

# Enhanced Scarcity Pricing



**Matthew Musto**

*Project Manager – Ops and Reliability Products  
New York Independent System Operator*

**Management Committee (MC)**

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# Agenda

- ◆ **Review of the current solution.**
- ◆ **Proposed enhancements.**
- ◆ **Next Steps.**

# Current Process Review

- ◆ **Step 1 Activation** – Operations identifies the reliability need and activates EDRP / SCR. After a 21 hour-ahead notice, a real-time activation notice is issued, typically with 2 hours notice.
- ◆ **Step 2 Estimated Load Reductions** – The estimated load reductions are entered into MIS prior to the event start time.
  - *East and NYCA scarcity pricing curves built based upon registration data and Zones activated.*

# Current Process Review Cont.

- ◆ **Step 3 Reserve Shortage Check** – Each interval, as per MST Attachment B Section 17.1.2, is checked to determine if reserves would have been insufficient but for the EDRP/SCR load reductions.
  - If Available Reserves – [EDRP/SCR + reserve req.] < 0 then scarcity pricing applies.
  - Available Reserves as defined in the MST Section 2 are ‘the capability of all Suppliers that submit Incremental Energy Bids to provide Spinning Reserves, Non-Synchronized 10-Minute Reserves, and 30-Minute Reserves in that interval and in the relevant location, and the quantity of recallable External ICAP Energy sales in that interval’.
  - For NYCA, consider requirement for total 30-min reserves.
  - For East, consider requirement for 10-Minute Reserves located East of Central-East.

## Current Process Review Cont.

- ◆ **Step 4 Scarcity Pricing Applied** - Scarcity pricing will be applied if, in any RTD interval, reserves would have been insufficient but for EDRP/SCR and the resulting scarcity pricing LBMP is higher.
  - *The scarcity pricing rules are governed by MST Attachment B, Sections 17.1.2 including 17.1.2.2 and 17.1.2.3.*
  - *As per MST Section 17, Attachment B, if SCR/EDRP NYCA is called and needed, Scarcity Pricing Rule A (NYCA) is applied in the West and East, and Scarcity Pricing Rule B (East) is not applied.*

# 2011 State of the Market Report

- ◆ **David Patton's recommendation #8**
  - *'Modify rules so demand response resources that have been activated are eligible to set LBMPs in the real-time pricing methodology.'*

# Primary Enhancement Objectives

- ◆ **Set pricing consistent with locational activations.**
- ◆ **Obtain consistency between dispatch and scarcity assumptions.**

# Proposed Enhancements

- ◆ **Allow activations to be tested and priced for the specific zone(s).**
  - *NYISO will continue to activate EDRP/SCR to maintain reliability and allow scarcity pricing to apply to the energy price (LBMP) in the zone(s) where the reliability need was identified.*
  
- ◆ **Align latent reserve calculation in ‘but for’ Scarcity Pricing test with existing Ancillary Service market rules.**
  - *Remove inclusion of recallable Energy sales to external Control Areas as reserves*



# Details

- ◆ **The Real Time market will run its normal dispatch then immediately test the ‘but for’ scenario:**
  - “But for” will be determined as follows: If Available Reserves in the reliability area – [EDRP/SCR called]  $< 0$  then scarcity pricing applies.
  - Available Reserves are proposed to be defined as *‘the capability of all Suppliers to provide Operating Reserves in that interval and in the relevant location, minus the quantity of scheduled Operating Reserves in that interval’*.

# Details Cont.

## ◆ Energy Calculation

- *Calculate the price at the Reference Bus (RBP)*
  - *If a reliability need was identified in Zone E (Mohawk Valley) and the Available Reserves in the Load Zone(s) in which the NYISO identified the reliability need (including Zone E) are less than the number of EDRP/SCR MWs called, then the reference bus price is \$500, otherwise the reference bus price is the price from RTD.*
- *Losses for all locations will be the losses from RTD.*
- *Calculate congestion at each location*
  - *If the location was one in which the reliability need was identified and the Available Reserves in the Load Zone(s) in which the NYISO identified the reliability need are less than the number of EDRP/SCR MWs called, then congestion equals (\$500-RBP)*
  - *All other locations congestion will equal (RTD Congestion Component – (RBP – RTD Reference Bus Price))*
    - *Ensures a consistent reference bus price for all locations, while maintaining the original LBMPs at locations unaffected by Scarcity.*

# Final price

- ◆ **The maximum of the original RTD LBMP and the Scarcity LBMP becomes the Final LBMP.**
- ◆ **Example 1 (RBP changes):**
  - *RTD LBMP Gen A = \$50 (\$48 ref bus - \$3 MCL + \$5 CC)*
  - *RTD LBMP Gen B = \$300 (\$48 ref bus + \$7 MCL + \$245 CC)*
  - *Gen A is not in an activated zone, and Gen B is*
  - *Zone E (the Reference Bus) has been activated and passes the but for test so is set to \$500*
  - *Gen A final LBMP =  $\$500 - 3 + (5 - (500 - 48)) = \$50$*
  - *Gen B final LBMP =  $\$500 + 7 + (500 - 500) = \$507$*

# Example 2 – RBP the same

## ◆ Example 2:

- *RTD LBMP Gen A = \$50 (\$48 ref bus - \$3 MCL + \$5 CC)*
- *RTD LBMP Gen B = \$300 (\$48 ref bus + \$7 MCL + \$245 CC)*
- *Gen A is not in an activated zone, and Gen B is*
- *Zone E (the Reference Bus) has not been activated and so is left at the RTD price of \$48*
- *Gen A final LBMP =  $\$48 - 3 + (5 - (48 - 48)) = \$50$*
- *Gen B final LBMP =  $\$48 + 7 + (500 - 48) = \$507$*

# Details Cont.

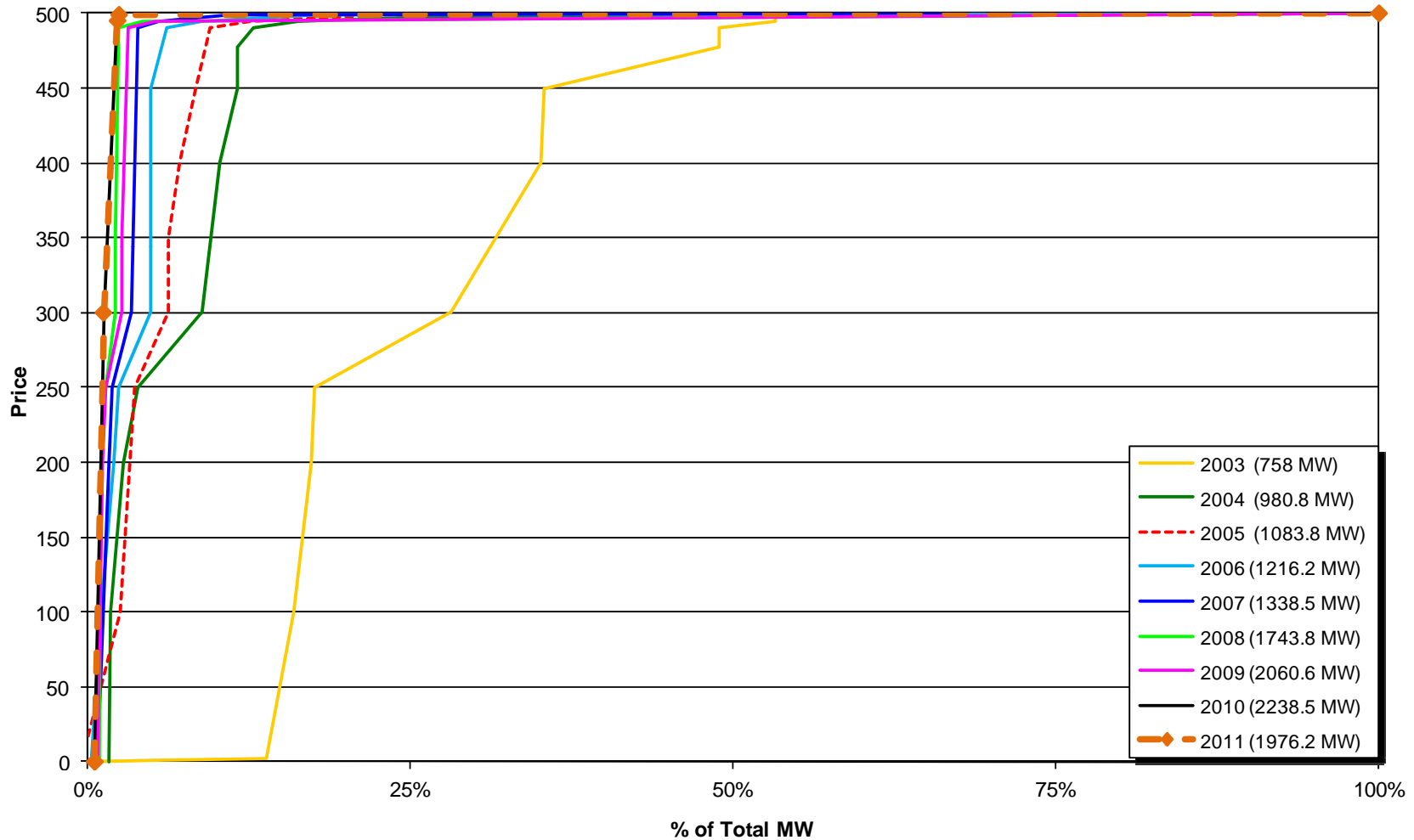
## ◆ Ancillary Calculation

- *For every gen in the zones EDRP/SCRs were identified to meet reliability needs, calculate an Energy Lost Opportunity Cost (ELOC).*
  - ELOC = Final LBMP - unit's economic bid point
- *For Regulation:*
  - Scarcity Regulation Cost (SRC) = ELOC + Regulation bid of the unit
  - MAX SRC is the highest SRC for all units in the SZ with an ideal Reg schedule > 0 and are not bound by an ideal ramp rate constraint.
  - If the MAX SRC is greater than the Real Time clearing price for Regulation, set the MAX SRC clearing price as the Final Regulation clearing price.
- *For all other ancillary products (Spin and Non Spin, 10 and 30):*
  - Take the MAX ELOC for all units in SZ with an ideal schedule > 0 in that product. If the MAX ELOC is greater than the Real Time clearing price for that product, replace the Ideal clearing price with the MAX ELOC for that product.
- *Note: These are the same calculations as today.*

# Activation Zone Clarification

- ◆ **Test for Scarcity Pricing can be against a specific zone, zones or reliability area (E.g. SENY, NYCA)**
  - *The test for scarcity pricing is applied against the reliability area, which may be larger than the EDRP/SCR activated zone(s).*
  - *If the reliability need was identified for all of NYCA or SENY the scarcity pricing test will be applied in all those Load Zones even if SCR/EDRP was activated in only a subset of those zones.*
    - **Example 1 (7/18/2012 HB 13-18):**
      - Zone J activated 473MW for SENY capacity.
      - Test the 473MW against SENY (zones G-K)
    - **Example 2 (7/6/2010 HB 13-19):**
      - Zone J activated 480MW for NYC voltage support.
      - Test 480MW against Zone J.

# SCR Minimum Payment Nomination



# EDRP/SCR Summary

- ◆ **The Minimum Payment Nomination for SCR resources is capped at \$500 and they are guaranteed the higher of their nomination or RT LBMP.**
- ◆ **Payment to activated EDRP resources is administratively set to the higher of RT LBMP or \$500.**
- ◆ **Less than 40 MW of SCR submit a payment nomination below \$500.**



# Proposed Tariff Changes

- ◆ **Revised Definition of Available Reserves to exclude recallable external Energy sales.**
- ◆ **Modified Att B, 17.1.2 thru 17.1.2.3.2**
  - *Eliminated references to Scarcity “A” and “B”*
  - *Indicate the but-for test will be against the areas where the reliability need was identified even if SCR/EDRP resources were not called in those Load Zones(s)*
  - *Modify LBMP formula to be consistent with new calculation*

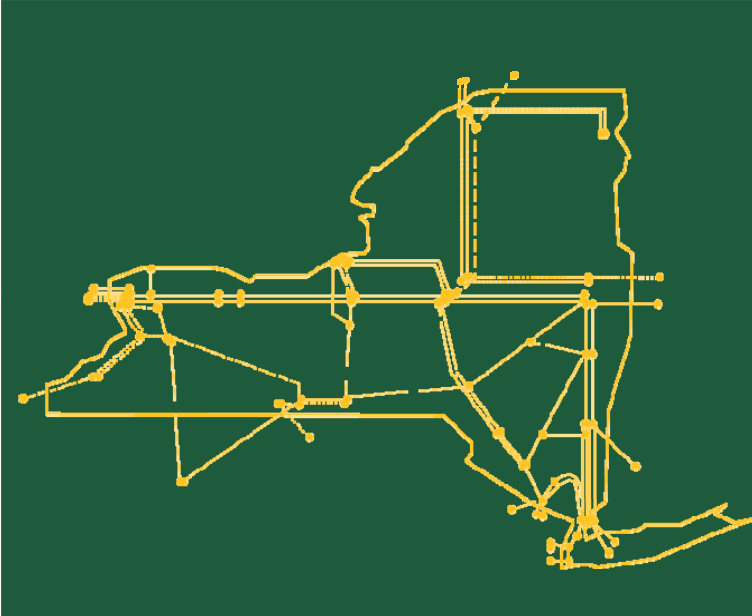
# Proposed Tariff Changes

- ◆ **Modified Rates Schedules 3 and 4 (15.3.5.2 and 15.4.6.2) to remove references to rules “A” and “B” and to condense language to indicate consistency with reserve cascading**
- ◆ **Minor format change to 5.12.11.1, removing upper case distinction from “Forecast Reserve Shortage” as it is not a defined term**

# Next Steps

- ◆ **BOD and FERC Filing Q1 2013**
- ◆ **Implementation slated for June 2013**
- ◆ **Comprehensive evaluation and proposal regarding shortage pricing by the 2nd quarter of 2014**

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