Comprehensive Shortage Pricing

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DRAFT – FOR DISCUSSION PURPOSES ONLY

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Background

- **The NYISO proposes tariff revisions to enable the implementation of Comprehensive Shortage Pricing, subject to approval by the FERC**
  - ***Tariff revisions are posted with these meeting materials***
  - ***The NYISO will seek stakeholder approval of the tariff language at the November 2014 BIC and MC***

Proposal

- **Proposed reserve region and shortage pricing changes based on the NYISO's Comprehensive Shortage Pricing Review**
- **Benefits:**
  - ***Improve the reflection of operator actions and system conditions in the Day-Ahead and Real Time markets***
  - ***Increase performance incentive strength and efficiency***
  - ***Maintain pricing consistency with neighboring ISOs/RTOs***

SENY and NYCA Reserve Proposal

- **The SENY reserve region would have a 30 Minute Total Reserve requirement of 1300MWs**
  - ***Requirement is based on the amount of reserves necessary to restore SENY power flows to within applicable transmission limits following a contingency event***
  - ***SENY reserves will be procured every market day***
- **Additionally, the NYCA 30 Minute Total Reserve requirement will be updated to 2620MWs**
  - ***This adjustment ensures NYCA reliability to re-establish 10 minute operating reserves following the loss of single largest supply contingency***
  - ***The additional NYCA reserves will be procured every market day***
- **The NYISO proposes to limit the amount of reserves on LI that can contribute to NYCA, EAST, and SENY reserve requirements**

Shortage Pricing Proposal

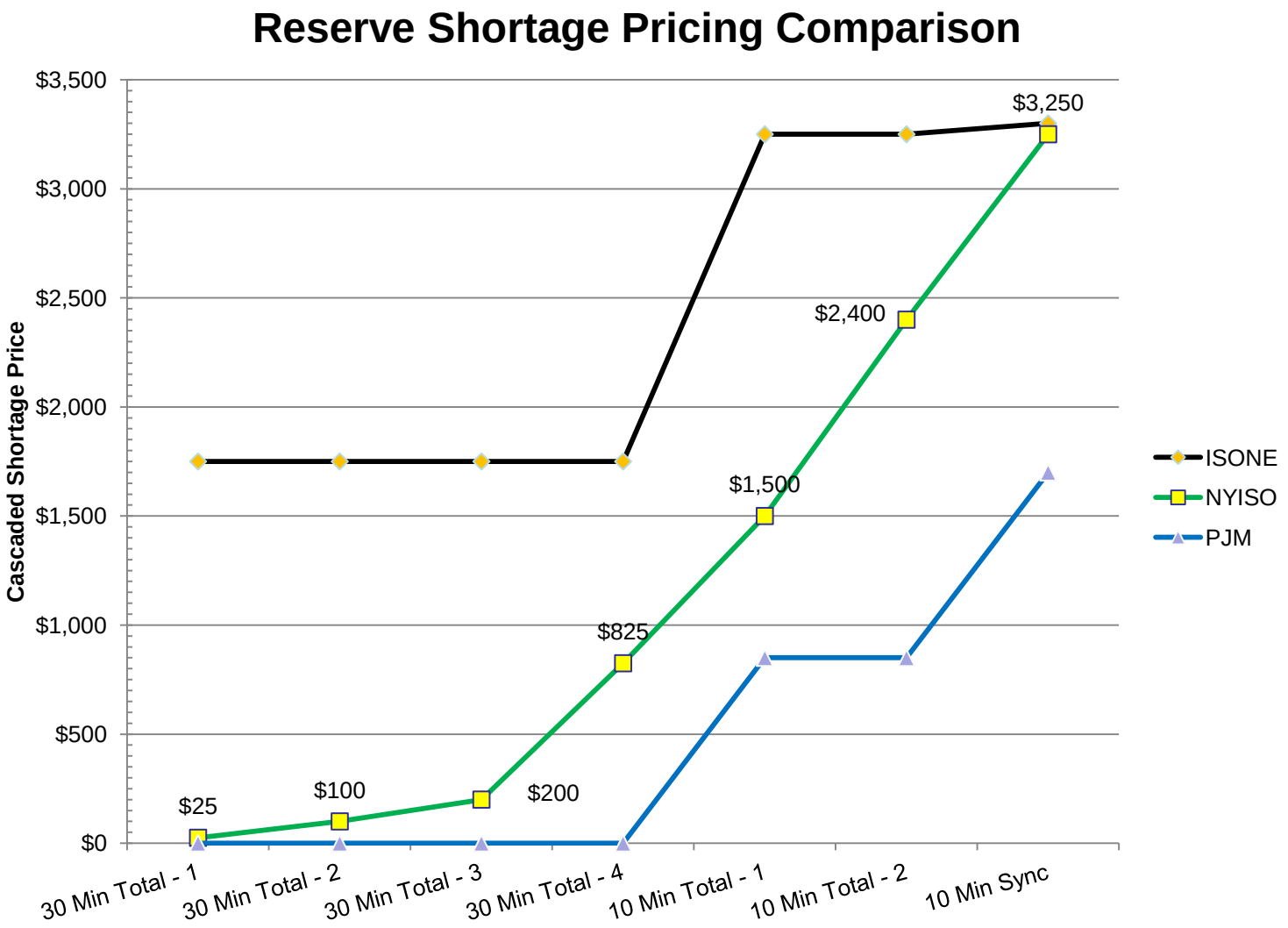
Proposed Reserve Demand Curve Prices			
Reserve Region	**Current**	**Proposed**	**Rationale**
	10 Min Spin		
NYCA	$500	$775	10 Min Synch reserves are equally important to maintaining 10 minute reserves in the EAST
EAST	$25	$25	Facilitates distribution of reserves throughout NY
SENY	N/A	$25	Facilitates distribution of reserves throughout NY
LI	$25	$25	Facilitates distribution of reserves throughout NY
Reserve Region	**10 Min Total**		**Rationale**
NYCA	$450	$750	Cost to replenish by converting 30 Min GTs to energy, consistent with operator actions
EAST	$500	$775	10 Min reserves for Central East post-contingency voltage IROL exceedence
SENY	N/A	$25	Facilitates distribution of reserves throughout NY
LI	$25	$25	Facilitates distribution of reserves throughout NY
Reserve Region	**30 Min Total**		**Rationale**
NYCA	N/A	300 MW at $25	Allow a portion of the increased 30 Minute Total reserves to be forgone to protect against price volatility
	200 MW at $50	355 MW at $100	Consistent with operator actions to maintain 30 minute reserves (GT OOMs)
	200 MW at $100	300 MW at $200	Consistent with operator actions to maintain 30 minute reserves (SREs)
	Remainder at $200	Remainder at $750	Consistent with operator actions to maintain 30 minute reserves (SCRs) and maintain comparable shortage pricing with neighboring ISO/RTOs
EAST	$25	$25	Facilitates distribution of reserves throughout NY
SENY	N/A	$25	Facilitates distribution of reserves throughout NY
LI	$25	$25	Facilitates distribution of reserves throughout NY

Shortage Pricing Proposal

Proposed Regulation Service Demand Curve Prices			
Reserve Region	Regulation		Rationale
	Current	Proposed	
NYCA	<=25 MW at $80	<=25 MW at $25	Provide additional ramp flexibility for meeting gen-load balance and operating reserve constraints
	>25 and <=80 MW at $180	>25 and <=80 MW at $400	Maintain Regulation during small 30 minute reserve shortages; Regulation is more valuable than 30 minute reserves
	>80 MW at $400	>80 MW at $775	Valued as much as 10 Min Synch to ensure some Regulation Service is procured because any unused Regulation Capacity can be counted as 10 Min Synch

Proposed Transmission Shortage Costs			
Reserve Region	Transmission Shortage		Rationale
	Current	Proposed	
NYCA	<=5 MW at $350	<=5 MW at $350	Approved for implementation in Q4 2014
	>5 and <=20 MW at $1,175	>5 and <=20 MW at $2,350	Cascaded cost of going shortage EAST & SENY 10 Min Total
	>20 MW at $4,000	>20 MW at $4,000	Approved for implementation in Q4 2014

ISO/RTO Comparison



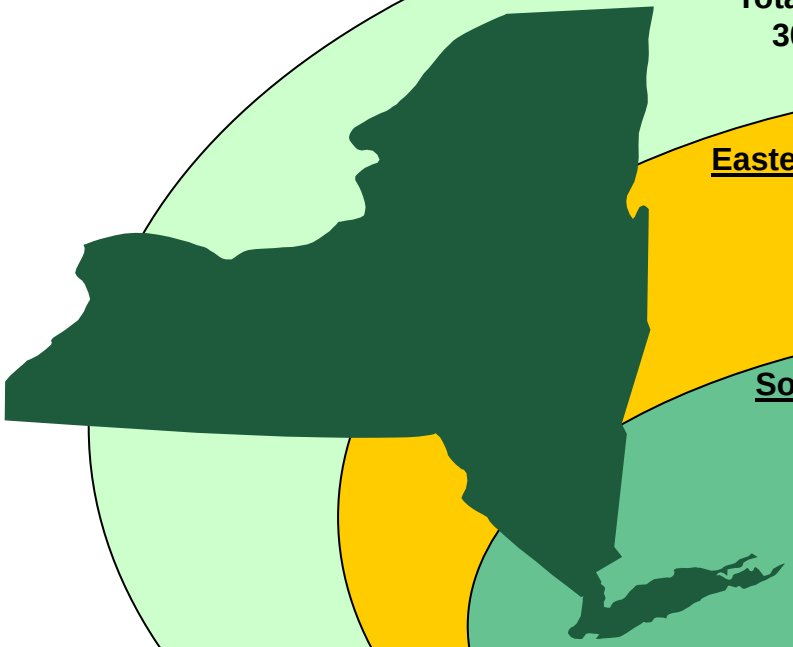
LI Reserve Contribution

- **Initially, the NYISO proposed to base the limit on LI's reserve contribution on the average flow over the Y49/Y50 lines**
  - ***Due to the limited ability to flow energy off from LI***
  - ***Could have many instances where the reserves held on LI are greater than the flow over the Y49/Y50 lines***
- **On 10/7/2014, the NYISO revised its proposal and proposed to limit the contribution of LI reserve to 200 MW, considered always deliverable**
  - ***This is conservative, since at times more reserve on LI may be able to count toward NYCA, East, and SENY requirements***

LI Reserve Contribution

- **The NYISO has enhanced its proposal, based on stakeholder comments, to set the contribution of LI reserve to NYCA, EAST, and SENY equal to the current LI 30 Minute reserve requirement**
  - ***The current LI 30 Minute reserve requirement varies from 270 MW to 540 MW, depending on the hour***
  - ***Though the limit is based on the 30 Minute reserve requirement for LI, higher quality reserves may still be used to meet the requirement***
- **This approach maintains LI in the nesting of NYCA, East, and SENY while ensuring the deliverability of LI reserve**

Proposed Reserve Changes



NYCA Wide Reserve Values
Total Spinning Reserve – 655 MW
Total 10 Min Reserve – 1310 MW
30 Minute Reserve – 2620 MW

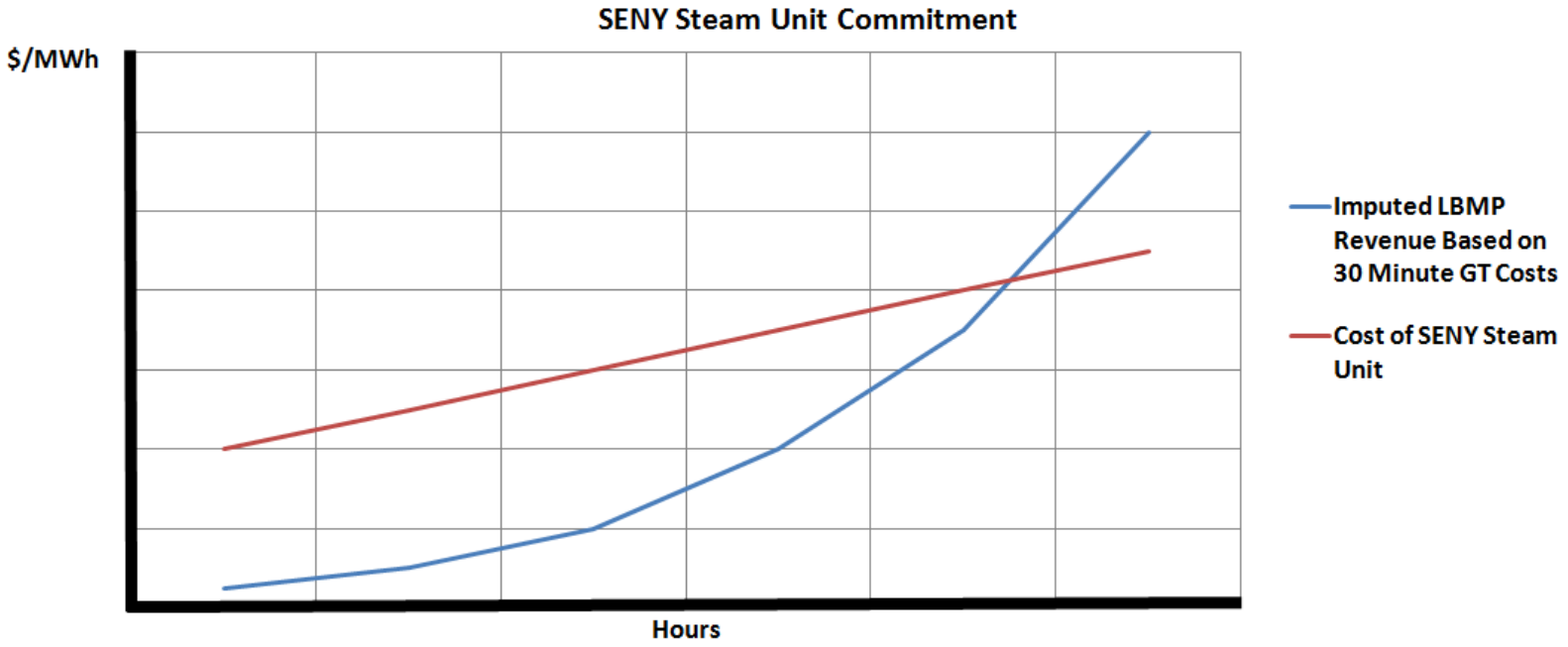
Eastern (East of Central East) Reserve Values
*** Total Spinning Reserve – 330 MW**
Total 10 Min Reserve – 1200 MW
*** 30 Minute Reserve – 1200 MW**

Southeast New York (SENY) Reserve Values
*** Total Synchronous Reserve – 0 MW**
Total 10 Min Reserve – 0 MW
*** 30 Minute Reserve – 1300 MW**

Long Island Reserve Values
*** Total Spinning Reserve – 0 MW**
*** Total 10 Min Reserve – 120 MW**
30 Minute Reserve – 270-540 MW
(Reserves provided by LI resources will be limited to this requirement)

* Denotes locational reserve categories that reflect a desire for dispersed reserves but are not operational requirements under the NYSRC reliability rules.

SENY Shortage Pricing



- **Analysis indicates that imputed LBMP revenue is adequate to commit a large SENY steam unit in the Day-Ahead market**
  - ***3 to 6 hours of run time is necessary to justify starting the unit to maintain the 1300 MW SENY 30 Minute reserve requirement***
    - **30 Minute GT unit bid and start up costs were considered to establish a marginal unit clearing price**
    - **The cost to start a SENY steam unit was amortized over hours to determine where cost to start was equal to revenue**

Tariff Changes

- **Definitions**
  - ***Open Access Transmission Tariff (OATT) and Market Administration and Control Area Services Tariff (MST) definition sections will be updated***
    - **Define Southeastern New York (SENY) as a reserve region**
    - **Specify that 9 Operating Reserve requirements will become 12**

Tariff Changes

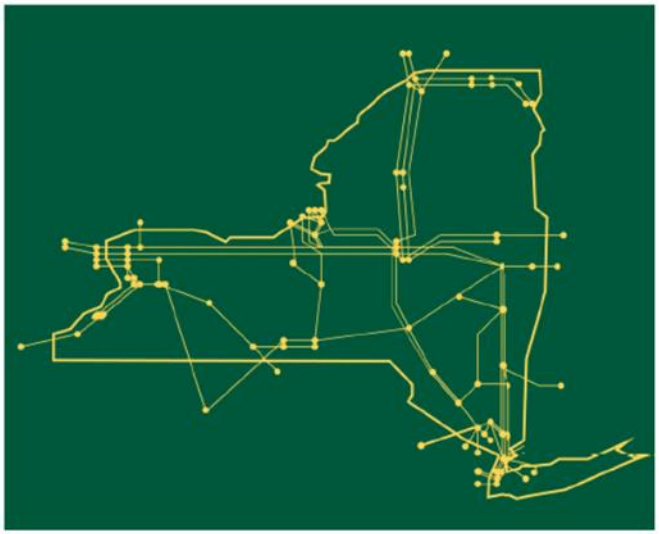
- **MST Rate Schedule 3**
  - ***Update the Regulation Service shortage pricing points to reflect those on slide 8***
- **MST Rate Schedule 4**
  - ***Revise to include SENY and update reserve demand curve prices in:***
    - **Establishing Locational Reserve Prices**
    - **Calculation of Day-Ahead Market Clearing Prices**
    - **Calculation of Real-Time Market Clearing Prices**
    - **Pricing of Operating Reserves During Intervals of Statewide Scarcity**
    - **Pricing Operating Reserves During Intervals of Southeastern New York Scarcity**

Timeline

- ✓ **June 2014 BIC**
  - ✓ ***BIC endorsed the NYISO's proposal to continue review and further define recommendations***
- ✓ **August 26, 2014 MIWG**
  - ✓ ***Propose SENY and NYCA Reserves***
  - ✓ ***Define Critical Operating Day Usage***
  - ✓ ***Propose revised shortage prices***
- ✓ **September 19, 2014 MIWG**
  - ✓ ***Address questions/concerns raised by stakeholders***
- ✓ **October 7, 2014 MIWG**
  - ✓ ***Propose LI reserve changes***
  - ✓ ***Continue to address questions/concerns raised by stakeholders***
- ✓ **October 14, 2014 MIWG**
  - ✓ ***Continue to address questions/concerns raised by stakeholders***
  - ✓ ***Work through tariff changes***
- • **October 30, 2014 MIWG**
  - • ***Work through tariff changes***
- ◆ **November 2014 BIC/MC**
  - ▪ ***Request approval of Comprehensive Shortage Pricing proposal***
- ◆ **Q2 2015 – Implement Comprehensive Shortage Pricing Changes**

Comments and feedback are requested throughout this review process

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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