Energy Market Offer Flexibility

Customer Training Webinar

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Disclaimer for Customer Training

ISO New England (ISO) provides training to enhance participant and stakeholder understanding.

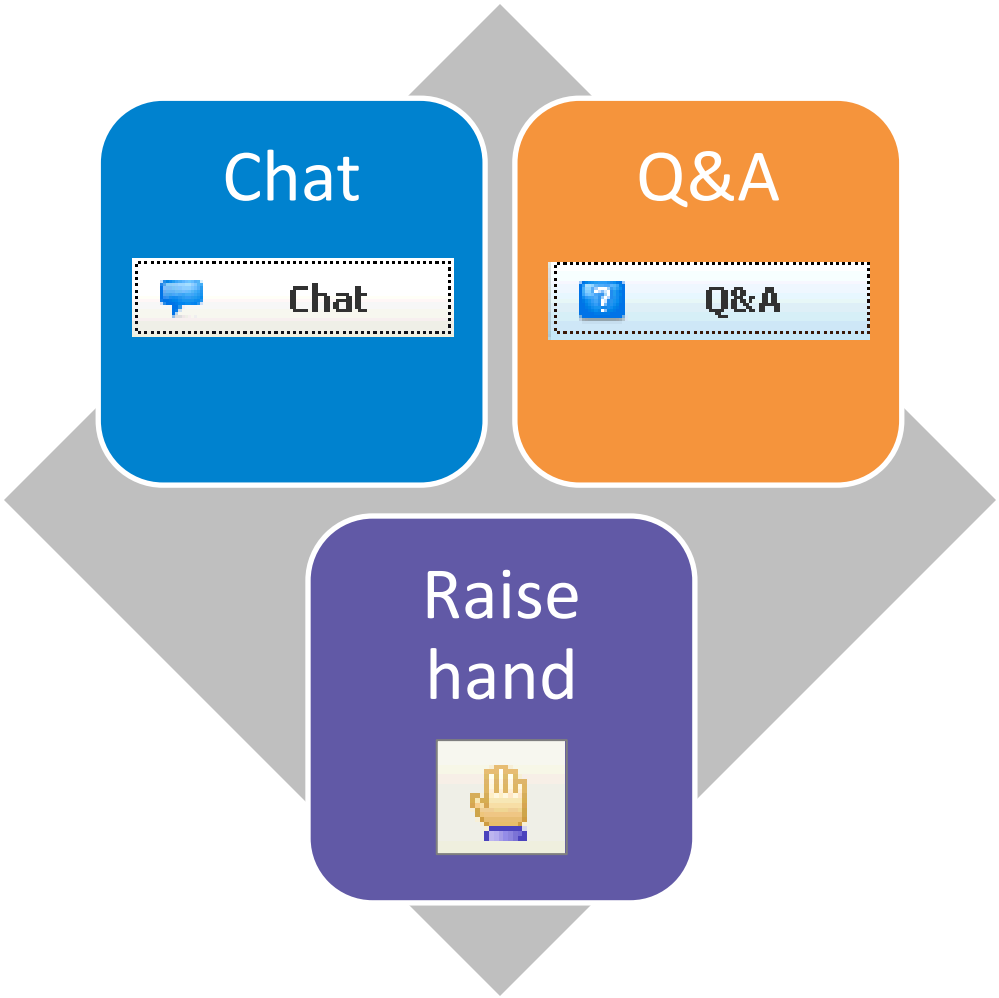
Because not all issues and requirements are addressed by the training, participants and other stakeholders should not rely solely on this training for information but should consult the effective *Transmission, Markets and Services Tariff* ("Tariff") and the relevant *Market Manuals*, *Operating Procedures* and *Planning Procedures* ("Procedures").

In case of a discrepancy between training provided by ISO and the Tariff or Procedures, the meaning of the Tariff and Procedures shall govern.

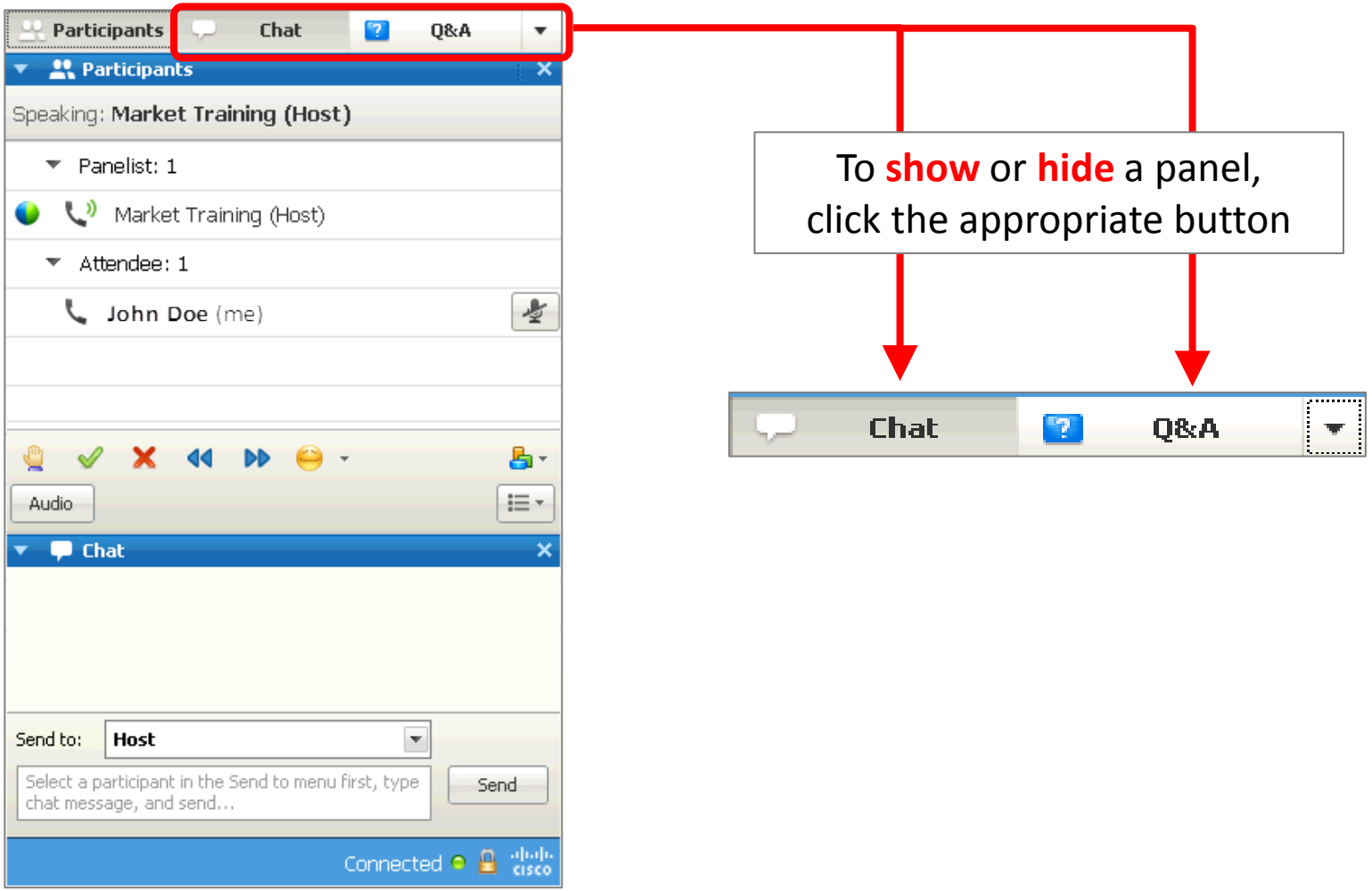
Before We Begin

- Presentation available on the ISO New England (ISO) website: Support > Training > Training Materials > Energy Market and Ancillary Services Topics
  - WebEx recording of this session will be posted to the location above within five business days
- Questions & Answers 
- Evaluation 

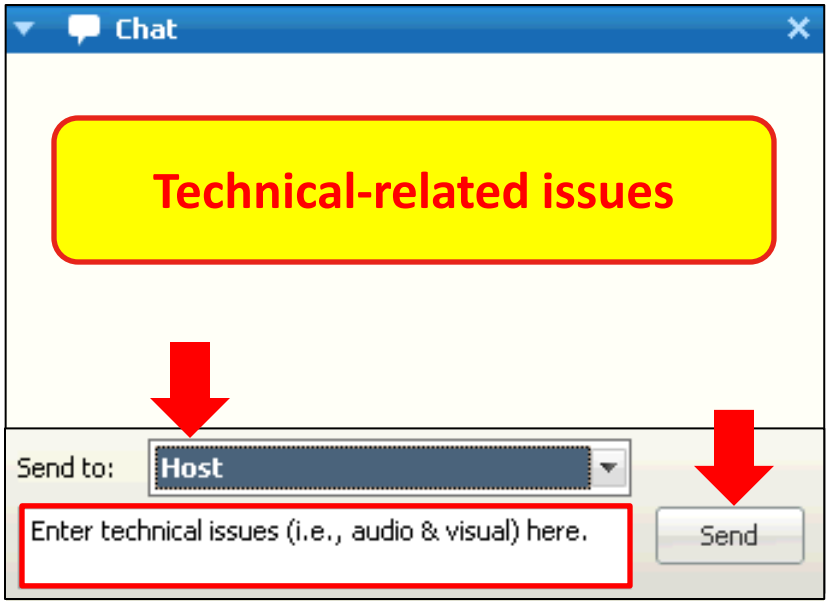
General WebEx Usage

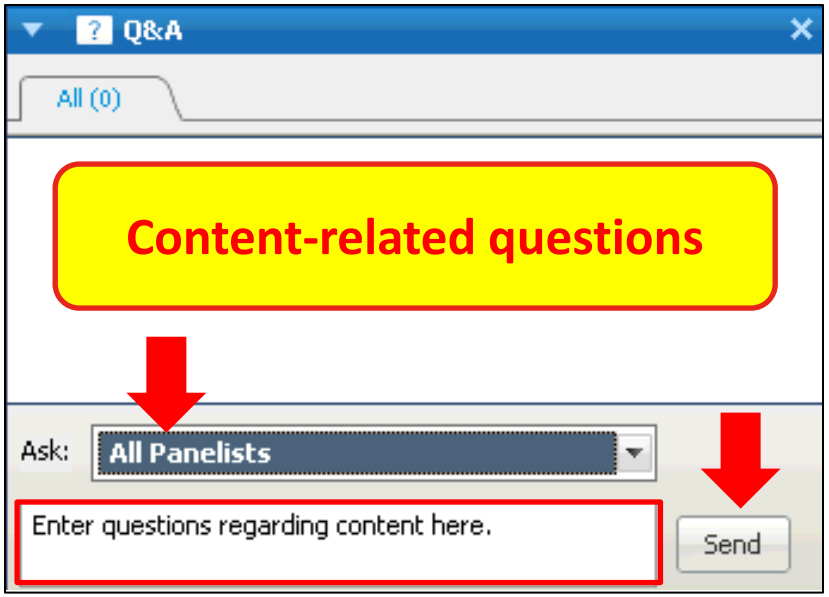


WebEx Default View Panel



Chat and Q&A Panel

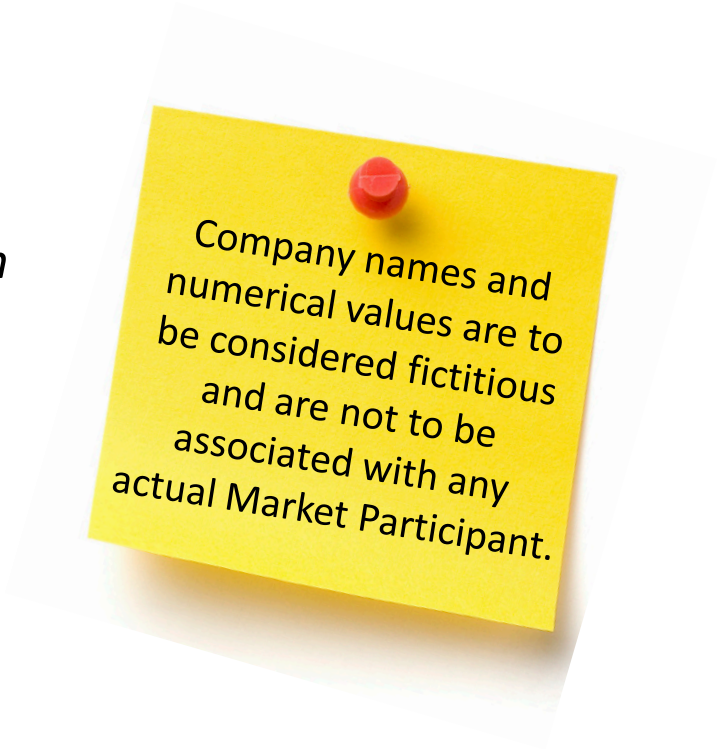




Session Details

Today's presenters:

- Kevin Seliga
  Manager, Market Administration
- Stephen George
  Supervisor, Operations Analysis and Integration
- Mario DePillis
  Economist, Market Monitoring



Course Goal

The purpose of this training is to present the concepts of the upcoming changes to the hourly market and provide market participants with a working knowledge of these changes.

Objectives

At the end of the training the attendees will be able to understand changes to the energy market related to the:

1) Ability to vary supply offers on a hourly basis
2) Ability to submit negative offer prices
3) Ability to update energy market offers in real time
4) Modified self-scheduling practices
5) Market monitoring mitigation processes

Topics Covered

- Overview of hourly market changes
- Submitting hourly market offers
- Real-time reoffers, self-scheduling, and redeclarations
- Market monitoring mitigation

OVERVIEW OF HOURLY MARKET CHANGES

Kevin Seliga
Manager, Market Administration

Outline

- ISO New England (ISO) is making the following changes to the energy market:
  - Vary supply offer values on an hourly granularity
  - Ability to update offers in real time
  - Allow the ability to submit negative offers
  - Change the current self-scheduling practice
- Sandbox environment with these changes is located at: https://sandboxsmd.iso-ne.com/

Vary Supply Offer Values on an Hourly Granularity

- Market participants will be able to submit cost-related offer parameters that vary by hour.
- Providing market participants the ability to submit offers that vary by hour will better ensure that market results, market participants' financial incentives and the requirement for resources to follow dispatch instructions are aligned.

Ability to Update Offers in Real Time

- Market participants will be able to change the cost-related parameters of their offers up until 30 minutes prior to the hour in which the offer would apply.
- The ability of market participants to change offers in real time to reflect the real-time price of fuel or other operating costs means that the energy market dispatch will be more efficient.

Allow the Ability to Submit Negative Offers

- The energy offer floor price for hourly markets will be negative $150/MWh (-$150/MWh).
- The new energy offer floor price will allow market participants to submit offers that better reflect the full range of prices at which different types of resources become uneconomic.
- Lowering the energy offer floor will allow resource output to be set through an economic dispatch process.

Change the Current Self-Scheduling Practice

- The economic minimum limit definition has changed for hourly markets. Summarized, the economic minimum limit will indicate the maximum of the following values:
  - Lowest output level as specified by design, environmental regulations, or licensing limits
  - Lowest output level at which a one increment increase in the output level would not decrease the incremental cost
  - Requested level of operation for resources undergoing *Facility and Equipment Testing* or *auditing*
  - Requested level of operation for non-dispatchable resources
- The economic minimum limit will not normally be modified to achieve a certain minimum desired output for self-scheduling purposes.
  - There are exceptions for non-dispatchable generators and generators undergoing testing or auditing.

Questions

SUBMITTING HOURLY MARKET OFFERS

Kevin Seliga
Manager, Market Administration

eMarket Changes to Submitting Offers

Specific Change	Details
Ability to submit hourly offers	Participants will have an opportunity to submit certain parameters with hourly granularity in the Day-Ahead and Real-Time Energy Markets
Ability to update offers in real time	Participants will be allowed to update certain parameters of their supply offer prior to and during the operating day
Ability to submit negative offers	Energy offer floor set to negative $150/MWh (-$150/MWh)

Parameters with Hourly Granularity

Generators

Parameter Name	Unit	Current Granularity	Future Granularity
Incremental Offer (Price/MW pairs)	$/MWh, MW	Daily	Hourly
No-Load Fee	$/hr	Daily	Hourly
Cold, Intermediate, Hot Start-Up Fee	$/start	Daily	Hourly
Use Offer Slope, Use Start-Up No-Load	Select	Daily	Hourly
Cold, Intermediate, Hot Notification Time	hh:mm	Daily	Hourly
Cold, Intermediate, Hot Start-Up Time	hh:mm	Daily	Hourly
Ramp Rate or Ramp Rate/MW pairs	MW/min	Daily	Hourly
Offered Claim 10	MW	Daily	Hourly
Offered Claim 30	MW	Daily	Hourly
Regulation Offer	$/MW	Daily	Hourly
Regulation Ramp Rate (ARR)	MW/min	Daily	Hourly

Parameters with Hourly Granularity

Dispatchable Asset Related Demand (DARD)

Parameter Name	Unit	Current Granularity	Future Granularity
Incremental Offer (Price/MW pairs)	$/MWh, MW	Daily	Hourly
Use Offer Slope	Select	Daily	Hourly
Ramp Rate or Ramp Rate/MW pairs	MW/min	Daily	Hourly

Bidding Parameters *Without* Change

Parameter Name	Current Granularity	Future Granularity
Resource Status ▪ Must Run ▪ Economic ▪ Unavailable	Hourly	Hourly
Resource Limits ▪ Emergency Minimum Limit ▪ Economic Minimum Limit ▪ Economic Maximum Limit ▪ Real-Time High Operating Limit	Hourly	Hourly
Resource Characteristics ▪ Hot to Cold ▪ Hot to Intermediate ▪ Minimum Down Time ▪ Minimum Run Time	Daily	Daily
DARD Status ▪ Must Run ▪ Economic ▪ Unavailable	Hourly	Hourly
DARD Limits ▪ Maximum Consumption ▪ Minimum Consumption	Hourly	Hourly

Bids and Offers Timeline for Operating Day (OD)

Market Activity	Current Bidding Timeline	Hourly Markets Timeline
DAM bidding window close	10:00 on OD -1	10:00 on OD -1
DAM results published	Between 12:00 and 13:30 on OD -1	Between 12:00 and 13:30 on OD -1
Re-offer period opens	After DAM results published	After DAM results published
RAA process	14:00 to 17:00 on OD -1	14:00 to 17:00 on OD -1
Bidding window opens for OD +1 and beyond	17:00 to 20:00 on OD -1	**18:30 to midnight on OD -1**
Intraday real time re-offer period	**N/A**	**From 18:30 on OD -1 to 22:30 on OD**

Energy Market Offer Flexibility

Commitment Decisions

- A commitment decision is an agreement between the ISO and the market participant for a unit to be online for a specified time period.
- A commitment decision specifies the start and end hours for the unit commitment and the supply offer data in effect at the time of commitment.
- Net Commitment Period Compensation (NCPC) is based on the supply offer prices that were in effect when the commitment decision was made.
- A commitment decision can be initiated by either the market participant or the ISO.

Questions

REAL-TIME OPERATIONS

Stephen George
Supervisor, Operations Analysis and Integration

Real-Time Operations

- Intraday reoffer capability
- Self-scheduling
- Real-time redeclarations

INTRADAY REOFFER CAPABILITY

Intraday Reoffer Capability

Market participants may reoffer **supply offer** parameters on an hour-to-hour basis through eMarket.

Market Activity	Timeline	Description of Reoffer Capability
After completion of initial RAA	18:30	Reoffer capability available for next operating day
Operating day	30 minutes prior to effective hour	Reoffer capability available

Intraday Reoffer Capability

Generator and Demand

Generator

- Price/MW pairs *($/MWh)*
- Start-up cost* *($/start)*
- No-load cost* *($/hr)*
- Fuel type
  (dual fuel resources only)
- Use offer slope *(select)*
- Use start-up no-load flag *(select)*

Demand

- Price/MW pairs *($/MWh)*
- Use offer slope *(select)*

**subject to fuel price adjustment, detail to follow in IMM presentation*

SELF-SCHEDULING

Real-Time and Day-Ahead

Economic Minimum Limit

- Current practice is to modify a generator's EcoMin limit to reflect desired MW output.
  - This is used for both dispatchable and non-dispatchable generators
  - Dispatchable: a resource that has Electronic Dispatch capability (an RTU) that is available to be dispatched by the ISO based on hourly offers and operating limits
- Under offer flexibility rules the EcoMin limit will **not** normally be modified to reflect a generator's desired MW output, unless:
  - Generator is non-dispatchable
  - Generator is undergoing Facility and Equipment Testing, or Auditing.
    - During periods of testing and auditing, even normally dispatchable generators become non-dispatchable as they attempt to follow a set schedule or testing plan
- Upcoming slides will discuss how to achieve desired MW output without changing EcoMin

Day-Ahead Self-Scheduling

In the day-ahead market, a market participant may self-schedule a generator or DARD by selecting the Must Run flag for the hour(s) of the desired self-schedule.

- A non-dispatchable generator may modify its EcoMin limit hourly to achieve the desired level of self-schedule operation.
- A dispatchable generator should utilize its hourly energy offer to achieve its desired output.
  - A dispatchable generator should no longer modify its economic minimum limit for self-scheduling purposes.
  - Modification of EcoMin limits for dispatchable resources should only occur during times of *Facility and Equipment testing* or *auditing*.

Real-Time Self-Scheduling

During the operating day, a market participant may request to self-schedule a generator asset or dispatchable asset related demand (DARD).

- Self-schedule is an action taken by a market participant to commit or schedule a:
  - Generator asset at its economic minimum
  - DARD at its minimum consumption
- Real-time self-schedule requests are made via phone call to the ISO Control Room.
- Request will be honored if it does not cause or worsen a reliability constraint.
- If ISO honors a self-schedule request:
  - Generator will be permitted to come online at its economic minimum.
  - DARD will be permitted to come online at its minimum consumption.

Real-Time Self-Scheduling

- As previously discussed, economic minimum will only be modified under a few scenarios.
- Desired operation at a MW level above economic minimum or minimum consumption can be achieved by dispatchable generators or DARDs utilizing intraday reoffer capability to modify energy offers to achieve desired MW output.
  - ISO Unit Dispatch Software (UDS) dispatches based on economics of dispatchable resource's incremental supply offers.
  - Recall limitations on when intraday reoffers must be in place:
    - 30 minutes prior to hour in which they are to take effect.

Missing the Real-Time Reoffer Deadline

Self-Dispatch MW

If the reoffer deadline has passed (30 minutes prior to effective hour), the ISO will allow market participants to request a self-scheduled MW quantity and an effective time.

This is only available in hours for which the reoffer deadline has passed.
For example, at 13:35 a self-dispatch MW quantity request can only be made for HE14 and HE15.

- ISO operators will refer to these requests as "self-dispatch MW."
- Self-dispatch MW requests are made via phone call to the ISO Control Room.
- Request will be honored if it does not cause or worsen a reliability constraint.
- If ISO honors a self-dispatch MW request, the generator will be dispatched as if it had offered the specified output for the hour in question at the energy offer floor price (-$150/MW).

Self-Dispatch MW Example

Initial Conditions

MW Blocks	Energy Offer Prices and Parameters by Hour	
	HE08	HE09
300 MW	$30	$30
250 MW	$25	$25
200 MW	$22	$22
100 MW	$20	$20
Self-Scheduled (Y/N)	N	N
Self-Dispatch MW	n/a	n/a
Ecomin (MW)	50	50
Ecomax (MW)	300	300

Self-Dispatch MW Example

07:35 – Generator Requests to Self-Dispatch at 200 MW for HE08 and 09

MW Blocks	Energy Offer Prices and Parameters by Hour	
	HE08	HE09
300 MW	$30	$30
250 MW	$25	$25
200 MW	$22	$22
100 MW	$20	$20
Self-Scheduled (Y/N)	Y	Y
Self-Dispatch MW	200	200
Ecomin (MW)	50	50
Ecomax (MW)	300	300

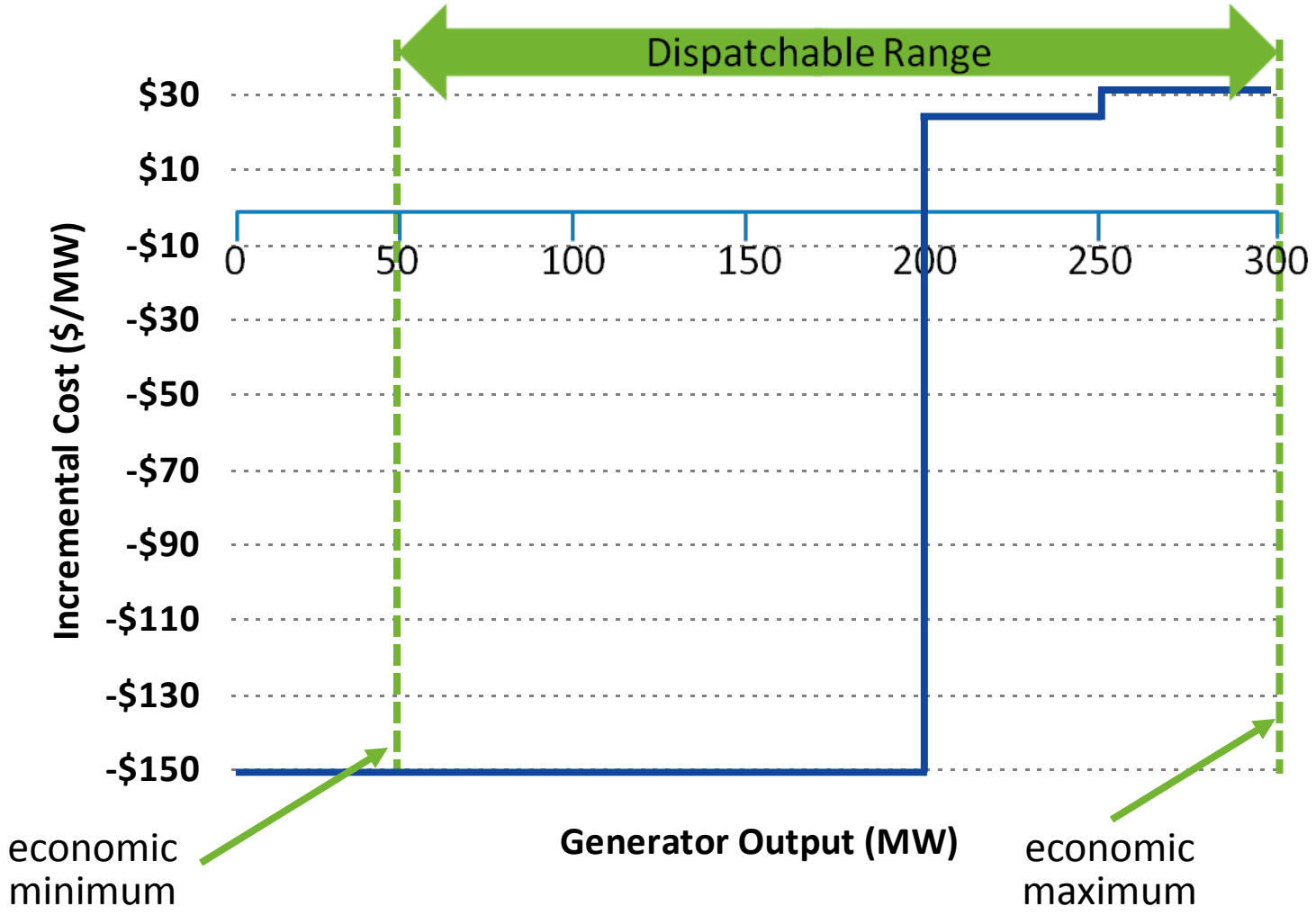
Self-Dispatch MW Example

MW Blocks up to 200 MW Considered in Dispatch as if Offered at -$150/MW

MW Blocks	Energy Offer Prices and Parameters by Hour	
	HE08	HE09
300 MW	$30	$30
250 MW	$25	$25
200 MW	$-150	$-150
100 MW	$-150	$-150
Self-Scheduled (Y/N)	Y	Y
Self-Dispatch MW	200	200
Ecomin (MW)	50	50
Ecomax (MW)	300	300

Self-Dispatch MW Example

Graphical Depiction



Real-Time Redeclarations

- In addition to intraday reoffers, ISO will continue to allow participants to provide real time updates of changes to the physical capability of a resource.
- Real-time redeclaration requests are made via phone call to the ISO Control Room.

Real-Time Redeclarations

Generator

Parameter Name	Unit	Current Granularity	Future Granularity
Resource Status	Available, self-scheduled, and out of service	Hourly/Redeclarable	Hourly/Redeclarable
Real-Time High Operating Limit	MW	Hourly/Redeclarable	Hourly/Redeclarable
Economic Maximum	MW	Hourly/Redeclarable	Hourly/Redeclarable
Economic Minimum	MW	Hourly/Redeclarable	Hourly/Redeclarable
Emergency Minimum	MW	Hourly/Redeclarable	Hourly/Redeclarable
Regulation High/Low	MW	Hourly/Redeclarable	Hourly/Redeclarable
Maximum Daily Energy	MWh	Daily	Daily
LEG Limit	MW	Hourly/Redeclarable	Hourly/Redeclarable

Real-Time Redeclarations

Generator

Parameter Name	Unit	Current Granularity	Future Granularity
Manual Response Rate (MRR)	MW/Min	Daily/Redeclarable	Hourly/Redeclarable (multiple MRRs, if applicable)
Automatic Ramp Rate (ARR)	MW/Min	Daily/Redeclarable	Hourly/Redeclarable
Claim 10/Claim 30	MW	Daily/Redeclarable	Hourly/Redeclarable
Notification Time (Hot, Int, Cold)	Hh:mm	Daily	Hourly/Redeclarable
Start-up Time (Hot, Int, Cold)	Hh:mm	Daily	Hourly/Redeclarable
Hot to Cold, Hot to Int Time	Hh:mm	Daily	Daily/Redeclarable
Minimum Down Time	Hh:mm	Daily	Daily/Redeclarable
Minimum Run Time	Hh:mm	Daily	Daily/Redeclarable
 Self-Dispatch MW	MW	n/a	Hourly/Redeclarable

Real-Time Redeclaration

DARD

Parameter Name	Unit	Current Granularity	FutureGranularity
Resource Status	Available, self-scheduled, and out of service	Hourly/Redeclarable	Hourly/Redeclarable
Minimum Consumption	MW	Hourly/Redeclarable	Hourly/Redeclarable
Maximum Consumption	MW	Hourly/Redeclarable	Hourly/Redeclarable
Manual Response Rate (MRR)	MW/Min	Daily/Redeclarable	Hourly/Redeclarable *(multiple MRRs, if applicable)*
Claim 10/Claim 30	MW	Daily/Redeclarable	Hourly/Redeclarable

Indicates change

Questions

MARKET MONITORING & MITIGATION

Mario DePillis
Economist, Internal Market Monitor

Topics

Mitigation Changes

- Summary of rule changes
- Mitigation details
- Fuel Price Adjustments (FPA) and reference levels

Appendix A

Rule Changes – Hourly Characteristics of Mitigation

- Reference levels will be hourly, not daily.
- Energy mitigation duration shortened
  - Day-ahead market: hourly
  - Real-time market: initial hour plus one hour with no structural market power
- Hourly participant-submitted fuel price adjustments
  - Fuel price adjustment must exceed max [1.1 x fuel price index, $2.50/MMbtu] to avoid “noise.”
  - ISO sets threshold for automatic acceptance.
  - Documentation is required of *expected* fuel cost.
  - Offer must be within 10% of reference level.

Appendix A

Rule Changes – Deleted Mitigation

General threshold mitigation will no longer apply in Day-Ahead Energy Market.

- General threshold mitigation requires pivotal supplier status.
- No general threshold commitment mitigation will apply.
- No general threshold energy mitigation will apply.

Appendix A

Rule Changes – New Types of Mitigation and Offer Limits

- Manual dispatch energy mitigation
  - Resource is dispatched above economic minimum out of merit order for reliability
  - 10% threshold applied to energy blocks
- eMarket will enforce start-up (cold, intermittent, hot) and no-load offer limits.
  - Start-up and no-load offers greater than three times reference level are rejected
  - Start-up and no-load offers in the system greater than three times will result in mitigation upon commitment.
- Start-up and no-load reoffers that are increased in real time are limited to fuel price adjustment increases
  - No FPA, no increase in start-up or no-load beyond reoffer
    - Unless increase remains below reference level

Appendix A

Rule Changes – Commitment Mitigation

- Commitment mitigation
  - Commitment conduct tests will be based on hourly supply offers and reference level parameters: start-up, no-load, and energy at economic minimum.
  - All commitment mitigation tests will be based on Low Load Cost (LLC).
- LLC is currently used in local reliability commitment mitigation.
- Conceptually, the cost of running at economic minimum for commitment period may be more than minimum run time.

TWO NEW MITIGATION TYPES

Manual Dispatch Energy & Start-Up and No-Load Fee

Manual Dispatch Energy Mitigation

Three conditions required:

1. Resources dispatched manually by operators
   - Slower resources
   - Operators anticipating events not foreseen by dispatch software
   - Unusual circumstance
2. Dispatch point is above economic minimum.
3. Offer exceeds Locational Marginal Pricing (LMP).

Threshold is 10% for all energy blocks.

- Initial implementation will be mitigation in settlement.

Start-Up and No-Load Fee Mitigation

Start-up and no-load fees subject to offer limit

$$\frac{\text{Start-Up Fee}}{\text{Start-Up Reference Level}} \leq 3 \qquad \frac{\text{No-Load Fee}}{\text{No-Load Reference Level}} \leq 3$$

Mitigation limited to cases of stale offers

Example:

- Start-up fee submitted when gas is $30/mmBTU
- No adjustment made for two months
- Current gas cost is $5/mmBTU.
- Ratio has increased dramatically, but offer is already in ISO systems.

CHANGES TO COMMITMENT MITIGATION

Commitment Mitigation Overview

- Currently only “Local Reliability Commitment Mitigation” uses the LLC concept.
- Under new rules, all commitment mitigation types will be based on the LLC ratio.

Different types of commitment mitigation will differ by threshold level and trigger.	
General Threshold Commitment Mitigation	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 3.00$
Constrained Area Commitment Mitigation	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 1.25$
Reliability Commitment Mitigation	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 1.10$

Example of Low Load Cost

RAA/SCRA Snapshot:	HE 06:00	HE 07:00	HE 08:00	HE 09:00	HE 10:00	HE 11:00	HE 12:00	HE 13:00	HE 14:00	HE 15:00	HE 16:00	HE 17:00
Commitment		Commitment										
Start-up cost ($)		$100	$90	$120	$120	$120	$120	$120	$120	$120		
No-load cost ($)		$10	$10	$10	$10	$10	$10	$10	$10	$10		
Inc cost [0 -> Min] ($/MW)		$20	$20	$20	$20	$20	$20	$20	$20	$20		
Inc cost [Min -> Max] ($/MW)		$40	$40	$40	$40	$40	$40	$40	$40	$40		

- Commitment decision issued at 18:00 Day -1
- 1 MW economic minimum

Low Load Cost for Example

LLC from Commitment Decision at 18:00 Day-1 =

$\text{Start-up}_{HE7} + \text{No-Load}_{HE7} + \text{No-Load}_{HE8} + .. + \text{No-Load}_{HE15} + \text{Energy}_{HE7} + \ldots + \text{Energy}_{HE15}$

= \$100 + (9 hours x \$10/hour) + (9 hours x \$20/MWh)

= \$370

Same calculation for LLC based on reference level

LLC Test Ratio = $\text{LLC}_{\text{Offer}}$ / $\text{LLC}_{\text{Reference}}$

All commitment mitigation tests will use this ratio.

Second Consecutive Commitment

RAA/SCRA Snapshot:	HE 06:00	HE 07:00	HE 08:00	HE 09:00	HE 10:00	HE 11:00	HE 12:00	HE 13:00	HE 14:00	HE 15:00	HE 16:00	HE 17:00
Commitment		1st Commitment									2nd	
Start-up cost ($)		$100	$90	$120	$120	$120	$120	$120	$120	$120	$120	
No-load cost ($)		$10	$10	$10	$10	$10	$10	$10	$10	$10	$12	
Inc cost [0 -> Min] ($/MW)		$20	$20	$20	$20	$20	$20	$20	$20	$20	$22	
Inc cost [Min -> Max] ($/MW)		$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	

- Example of resource kept on-line for reliability reasons in HE 16
- Consecutive commitment does not incur start-up cost

Low Load Cost for 2nd Consecutive Commitment

LLC from 2nd Consecutive Commitment =

$No\text{-}Load_{HE16} + Energy_{HE16}$

= 1 hour x \$12/hour + 1 hours x \$22/MWh

= \$34

Start-up cost is not incurred and is not in LLC calculation.

Summary of Mitigation Tests

Mitigation Type	Day-Ahead	Real-Time	Conduct Threshold
Start-Up Fee and No-Load Fee Mitigation	✓	✓	$\frac{\text{Offer}_{\text{Parameter}}}{\text{Reference}_{\text{Parameter}}} > 3.00$
Reliability Commitment Mitigation	✓	✓	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 1.10$
General Threshold Energy Mitigation	✗	✓	$\frac{\text{Energy Offer}_{\text{Segment}}}{\text{Energy Reference}_{\text{Segment}}} > \min(300\%, \$100/\text{MWh})$
Constrained Area Energy Mitigation	✓	✓	$\frac{\text{Energy Offer}_{\text{Segment}}}{\text{Energy Reference}_{\text{Segment}}} > \min(50\%, \$25/\text{MWh})$
Constrained Area Commitment Mitigation		✓	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 1.25$
General Threshold Commitment Mitigation	✗	✓	$\frac{\text{Low Load Cost}_{\text{Offer}}}{\text{Low Load Cost}_{\text{Reference}}} > 3.00$
Manual Dispatch Mitigation		✓	$\frac{\text{Energy Offer}_{\text{Segment}}}{\text{Energy Reference}_{\text{Segment}}} > 1.10$

FUEL PRICE ADJUSTMENTS AND REFERENCE LEVELS

Hourly Fuel Prices and Hourly Fuel Types

- **Synchronize reference levels with the natural gas day.**
  Default reference levels using published gas indices would start and stop at 10 AM.
- **Participants submit fuel type and blend.**
  Participants will select their current fuel type and fuel blend.
  - Reference levels will use submitted fuel type.
  - Selection of higher cost fuel requires after-the-fact documentation.

Fuel Price Adjustments: Initial Submission

- **Participant submits FPAs**
  Participants will be able to submit their own fuel prices for calculation of new reference levels.
- **Expected cost; not actual cost**
  - Offers are based on expected cost of fuel.
  - Designed to avoid 20/20 hindsight
  - Documentation should capture current conditions
    - *For example,* screen shots, text messages of quotes
  - Documentation may include models and "rules of thumb," if agreed in advance with Internal Market Monitoring (IMM).
    - *For example*, overnight offer is based on index + x%.

Fuel Price Adjustments: Acceptance

- **Automatic acceptance of participant-submitted FPA is only within predetermined bandwidth**
  - IMM estimates bandwidth of reasonable trading prices.
  - Fuel bandwidth depends on daily weather (heating degree days), recent trades, and other information.
  - IMM has the ability to raise bandwidth during unusual trading conditions.
- **Consultation still available if bandwidth is too narrow.**
  - Participants are likely to have superior trading and price information.
  - Consultation can result in increased bandwidth for single resource or all resources on a pipeline.
  - IMM availability is 8:00 to 17:00, seven days a week.

Fuel Price Adjustment: Obligations

- **Submission of FPA requires:**
  - Offers within 10% of FPA stated **"expected cost."**
  - FPA must be documented and is subject to audit.
  - Documentation of expected cost should be within 10% of FPA.
- **Failure to meet requirements results in resource being excluded from participant-submitted FPA.**

First Offense *within rolling 12 months*	**Second Offense** *within rolling 12 months*
Two month exclusion	Six month exclusion

Intraday Reference Level Calculations After FPA or Offer Change

- During the operating day, reference levels will be recalculated and displayed within approximately five minutes after submission of an FPA or change to supply offer.
- FPA submissions will trigger use of cost-based reference levels.
  - Enables the five-minute response
- Supply offer changes during the operating day will trigger use of cost-based reference levels.
  - Enables the five-minute response

Questions

Customer Support

- Ask ISO
  - Self-service interface for submitting inquiries
  - Accessible through the SMD Applications Homepage
  - Requires a valid digital certificate with the role of Ask ISO/External User
  - Contact your security administrator for assistance
- Phone: (413) 540-4220
  - Monday through Friday, 8:00 A.M. to 5:00 P.M. Eastern Time
  - Recorded/monitored conversations
- Email: custserv@iso-ne.com
- Pager: (877) 226-4814
  - Outside of the regular business hours, Customer Support can be reached for emergency inquiries by pager.

Evaluations