

Numerical Example of Net Short Threshold for Self Supply Exemption

Julia Popova, PhD
Economist, ICAP Market Mitigation
New York Independent System Operator

ICAP WG
April 06, 2016
Krey Blvd, Rensselaer, NY

Background

- ◆ Commission’s October 9, 2015 order (EL15-64) directed the NYISO to revise the buyer-side capacity market power mitigation measures (“BSM Rules”) to exempt certain narrowly defined renewable and self-supply resources from Offer Floor mitigation.
- ◆ The NYISO has been working with its stakeholders to develop the compliance tariff revisions.
 - *At the February 24 ICAP WG meeting stakeholders requested a numerical example*
- ◆ Today’s presentation provides a numerical example of how the Net Short Threshold will be applied.
 - *The Excel workbook posted with today’s ICAPWG meeting materials provides a numerical example including all the calculations.*
 - *These slides review the method and the inputs necessary for such calculations.*

Net Short Threshold

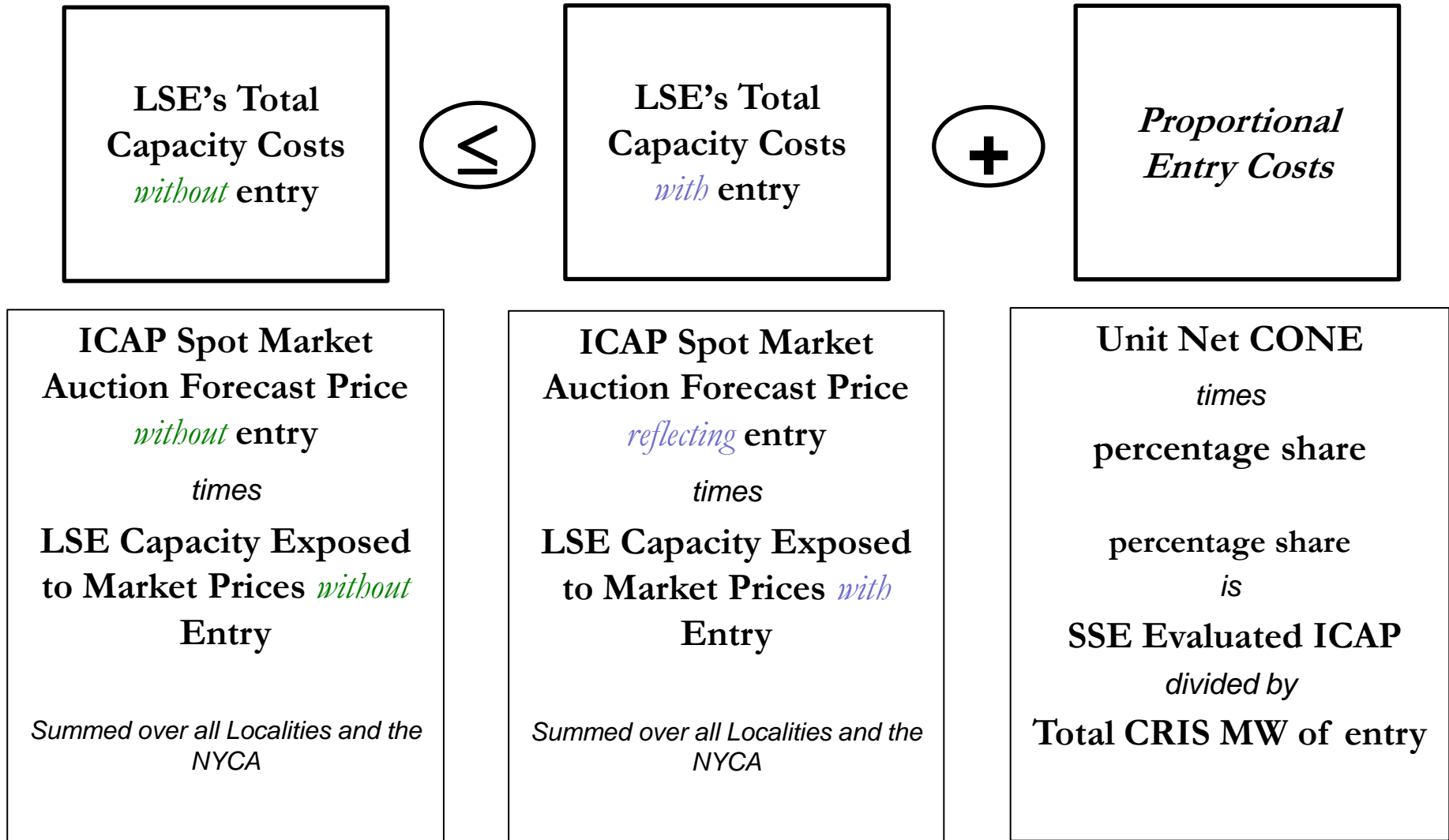
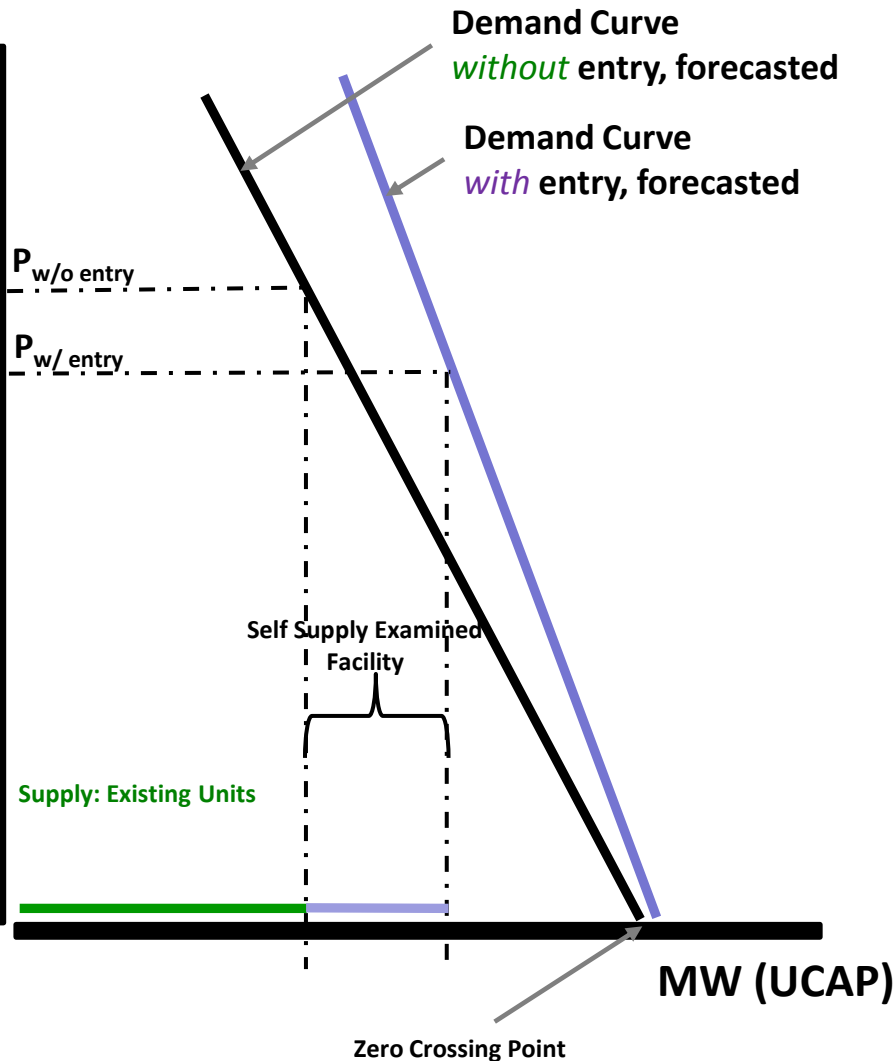


Illustration: ICAP Spot Auction price forecast for Net Short Threshold



- ◆ Why the Demand Curve slope changes before and after entry
 - ◆ The UCAP Based Demand Curve slope changes because
 - *Locality Derating Factor (for the purpose of ICAP/UCAP translation) changes after the Self Supply Exemption resource enters*

Net Short Threshold: Inputs

- ◆ **Self Supply LSE (for each Locality and the NYCA):**
 - *LSE (historic) Minimum Capacity Requirements*
 - *Locality (historic) excess above requirements purchases*
 - *LSE existing long term contracts and commitments*
 - *LSE existing self supply capacity and Self Supply Exemption(s) in completed Class Years*
 - *Self Supply Exemption request (Acknowledgement and Certification)*
- ◆ **Developer (for Self Supply Examined Facility):**
 - *Capital Costs, Operating Costs, and financing assumptions*
 - *Performance Characteristics*
 - *Self Supply Exemption request (Acknowledgement and Certification)*

◆ **Demand Curve:**

<i>Demand Curve (Locality)</i>	<i>Units</i>
Load Forecast	ICAP MW
Locational Minimum ICAP Requirement	%
ICAP Reference Point	\$/kW-mo
ICAP/UCAP Derating Factor	%
UCAP Reference Point	\$/kW-mo
UCAP Requirement	UCAP MW
Demand Curve Length	%
UCAP at \$0 (Zero Crossing Point)	UCAP MW
Demand Curve Slope	\$/kW-mo

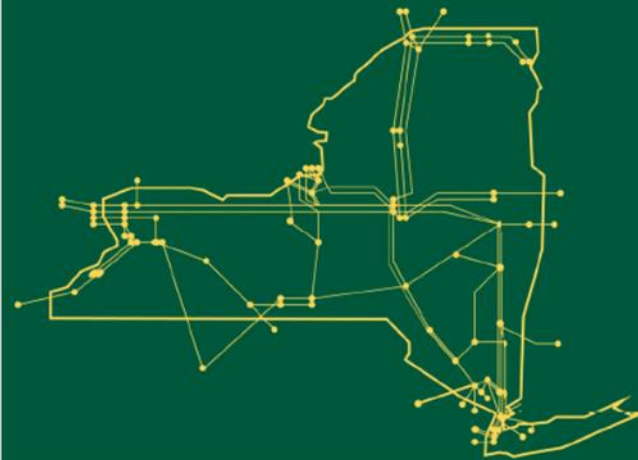
◆ **Supply Curve:**

<i>Supply Curve (Locality)</i>	<i>Units</i>
Existing MW Available	UCAP MW
Self Supply Exemption Project	UCAP MW

Net Short Threshold: Example

- ◆ The Excel workbook posted with today’s ICAPWG meeting materials provides a numerical examples including all the calculations.
 - **Inputs:**
 - Demand Curve(s) and Supply Curve(s) parameters (indicative)
 - Self Supply LSE characteristics (for illustrative purposes only)
 - *Serves Load located in NYC*
 - *Existing Long Term Commitments and self-owned supply*
 - **Detailed calculations (for each Locality and the NYCA):**
 - A. “Total Capacity Costs without Entry” is equal to dollar amount the Self Supply LSE would pay to purchase capacity to serve its capacity obligations before the entry of Self Supply Examined Facility
 - B. “Total Capacity Costs with Entry” is equal to dollar amount the Self Supply LSE would pay to purchase capacity to serve its capacity obligations once the Self Supply Examined Facility is in the market
 - **Self Supply LSE Purchase Cost Saving due to Self Supply Examined Facility Entry is the difference between A and B summed over all Localities and the NYCA**
 - If it is smaller than estimated Proportional Entry Costs, the Net Short Threshold is met
 - If summed over all Localities and the NYCA, $A > B + \text{Proportional Entry Costs}$, the Net Short Threshold is not met and the Self Supply Examined Facility is not exempt

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.



www.nyiso.com

Appendix: Net Short Threshold

- ◆ Forecast ICAP Spot Auction Price before and after the Self Supply Examined Facility entry for each Locality and the NYCA
 - $P_{w/o\ entry}$ and $P_{w/entry}$ (in UCAP terms)
- ◆ Estimate UCAP MW Self Supply LSE is to purchase from capacity market for each Locality and the NYCA
 - $UCAP_{w/o\ entry}$ and $UCAP_{w/entry}$
- ◆ Estimate the LSE capacity market purchase cost before and after the Self Supply Examined Facility Entry summed over all Localities and the NYCA
 - $A (\$) = (P_{w/o\ entry} * UCAP_{w/o\ entry})_{NYC} + (P_{w/o\ entry} * UCAP_{w/o\ entry})_{GHI} + (P_{w/o\ entry} * UCAP_{w/o\ entry})_{ROS}$
 - $B (\$) = (P_{w/entry} * UCAP_{w/entry})_{NYC} + (P_{w/entry} * UCAP_{w/entry})_{GHI} + (P_{w/entry} * UCAP_{w/entry})_{ROS}$
- ◆ Estimate Unit Net CONE of the Self Supply Examined Facility to be paid by the Self Supply LSE
 - $C (\$) = \text{Proportional Entry Costs}$
- ◆ Compare A, B, and C
 - If $A \leq B + C$ then Net Short Threshold is met
 - If $A > B + C$ then not exempt