NYISO's Winter-to-Summer Ratio Calculation Methodology: Comparing NYISO's Original Proposal and a Revised Approach

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Objective

- **Further discuss the NYISO's originally proposed methodology for calculating the winter-to-summer ratio (WSR) and an alternative methodology introduced at the March 22, 2016 ICAPWG meeting**
- **Seek to finalize the WSR methodology prior to MC vote on the proposed changes to the ICAP Demand Curve reset (DCR) process**

Background

- **NYISO original methodology calculates the WSR using available capacity from the monthly ICAP Market Reports**
  - ***Annually update the WSR using the total available ICAP for the same 3 year historical period utilized in calculating net Energy and Ancillary Services (EAS) revenues -- the WSR used for annual updates is a 3 year rolling average***
  - ***Each 12 month period for calculating the annual WSR starts in September and runs through the following August***
    - **For the ICAP Demand Curve values for the 2017/2018 Capability Year, the G-J Locality WSR would be based on two years of historical data.**
    - **Beginning with the annual update for the 2018/2019 Capability Year and all future Capability Years, the WSR for the G-J Locality would be based on three years of historical data**
  - ***A spreadsheet summary of ICAP Market Report data accompanies this presentation to provide stakeholders ready access to the data utilized for the NYISO's proposed methodology***
- **NYISO is looking to calculate accurate and stable WSRs that are reflective of market conditions that change over time**

Stakeholder proposal to revise NYISO's original approach

- Some stakeholders asked the NYISO to consider adjustments to WSR to account for resource entry and exit actions that are not uniform throughout a 12 month period used for the WSR calculations
  - *Such stakeholders raised concerns that such entry and exit could introduce transitory volatility in the WSR rolling average calculation*
- To address their concerns, such stakeholders recommended that the NYISO further consider treating resource exit and entry similarly based upon whether the original market data captures non zero values in 6 months or more of each 12 month period (September-August) used for calculating annual updates to the WSR
  - *If the resource is captured in 6 months or more of a 12 month period, add the resource's MW to all months of the 12 month period at issue*
  - *If the resource is captured in less than 6 months of a 12 month period, remove the resource's MW from all months of the 12 month period at issue*
- This approach does not necessarily capture market conditions as they would occur moving forward

NYISO's Revised Methodology

- **NYISO has considered stakeholder feedback regarding concerns related to resource entry and exit actions that could result in resources being inconsistently accounted for within a 12 month data period within the 3 year data set used in calculating annual updates to the WSR**
- **NYISO is proposing a revised methodology that would reflect generator entry and exit actions within each 12 month period as they would be expected to persist in the market moving forward**
  - ***For <u>new entry</u> of a generator that comes online after September of the 12 month period, the NYISO will add the resource's applicable Summer or Winter MW to any month in which the entering MW are not already included***
    - **New entry in this context includes new generator projects, as well as generators returning from Mothball and ICAP Ineligible Force Outage status**
  - ***For <u>exit</u> of resources that occur after September of the 12 month period, the NYISO will remove the resource's MW from any months in which it is represented***
    - **Exit actions include generators that enter a Retired, Mothball or ICAP Ineligible Force Outage state**

Numerical Examples

- The following examples illustrate the impact on the NYCA WSR using the NYISO's original and revised methodologies that would result from 500 MW of non temperature sensitive supply entering the market as of May 1 as well as exiting the market November 1
- With the original approach the timing of resources entering or exiting the market that is not aligned with the start of the 12 month period (*i.e.*, September 1) may have a small, but not necessarily a de minimis, impact on the reference point price values for NYCA
- The revised approach accounts for such changes as they would be expected to persist going forward and therefore provides a more accurate representation of changes in actual market conditions over time without introducing any undue volatility

Comparison of WSR Methods – Starting Point

Y1:	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	WSR
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y2:	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y3:	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036

3 yr. WSR	Reference Point Price
1.036	$ 8.35

- Starting point example assumes no entry or exit changes over the three year period
- Monthly summer and winter values were held constant for illustrative purposes only

Comparison of WSR Methods: 500MW New Entry in May - NYISO Original Method

Y1:	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	WSR
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y2:	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	
	42000	42000	43500	43500	43500	43500	43500	43500	42500	42500	42500	42500	1.028
Y3:	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
	42500	42500	44000	44000	44000	44000	44000	44000	42500	42500	42500	42500	1.035
	3 yr.		Reference Point Price										
	1.033		$ 8.23										

- The example illustrates how the NYISO's original method captures a new entry that is not aligned with the start of the 12 month period (i.e., September 1) within the 3 year data set
- Note that in the subsequent year the new entry is fully captured in each month and the calculated 12 month WSR rebounds
- Note that the 3 year rolling average calculation of WSR would not fully rebound until the 2014-2015 year rolls out of the data set

Comparison of WSR Methods: 500MW New Entry in May - NYISO Revised Method

Y1:	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	WSR
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y2:	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	
	42500	42500	44000	44000	44000	44000	44000	44000	42500	42500	42500	42500	1.035
Y3:	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
	42500	42500	44000	44000	44000	44000	44000	44000	42500	42500	42500	42500	1.035
	3 yr.		Reference Point Price										
	1.035		$ 8.34										

- The revised approach adds the 500 MW to each monthly available ICAP value starting in Sep-14 through Apr-15
- Reduction in annual WSR for the 2014-2015 period observed under the NYISO's original proposal does not occur
- Fully captures the market change as it would be expected to persist going forward

Comparison of WSR Methods: 500 MW Exit in November - NYISO Original Method

Y1:	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	WSR
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y2:	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	
	42000	42000	43000	43000	43000	43000	43000	43000	41500	41500	41500	41500	1.032
Y3:	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
	41500	41500	43000	43000	43000	43000	43000	43000	41500	41500	41500	41500	1.036
	3 yr.		Reference Point Price										
	1.035		$ 8.30										

- As discussed at the March 22, 2016 ICAPWG meeting, the NYISO's original proposed method also captures resource exit that is not aligned with the start of the 12 month period. (i.e., September 1)
- NYISO continues to believe this impact is small due to the fact that the 12 month periods used for the 3 year rolling average capture parts of 2 consecutive Summer Capability Periods surrounding a single Winter Capability Period
- The same level of exit within a Locality would be expected to result in reflecting a larger impact to the annual WSR for the 12 month period in which the exit occurs

Comparison of WSR Methods: 500 MW Exit in November - NYISO Revised Method

Y1:	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	WSR
	42000	42000	43500	43500	43500	43500	43500	43500	42000	42000	42000	42000	1.036
Y2:	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	
	41500	41500	43000	43000	43000	43000	43000	43000	41500	41500	41500	41500	1.036
Y3:	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	
	41500	41500	43000	43000	43000	43000	43000	43000	41500	41500	41500	41500	1.036
	3 yr.		Reference Point Price										
	1.036		$ 8.36										

- The revised approach eliminates the 500 MW from each monthly available ICAP value for Sep-14 and Oct-14
- Reduction in annual WSR for the 2014-2015 period observed under the NYISO's original proposal does not occur
- Revised methodology is intended to ensure that the 12 month period with misaligned winter exit reflects change as it would be expected to persist going forward

Summary

- **While entry and exit that is not aligned with the September start of each 12 month period used in the 3 year rolling average WSR reflects actual market conditions, it could result in transitory volatility in the 3 year rolling average calculation**
- **To address this potential concern, the NYISO recommends use of its revised approach to the WSR calculation methodology, as described herein**
  - ***The revised methodology is intended to capture expected entry and exit conditions fully as they are expected to persist going forward***

Next Steps

- **Soliciting additional stakeholder feedback**
  - ***Today, at this meeting***
- **March 30, 2016 MC meeting**
  - ***Vote on proposed changes to the DCR process***

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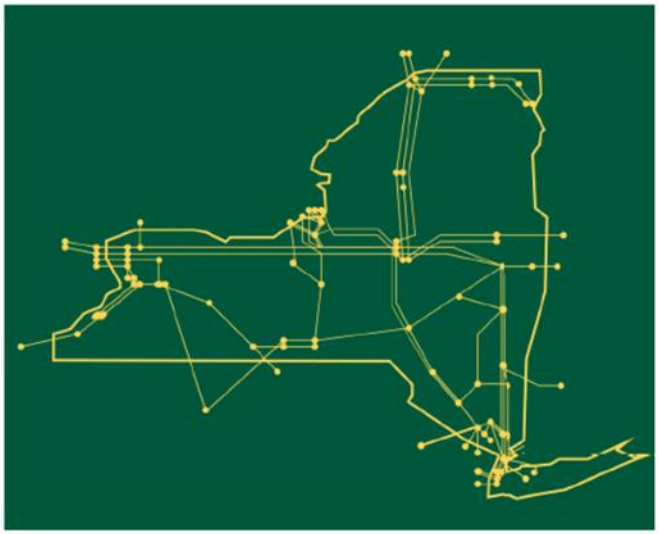

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