

Comprehensive Shortage Pricing

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MIWG

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Krey Corporate Center*

Agenda

- ◆ **Background**
- ◆ **Proposal**
- ◆ **SENY Reserve Region**
- ◆ **NYCA Reserve Requirements**
- ◆ **Critical Operating Day**
- ◆ **Shortage Pricing Levels**
- ◆ **Timeline**

Background

- ◆ **Comprehensive Shortage Pricing supports the NYISO’s Fuel Assurance Initiative and includes:**
 - *Modeling a SENY reserve region*
 - *Revising the NYCA Total Reserve procurement*
 - *Defining Critical Operating Day(s)*
 - *Revising reserve, transmission, and regulation shortage pricing*

Fuel Assurance Initiative

Incent
Intra-day
Operational
Flexibility

Promote
Increased
Resource
Availability
and
Performance

The NYISO’s Efforts

Capacity Market

- *Ways to better incent and reflect performance*
- *Possible Summer/Winter EFORd*
- ...

Energy Market

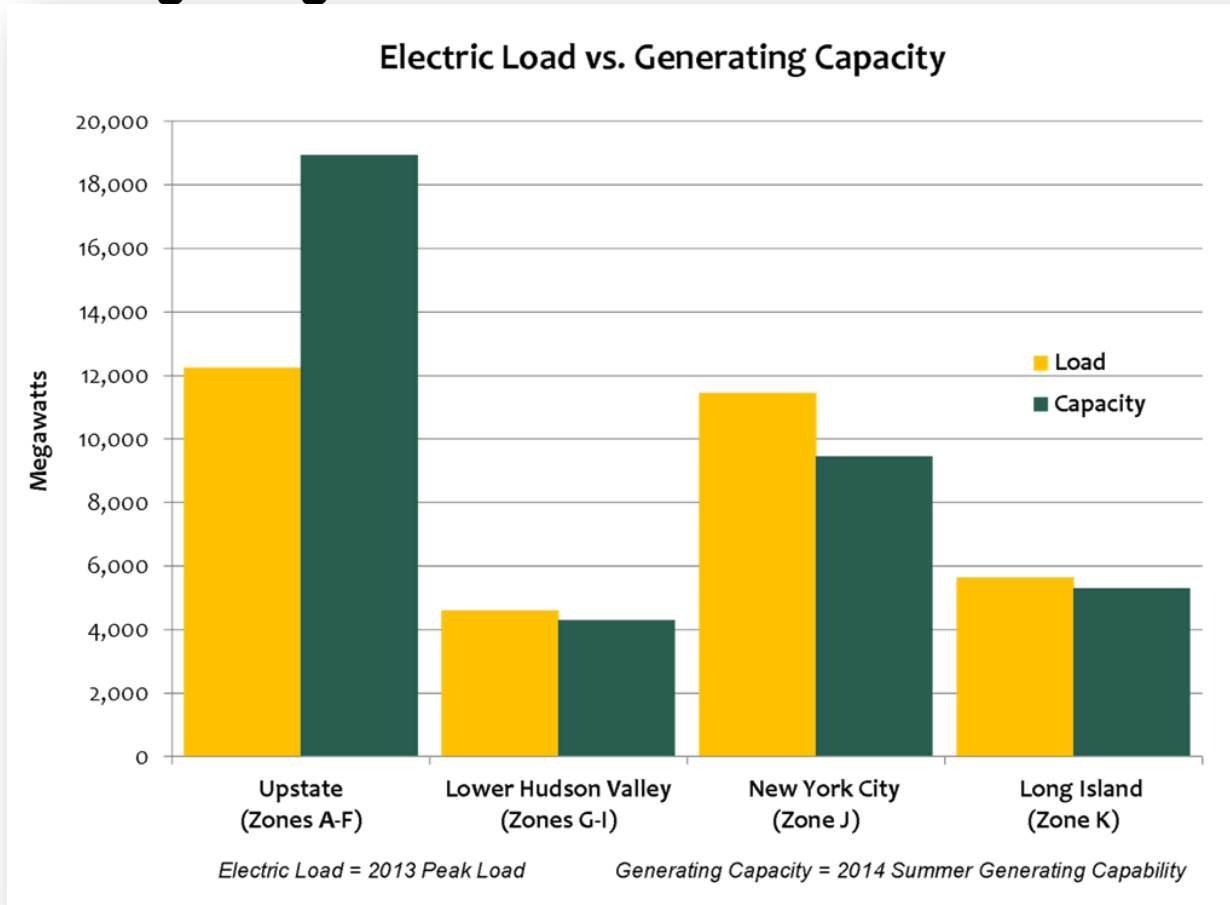
- ***Comprehensive Shortage Pricing***
- *Comprehensive Scarcity Pricing*
- *RLS Changes*
- ...

Gas-Electric Coordination

- *EMS Visualization of Gas System*
- *Gas Operational Information Sharing*
- *Fuel Availability Self Reporting project*
- ...

Background

- ◆ Power resource margins narrowing
 - *Retirements outpaced additions in recent years*
 - *Congestion limiting transfers to high-demand Southeastern New York*
- ◆ **Narrowing margins in the most constrained areas of NY**



Background

- ◆ **Winter operations 2013-2014 observations imply a revision of reserve requirements and shortage prices will be beneficial**
 - ***Dual Fuel Observations for extreme cold days***
 - For longer, sustained cold periods there were instances where delivery rates could not “keep up” with oil burn rates -- for many days oil was economic relative to gas
 - ***Pipeline-related observations for extreme cold days***
 - There were instances where generators connected to the interstate pipelines were able to procure and nominate gas intra-day, including instances for NYISO reliability supplemental commitments

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 Reserve Region

- ◆ **The 1300 MW 30 Minute Total Reserve requirement proposed for the SENY reserve region is based on the reduction in UPNY-SENY Thermal Interface Transfer Capability upon the first contingency**
 - *The worst first contingency on the interface is the loss of 92 Leeds-Pleasant Valley or 91 Athens-Pleasant Valley*
 - *1300 MW is the amount of SENY generation required to re-prepare the system to withstand the next contingency*
- ◆ **The proposed SENY 1300 MW 30 Minute Total Reserve requirement will better distribute reserves across the system to meet the UPNY-SENY interface ratings upon the worst first contingency on the interface**

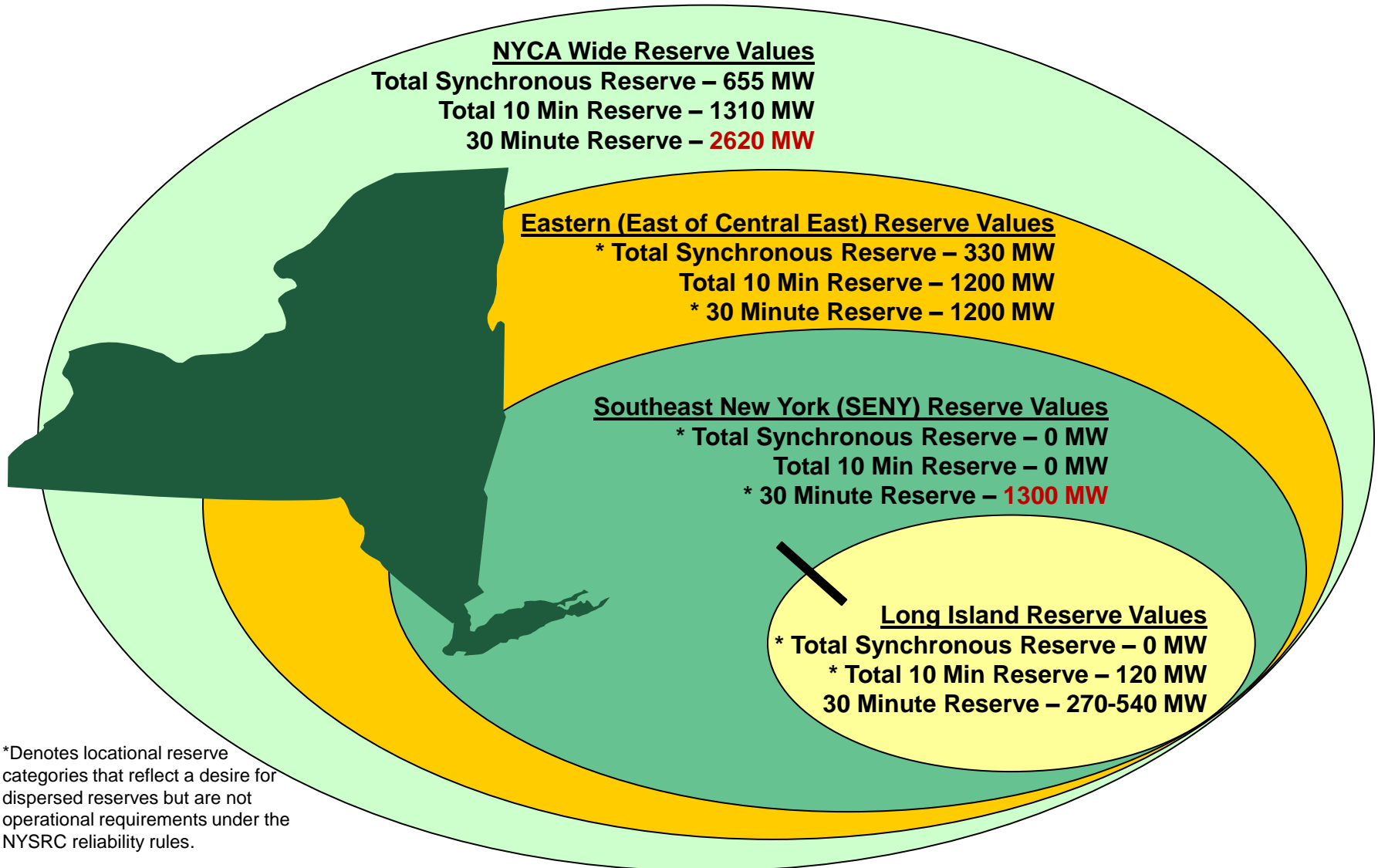
SENY Reserve Region

- ◆ **The SENY reserve requirement resolves a transmission issue, *not* a generation issue**
 - *Additional generation in SENY does not resolve the reliability need for the 1300 MW 30 Minute Total Reserve requirement*
 - *New transmission capability would necessitate a review of the SENY requirement in the energy markets*
- ◆ **The 1200 MW EAST 10 Minute Total requirement can satisfy 1200 MW of the SENY 30 Minute Total requirement, provided the reserves in EAST are held within the SENY reserve region**
 - *Do not need the extra 100 MW of 30 Minute Reserve in Zone F*
 - *EAST 10 Minute Total Reserve requirement based on Reliability Rule to bring loadings on an internal NY transfer interface to within limits in 15 minutes [NYS RC F-R6]*
 - **EAST 10 Minute Total Reserve requirement will remain at 1200 MW**

SENY Reserve Region

- ◆ **The NYISO is considering limiting the ability of Long Island to fulfill the NYCA, EAST, and SENY reserve requirement**
 - *Inability to export energy from LI*
 - *Considering limiting the amount of reserves LI can supply to the flow on Y49/ Y50*
 - Supply reserves from LI by reducing flow
- ◆ **Average flow over these lines was roughly 700 MW over the last year**

NYCA Reserve Regions



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

NYCA Reserve Requirement

- ◆ **Include Operator actions within the market solution to drive more efficient results**
- ◆ **Reliability need for 2620 MW of 30 Minute Reserve, procured each market day**
 - *Future operating conditions may make it difficult to restore the entire 10 Minute Total requirement with the current 1965 MW requirement*
 - **Operations currently relies on latent capacity to restore this 10 Minute Total requirement**
- ◆ **Relying on latent capacity in RT as opposed to reserve awarded capacity can become a problem, since generators do not schedule fuel for latent capacity**
 - *Procuring 2620 MW ensures gas fired generators receiving DA reserve awards attempt to schedule gas to cover the reserve obligation*

Shortage Pricing

- ◆ **Shortage pricing incents performance**
 - *Shortage pricing rewards for delivery of MW in RT and encourages load to schedule in the DAM*
 - *These performance incentives are consistent with scheduling 2620 MW of 30 Minute Reserves each operating day*
- ◆ **Shortage pricing should appropriately value operator action and system conditions**
- ◆ **EDRP/SCR activations are often used to protect reserves**
 - *Therefore the current reserve demand curve prices should be updated to ensure Operating Reserves are properly aligned with scarcity pricing*

Critical Operating Day

- ◆ **MP feedback indicated concern regarding adjustments to shortage pricing levels based on calling a Critical Operating Day**
 - *The revised proposed shortage prices will apply each market day*
 - *The SENY reserve price should be set consistent with other requirements that facilitate the distribution of reserves throughout NY*
- ◆ **The NYISO will continue to consider designating Critical Operating Days, but is not including this concept as part of this proposal**

Shortage Pricing

Proposed Reserve Demand Curve Prices			
Reserve Region	Current	Proposed	Rationale
	10 Min Spin		
<i>NYCA</i>	\$500	\$775	10 Min Synch reserves are equally important to maintaining 10 minute reserves in the EAST
<i>EAST</i>	\$25	\$25	Facilitates distribution of reserves throughout NY
<i>SENY</i>	N/A	\$25	Facilitates distribution of reserves throughout NY
<i>LI</i>	\$25	\$25	Facilitates distribution of reserves throughout NY
Reserve Region	10 Min Total		Rationale
<i>NYCA</i>	\$450	\$750	Cost to replenish by converting 30 Min GTs to energy, consistent with operator actions
<i>EAST</i>	\$500	\$775	10 Min reserves for Central East post-contingency voltage IROL exceedence
<i>SENY</i>	N/A	\$25	Facilitates distribution of reserves throughout NY
<i>LI</i>	\$25	\$25	Facilitates distribution of reserves throughout NY
Reserve Region	30 Min Total		Rationale
<i>NYCA</i>	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)
	255 MW at \$200	355 MW at \$750	Consistent with operator actions to maintain 30 minute reserves (SCRs)
<i>EAST</i>	\$25	\$25	Facilitates distribution of reserves throughout NY
<i>SENY</i>	N/A	\$25	Facilitates distribution of reserves throughout NY
<i>LI</i>	\$25	\$25	Facilitates distribution of reserves throughout NY

Shortage Pricing

Proposed Regulation Service Demand Curve Prices

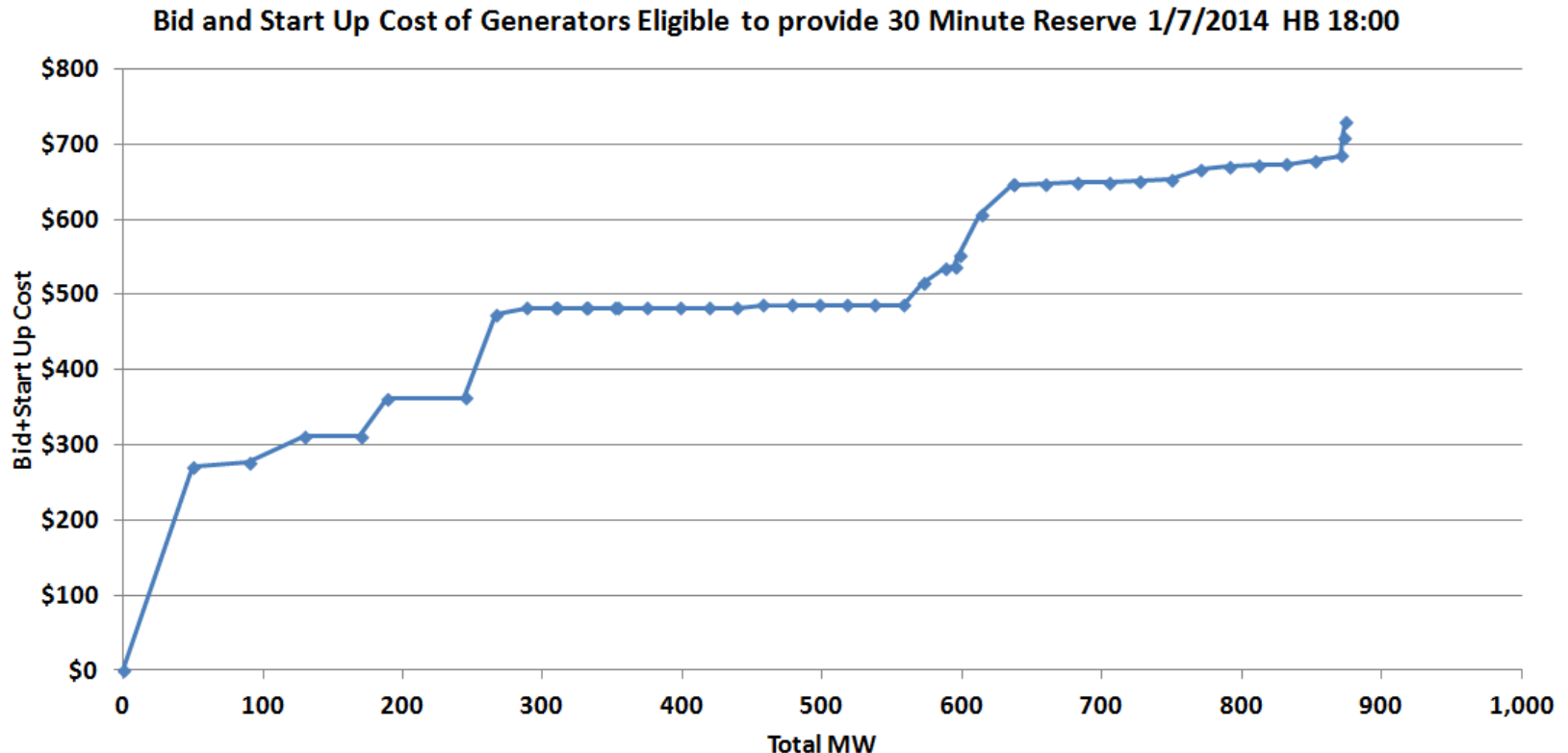
Reserve Region	Regulation		Rationale
	Current	Proposed	
NYCA	<=25 MW at \$80	<=25 MW at \$25	Provide additional ramp flexibility for meeting gen-load balance and operating reserve constraints
	>25 and <=80 MW at \$180	>25 and <=80 MW at \$400	Maintain Regulation during small 30 minute reserve shortages; 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

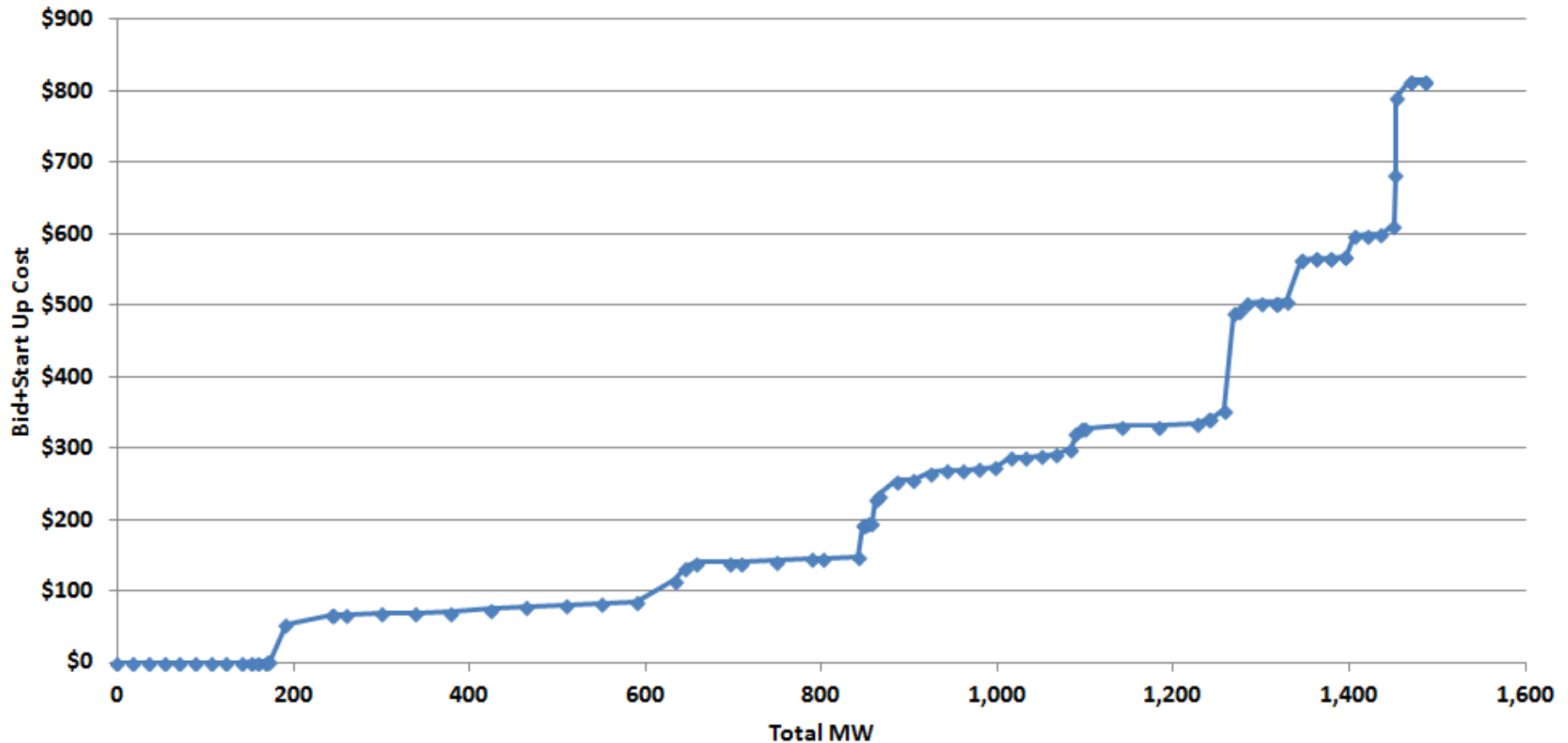
Shortage Pricing

- ◆ 30 Minute start resource bids and start up costs were used to establish an appropriate demand curve price for 10 Minute Total reserve
 - *In practice, 30 Minute Reserve resources would be used to free up 10 Minute Reserves and avoid a prolonged 10 Minute Reserve shortage*



Shortage Pricing

Bid and Start Up Cost of Generators Eligible to provide 30 Minute Reserve 7/19/2013 HB 16:00



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 – November 2014 MIWG**
 - *Propose scarcity pricing mechanism changes*
 - *Continue to address questions/concerns raised by stakeholders*
 - *Work through tariff changes*
- ◆ **Fall/Winter 2014 BIC/MC – Request Endorsement**
- ◆ **Q2 2015 – Implement Comprehensive Shortage Pricing Changes**
- ◆ **Spring 2016 – Implement Comprehensive Scarcity 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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