Forecasting the ICAP Reference Point in Buyer-Side Mitigation Determinations: Review of Proposal, Mechanics and Examples

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Agenda

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History

Date	Working Group	Discussion points and links to materials
10-07-16	ICAP Working Group (ICAPWG)	First discussion on alternatives to current BSM rules for forecasting the ICAP reference point for a Mitigation Study Period ("MSP"). The NYISO proposed to align BSM Provisions with the new Demand Curve annual update rules by: a) Escalating peaking plant gross CONE b) Estimating net Energy & Ancillary Services ("EAS") revenues c) Updating the Winter-to-Summer ratio ("WSR")
01-27-17	ICAPWG	NYISO presented a revised proposal for determining the ICAP Demand Curve reference point during the MSP.
3-8-17	ICAPWG	Third discussion on alternatives to current BSM rules for forecasting the ICAP Demand Curve reference point during the MSP. Stakeholders requested more information and specifics on the mechanics of NYISO's proposal.
Today	ICAPWG	The NYISO returns to the ICAP Working Group with further details and illustrative examples of how it proposes to forecast the ICAP Reference Point during the MSP.

Objective

Today's presentation seeks to:

- Review the NYISO's proposal
- Explain the methodology
- Provide illustrative examples
- Solicit comments & suggestions

Proposal

Background

- The BSM rules specify simply that the NYISO shall identify the price on the ICAP Demand Curves projected for a MSP using the escalation factor of the relevant ICAP Demand Curves
- The recently accepted Demand Curve annual update tariff provisions prescribe that the ICAP Demand Curve reference point in the Annual Update is to reflect the:
  - Escalated peaking plant gross CONE
  - Updated peaking plant net EAS revenues
  - Updated WSR ratio
- The BSM rules predate the ICAP Demand Curve annual update and the methodology to update the reference point

Proposal

- The NYISO proposes to align its application of the BSM rules with the annual ICAP Demand Curve update rules
- Specifically, when making BSM determinations, in order to identify the price on the ICAP Demand Curve, the NYISO will estimate the ICAP reference point by:
  - Escalating the effective ICAP Demand Curve peaking plant gross CONE
  - Reasonably estimating the peaking plant net EAS revenues
  - Estimating the WSR
- This proposed enhanced methodology can be accommodated under the current BSM rules
  - This methodology is consistent with the current tariff provision on escalating the ICAP Demand Curves and under the NYISO's separate proposal to revise the BSM rules' on escalation and inflation to align with the ICAP Demand Curve annual update rules

Mechanics

- *Estimating peaking plant net EAS*

Estimating Peaking Plant Net EAS Offset

- The NYISO proposes to use the same methodology to estimate LBMPs and reserve prices for predicting peaking plant net EAS as it does for Examined Facilities
- In recent BSM examinations, LBMPs were developed to estimate Examined Facilities' net EAS revenues using an econometric model that utilized the following types of data:*
  - Historic daily gas prices
  - Monthly gas futures
  - Historic load
  - Predicted load (Gold Book)
  - Historic Hourly LBMPs

**The mechanics described herein are based on the recently used methodology. As with other inputs, an alternate reasonable methodology may be used in the future*

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Estimating Peaking Plant Net EAS Offset *(continued)*

- **Adjustments would be made to account for the tariff prescribed level of excess conditions**
  - Peaking plant net EAS revenues will be estimated under system conditions that reflect the applicable minimum Installed Capacity requirement plus the MWs of the peaking plant
- **The adjusted LBMPs would be used in a dispatch model to estimate the net EAS of the peaking plant**
  - The NYISO would use the applicable dispatch model of the effective Demand Curves

Estimating Peaking Plant Net EAS Offset (continued)

- To estimate peaking plant net EAS revenues for each year of the MSP the NYISO would use a rolling 3-year data set of LBMPs
- For example, for Class Year 2017 the NYISO would:
  - Use LBMPs for September 2016 through August 2019 to estimate peaking plant net EAS in Capability Year 2020/2021 (*i.e.*, year 1 of MSP)
  - LBMPs for 2016 would roll off and be replaced by 2020 LBMPs for Capability Year 2021/2022
- This would be consistent with the time period of the rolling 3-year sample of LBMPs used in actual ICAP Demand Curve annual updates
  - Actual ICAP Demand Curves will use a rolling 3-year historic sample of LBMPs

See appendix for an illustration of how the NYISO would use a rolling 3-year sample of LBMPS during a MSP

Estimating Peaking Plant Net EAS Offset (continued)

- **The NYISO will post on its website the results of the projected peaking plant net EAS revenues (except for the posting of inputs which could disclose confidential information)**
  - The NYISO would include this as part of the BSM ICAP Forecast - Assumptions & References document which is posted on its website before the exemption or Offer Floor determinations

Mechanics

- Escalating gross CONE
- Estimating WSR

Escalating Peaking Plant Gross CONE

- The NYISO proposes to use the most recently published ten year projections for inflation to escalate peaking plant gross CONE
  - This approach is consistent with the NYISO's separate proposal to use the ten year projections from the Survey of Professional Forecasters in BSM determinations and to adjust Offer Floors to the year of entry

Estimating WSR

- **The NYISO is proposing to specify in the BSM rules that it will update the WSR based on the Summer and Winter Capability Period ICAP during each year of the MSP**
  - The WSR for the MSP will be a function of Examined Facility and capacity resource inclusion and exclusion rules for the BSM forecast
    - The methodology can be applied under its current BSM inclusion and exclusion rules and also under the NYISO's separately proposed enhancements to its current BSM forecast rules

Example

- Projecting the ICAP reference point for a MSP

Example: Escalating Peaking Plant Gross CONE for Year 1 of the MSP

- Assume the effective ICAP Demand Curve gross CONE = $200/kW-Year
- Assume the most recently published ten year projections for inflation from the Survey of Professional Forecasters* = 2.0%
  - The NYISO will use the long term expectation for inflation to escalate the effective Demand Curve gross CONE to Year 1 of the MSP (i.e., + 3 years)
    - 200 * (1+2.0%)^3 = $212/kW-Year

**As proposed by the NYISO at the April 4th ICAPWG meeting as the source of inflation value to project the price on the ICAP Demand Curve projected for a MSP*

Example: Net EAS Offset

- Assume estimated net EAS of $50/kW-Year for the peaking plant.
- This would produce an Annual Reference Value requirement of $162/kW-Year
  - Gross CONE ($212) – net EAS($50) = $162/kW-Year.

Example: Hypothetical ICAP Demand Curve Parameters

	Effective Demand Curve	Year 1 of MSP (i.e., + 3 years)	Comments
Gross CONE	$200.00	$212.24	Inflate effective DC gross CONE using the long-run projection for inflation
Net EAS	$60	$50	Estimated using energy dispatch model and forecasted LBMPs
Annual Reference Value (Net CONE)	$140	$162.24	Gross CONE minus net EAS
Reference Point*	$14.18	$16.74	Calculate using the updated WSR

**See appendix for input assumptions used in the calculation of the hypothetical reference point*

Feedback?

- The NYISO welcomes additional suggestions and feedback
- Email additional feedback to: deckels@nyiso.com

Questions?

We are here to help. Let us know if we can add anything.

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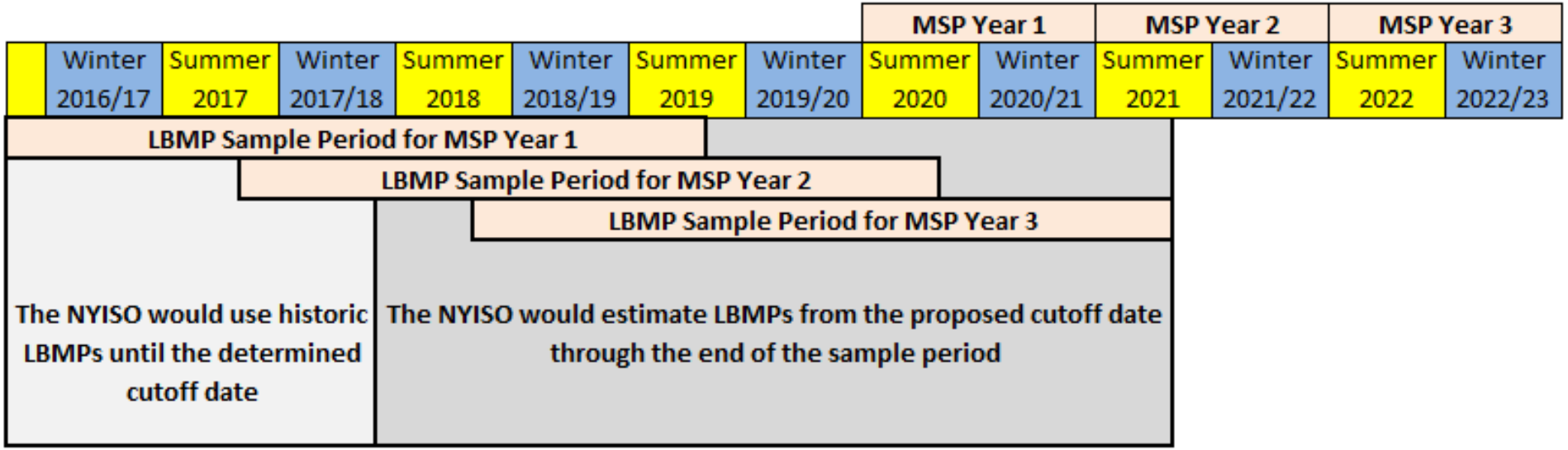
Appendix

Appendix: Rolling 3-year data set of LBMPs for a MSP

The chart below illustrates how the NYISO would use a rolling 3-year data set of LBMPs for each year of the MSP. In this hypothetical example for Class Year 2017, initial determinations are made in March 2018. The NYISO would use actual LBMPs through a cutoff date to be determined by the NYISO and forecast LBMPs for future periods.



Appendix: Input assumptions used in calculation of hypothetical ICAP Demand Curve parameters

Inputs	Effective Demand Curve	Year 1 of Mitigation Study Period (i.e., +3 years)
DMNC ICAP	215	215
DMNC Summer	225	225
DMNC Winter	230	230
Peak Load	12,000	12,000
LCR	80.0%	80.0%
Level of Excess	102.2%	102.2%
Zero Crossing Point	18%	18%
WSR	1.035	1.040