memo

To: Markets Committee

From: Internal Market Monitor

Date: July 28, 2015

Subject: Monitoring of Forward Reserve Resources

ISO New England's July 21, 2015 memorandum regarding the change to the Forward Reserve Heat Rate prompted the Internal Market Monitor ("IMM") to assess the types of resources likely to participate in the Winter 2015-16 Forward Reserve Auction for the Forward Reserve Procurement Period, October 1, 2015 through May 31, 2016, and consider the impact energy market mitigation may have on Forward Reserve Market participation.

Market Participants with Forward Reserve Resources are subject to Forward Reserve Failure-to-Activate and Forward Reserve Failure-to-Reserve penalties.[1] Penalties can occur for several reasons, including:

- Not assigning enough MWs to cover a Forward Reserve Obligation,
- Not offering sufficient MWs at or above the Forward Reserve Threshold Price,
- Not offering a Forward Reserve Resource as a fast start unit,
- Not offering an economic or self-scheduled Forward Reserve Resource as dispatchable (i.e., the difference between a Forward Reserve Resource's Economic Maximum Limit and Economic Minimum Limit is less than the assigned MWs),
- Not offering an offline Forward Reserve Resource with an Economic Maximum Limit or Claim 10/30 capability equal to or greater than the Forward Reserve Assigned Megawatts,
- Offering the Forward Reserve Resource as unavailable,
- The Forward Reserve Resource becomes unavailable, or
- Not responding to dispatch instructions when required to provide reserves.

[1] ISO New England Transmission, Markets and Services Tariff ("ISO tariff"), Section III.9.7.

Given the factors described above, Market Participants can anticipate incurring penalties for their Forward Reserve Resources and price that risk in their Forward Reserve Auction Offers. The IMM has considered the impact energy market mitigation can have on participation in the Forward Reserve Market and has concluded that, generally, it is appropriate to apply energy market mitigation to a Supply Offer for a Forward Reserve Resource if mitigation is warranted pursuant to Section III.A.5 of the ISO tariff. The risk of a Forward Reserve Failure-to-Reserve penalty resulting from energy market mitigation can be factored into the Market Participant's Forward Reserve Auction Offer. The risk of incurring a Forward Reserve Failure-to-Reserve penalty due to energy market mitigation is similar to the risk of incurring a Forward Reserve Failure-to-Reserve penalty due to non-energy market mitigation factors, such as a Forward Reserve Resource becoming unavailable in real-time. Monetizing the risk of incurring a Forward Reserve Failure-to-Reserve penalty, whether due to mitigation or non-mitigation (e.g. availability) of the resource, in a Forward Reserve Auction Offer can be approached in a similar fashion.

Not mitigating a Forward Reserve Resource's energy market offer, when the resource otherwise should be mitigated, creates the opportunity for participants to exercise market power. This is the result of several factors. Under the current Forward Reserve Market structure, a participant can assign only a portion of its resource to satisfy a Forward Reserve Obligation. However, energy market mitigation is applied (or not applied) to the resource's entire offer curve,[2] creating the opportunity for a participant to limit Forward Reserve assignments to only portions of a resource while avoiding mitigation for the entire resource. It is not possible within the ISO systems or allowed under the ISO tariff to separate, for mitigation purposes, the energy offer segments that support a Forward Reserve Obligation from the energy offer segments that are not supporting an obligation. This problem is exacerbated as participants with a Forward Reserve Obligation have the ability to designate multiple resources as available to support the obligation, thereby allowing the participant to avoid energy market mitigation for a broad range of resources. Furthermore, participants in the Forward Reserve Market are not restricted to submitting energy market offers at the Forward Reserve Threshold Price, but are free to offer at prices up to the $1000/MWh supply offer cap.

The IMM is aware that some Market Participants may not have incorporated all the penalty risks described above into their Forward Reserve Auction Offers supporting the current Forward Reserve Procurement Period (Summer 2015). The IMM expects that participants will do so for the winter 2015-16 Forward Reserve Procurement Period, and will treat participants accordingly in evaluating Forward Reserve Resource Supply Offers for energy market mitigation.

Participants are reminded that they can consult with the IMM regarding the physical and financial parameters used to determine Reference Levels for their units, and may continue to consult with the IMM if the participant believes mitigation should not be applied to a Forward Reserve Resource. Given the ability to factor the risk of a Forward Reserve Failure-to-Reserve penalty resulting from mitigation into the participant's Forward Reserve Auction Offer, not mitigating an energy market Supply Offer for a Forward Reserve Resource, when the offers would otherwise be mitigated, will be appropriate only under the rare and extraordinary circumstance when the risk of a penalty cannot be anticipated at the time Forward Reserve Auction Offers must be submitted. Any questions related to a resource's Reference Level calculations should be addressed to the IMM at imm@iso-ne.com.

[2] For example, Section III.A.5.5.2.4 states "If a Supply Offer fails the constrained area conduct and impact tests, then the financial parameters of the Supply Offer shall be set to their Reference Levels, including all energy offer blocks and all types of Start-Up Fees and the No-Load Fee."