Kerosene ULSK NYH barge fob	Argus
Henry	Hub: Henry	Intercontinental Exchange
NY_natgas	Hub: Transco-Z6 (NY)	Intercontinental Exchange
CT_natgas	Hub: Iroquois-Z2	Intercontinental Exchange
MA_natgas1	Hub: Algonquin Citygates	Intercontinental Exchange
MA_natgas2	Hub: TGP-Z6 200L	Intercontinental Exchange
MA_natgas3	Hub: Dracut	Intercontinental Exchange
avg_MA_natgas	Average Massachusetts Index	Intercontinental Exchange/Internal Market Monitor
Tetco_M3	Hub: TETCO-M3	Intercontinental Exchange
Transco_Z6	Hub: Transco-Z6 (non-NY)	Intercontinental Exchange
Portland_gas	Hub: PNGTS	Intercontinental Exchange
Propane	Propane Gas	n/a
Refuse	Refuse	n/a
Nuclear	Nuclear	n/a
Wood	Wood	n/a
Wind	Wind	n/a
Bio_Mass	Bio Mass	n/a
Solar	Solar	n/a
Hydro_Pondage	Hydro_Pondage	n/a
Hydro_Pumped Storage	Hydro_Pumped Storage	n/a
Hydro_Run_of_River	Hydro_Run_of_River	n/a
Tire_Derived_Fuel	Tire_Derived_Fuel	n/a
Black_Liquor	Black_Liquor	n/a
Other_Biomass_Liquid	Other_Biomass_Liquids	n/a
Landfill_Gas	Landfill_Gas	n/a
Other_Biomass_Solids	Other_Biomass_Solids	n/a