

A schematic diagram of a transmission line system, showing a horizontal line with several vertical lines branching off it, and a diagonal line crossing the horizontal one. The lines are thin and grey, with small colored dots (purple, blue, red) at various points along the lines.

# Installed Capacity (ICAP) Market Training Supplement

A detailed schematic diagram of a transmission line system, showing a complex network of lines with many nodes. The lines are thin and grey, with small colored dots (purple, blue, red) at various points along the lines.

**Nicolé K. Grottoli**

*Senior Market Trainer*

*New York Independent System Operator*

Training Supplement

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# ICAP Training Supplement

- ◆ The purpose of this training supplement is to address the following questions:
  - *Why is excess UCAP purchased on-behalf of LSEs in the ICAP Spot Auction?*
  - *How is the amount of excess UCAP to be purchased determined? (includes an example)*
  - *How is the amount of excess UCAP purchased allocated among LSEs?*
  - *Which screens in the ICAP AMS should a Market Participant view to determine the amount(s) of UICAP purchased and/or sold?*
- ◆ Trainees should have a general working knowledge of the Installed Capacity Market in order to fully understand the material in this training supplement.

# ICAP Training Supplement

- ❑ An LSE with a deficiency in any location must purchase UCAP to satisfy that deficiency
  
- ❑ Why is excess UCAP purchased on-behalf of LSEs in the ICAP Spot Auction?
  - *More offers to sell exist than bids to purchase*
  - *LSEs buy the excess UCAP in the Spot auction*
  - *LSEs can offer into the Spot auction any surplus UCAP that they've acquired beyond their UCAP requirements*

# ICAP Training Supplement

- ❑ How is the amount of excess UCAP to be purchased determined?
  - *NYCA Requirement*
  - *Locational Requirement*
  - *Transmission District Requirement*
  - *Individual LSE Requirement*
    - A LSE UCAP requirement is based on the contribution of its customers to the forecasted Transmission District (TD) peak load, where the minimum UCAP requirement is the ratio of the LSE's forecasted contribution to the TD peak load to the forecasted total TD peak load, multiplied by the total UCAP requirement for the TD

*\*Refer to Section 3 of the ICAP Manual*

# ICAP Training Supplement

- How is the amount of excess UCAP to be purchased determined? – cont'd

## *Calculation:*

***Min UCAP Requirement for an individual LSE within TD = TD Minimum UCAP Requirement X (Forecast Contribution to Peak Demand in TD for LSE / Forecast Capability Year One-Hour independent Peak Load for TD)***

- *Where TD Minimum UCAP Requirement = NYCA Min UCAP Requirement X (Forecast Capability Year One-Hour independent Peak Load for TD / Sum of Forecast Capability Year One-Hour independent Peak Load for all TDs)*

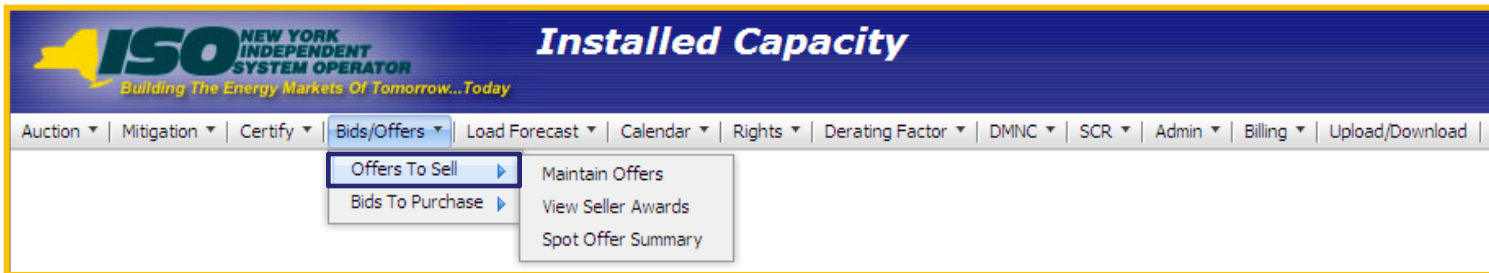
*\* Refer to Section 3 of the ICAP Manual*

# ICAP Training Supplement

- How is the amount of excess UCAP to be purchased determined? (cont'd)
  - *LSEs are required to purchase all UCAP that is offered under the Demand Curve*
  - *The amount purchased is allocated among all LSEs*
  - *As an example, if LI has excess UCAP, then a LSE serving load in LI is required to purchase the excess UCAP by default, even after the LSE has met its requirement. The LI excess UCAP that the LSE was required to purchase in LI will be used to cover any remaining deficiency the LSE has in NYCA. The LSE may also be required to purchase NYCA excess UCAP.*

# ICAP Training Supplement

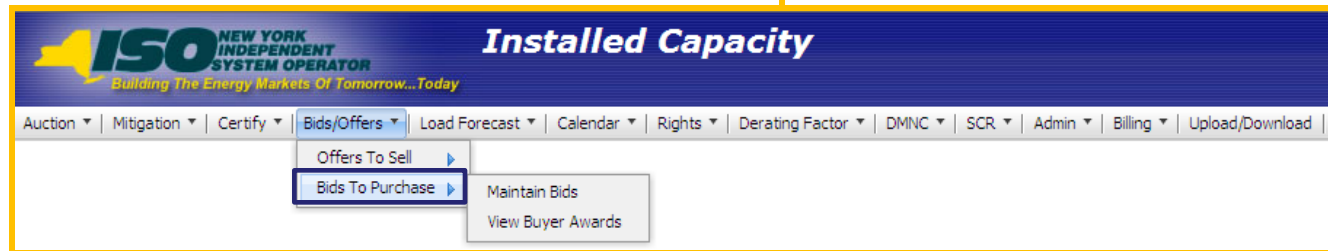
- ❑ Which screens should an MP view to determine the amount(s) of UCAP purchased and/or sold?
  - *The ICAP AMS screens...*
    - [http://www.nyiso.com/public/markets\\_operations/market\\_data/icap/index.jsp](http://www.nyiso.com/public/markets_operations/market_data/icap/index.jsp)



The screenshot shows the 'Installed Capacity' page header with the ISO logo and tagline. Below the header is a navigation bar with several dropdown menus. The 'Bids/Offers' menu is open, showing three options: 'Offers To Sell', 'Bids To Purchase', and 'Spot Offer Summary'. Other visible menu items include Auction, Mitigation, Certify, Load Forecast, Calendar, Rights, Derating Factor, DMNC, SCR, Admin, Billing, and Upload/Download.



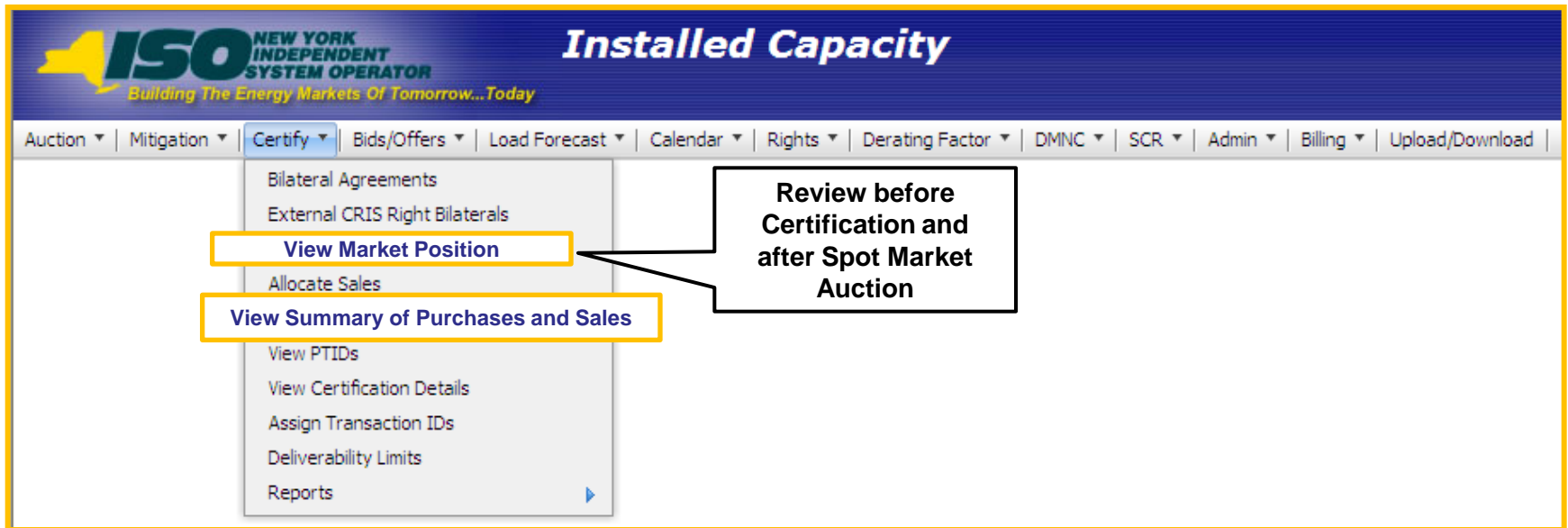
This screenshot shows the 'Installed Capacity' page with the 'Certify' menu open. The 'Certify' dropdown menu lists several options: 'Bilateral Agreements', 'External CRIS Right Bilaterals', 'View Market Position', 'Allocate Sales', 'View Summary of Purchases and Sales', 'View PTIDs', 'View Certification Details', 'Assign Transaction IDs', 'Deliverability Limits', and 'Reports'. The 'Bids/Offers' menu is also visible in the navigation bar.



This screenshot shows the 'Installed Capacity' page with the 'Bids/Offers' menu open. A sub-menu is visible, showing 'Offers To Sell' and 'Bids To Purchase'. The 'Bids To Purchase' option is highlighted, and a further sub-menu is open, showing 'Maintain Bids' and 'View Buyer Awards'. Other menu items in the navigation bar are visible.

# ICAP Training Supplement

- ❑ Which screens should an MP view to determine the amount(s) of UCAP purchased and/or sold?



The screenshot shows the 'Installed Capacity' interface with the 'Certify' menu open. The menu items are:
 

- Bilateral Agreements
- External CRIS Right Bilaterals
- View Market Position** (highlighted with a yellow box)
- Allocate Sales
- View Summary of Purchases and Sales** (highlighted with a yellow box)
- View PTIDs
- View Certification Details
- Assign Transaction IDs
- Deliverability Limits
- Reports

 A callout box points to the highlighted items with the text: **Review before Certification and after Spot Market Auction**.

- Refer to the *ICAP Automated Market User's Guide, Section 6.0*, for detailed screen descriptions:
  - <http://www.nyiso.com/public/webdocs/documents/guides/IAMUG.pdf>



# Excess Calculation Example

- 1) Identify the UCAP MW requirements for the specific capability period for the following locations: LI, NYC and NYCA
- 2) Determine the LSE UCAP requirement for the locations: NYC, LI and NYCA
  - *The calculation is based on their load ratio share*
- 3) Calculate the portion attributed to the LSE for each location separately (NYC, LI and ROS)
  - *Individual LSE Requirement / Total Locational Requirement*
- 4) Identify the total awarded excess and awarded deficiency by location using the Post Spot Auction Summary screen
- 5) Determine the excess calculation awarded to the LSE in the Spot Auction
  - *Portion attributed to the LSE for each location X awarded excess by location*

# 1) Identify the UCAP MW requirements for the specific capability period

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## Installed Capacity

View ICAP and UCAP Calculations

Auction ▾ | Mitigation ▾ | Certify ▾ | Bids/Offers ▾ | Load Forecast ▾ | Calendar ▾ | Rights ▾ | Derating Factor ▾ | DMNC ▾ | SCR ▾ | Admin ▾ | Billing ▾ | Upload/Download |

Season: Winter 2012-2013

### Post Data

Posted Date	Posted By
17-Sep-2012 02:01 PM	Pete Morrison

### Locational Calculations

Location	Forecasted Peak Load	Requirement %	Derating Factor %	ICAP MW Requirement	UCAP MW Requirement	UCAP Effective %
LI	5,525.6	99.00%	9.34%	5,470.3	4,959.4	89.75%
NYC	11,500.0	83.00%	5.11%	9,545.0	9,057.3	78.76%
NYCA	33,294.6	116.00%	7.17%	38,621.7	35,852.6	107.68%

### Transmission District Loads

Transmission District	Forecasted Peak Load	ICAP MW Requirement	UCAP MW Requirement
Metering Authority - Central Hudson Gas and Electr	1,133.3	1,314.6	1,220.4
Metering Authority - Consolidated Edison of NY	13,430.5	15,579.4	14,462.3
Metering Authority - Long Island Power Authority	5,508.3	6,389.6	5,931.5
Metering Authority - New York Power Authority	576.1	668.3	620.4
Metering Authority - New York State Electric & Gas	3,126.7	3,627.0	3,366.9
Metering Authority - Niagara Mohawk	6,749.1	7,828.9	7,267.6
Metering Authority - Orange and Rockland Utilities	1,158.3	1,343.6	1,247.3
Metering Authority - Rochester Gas and Electric	1,612.3	1,870.3	1,736.2
<b>Total</b>	<b>33,294.6</b>	<b>38,621.7</b>	<b>35,852.6</b>

## 2) Determine the LSE UCAP requirement for the locations: NYC, LI and NYCA (labeled as Rest of State (ROS))

MP Name: LSE_Sample_123			Season: Winter 2012-2013		Month Nov/2012		
Location	Purchases	Sales Allocated to Purchases	Requirements	Generator Capacity	Sales Allocated to Generators	Excess Capacity	Overall Position Long / (Deficient)
LI	15.88	0.7	<b>10.5</b>	0.7	0.7	0.0	4.68
NYC	850.26	11.1	<b>715.2</b>	503.4	503.4	0.0	123.96
ROS	1405.2	155.2	<b>1168.0</b>	16.4	16.4	0.0	82.0
HQ	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IESO	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PJM	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>2271.34</b>	<b>167.0</b>	<b>1893.7</b>	<b>520.5</b>	<b>520.5</b>	<b>0.0</b>	<b>210.64</b>

### 3) Calculate the portion attributed to the LSE for each location separately (NYC, LI and ROS)

- ◆ Use the requirement for each location attributed to LSE divided by the total locational requirement
- ◆ LSE Requirement / Total Locational Requirement
- ◆ LI portion:  $10.5 / 4,959.4 = 0.0021172$
- ◆ NYC Portion:  $715.2 / 9,057.3 = 0.0789639$
- ◆ ROS portion:  $1168 / 21,835.9 = 0.0534899$

Where ROS is calculated as 35,852.6 (NYCA)

- 4,959.4 (LI)


- 9,057.3 (NYC)

21,835.9 (ROS)

## 4) Identify the total excess and deficiency awards by location using Post Spot Auction Summary screen

Season		Winter 2012-2013	Auction Month/Year		Nov/2012	Display
<b>Post Spot Auction Summary</b>						
Winter 2012-2013 Capability Period 11/2012 Spot Market Auction Results - UCAP Posted Date: 10/30/2012 09:31 AM						
						<b>11/2012</b>
<b>NYC</b>						
	Awarded Deficiency (MW)					3,215.3
	Awarded Excess (MW)					1,364.4
	% Excess Above Requirement					15.06
	Price (\$/kW-M)					\$3.36
<b>LI</b>						
	Awarded Deficiency (MW)					0.4
	Awarded Excess (MW)					876.7
	% Excess Above Requirement					17.68
	Price (\$/kW-M)					\$0.71
<b>NYCA</b>						
	Awarded Deficiency (MW)					7,672.7
	Awarded Excess (MW)					3,988.000
	% Excess Above Requirement					11.12
	Price (\$/kW-M)					\$0.71
<b>HQ</b>						
	Awarded as part of NYCA Def./Exc. (MW)					482.300
	Price (\$/kW-M)					\$0.71
<b>IESO</b>						
	Awarded as part of NYCA Def./Exc. (MW)					0.000
	Price (\$/kW-M)					\$0.00
<b>NE</b>						
	Awarded as part of NYCA Def./Exc. (MW)					0.000
	Price (\$/kW-M)					\$0.00
<b>PJM</b>						
	Awarded as part of NYCA Def./Exc. (MW)					0.000
	Price (\$/kW-M)					\$0.00
	<b>Total Awarded Deficiency (MW)</b>					<b>10,888.400</b>
	<b>Total Awarded (MW)</b>					<b>14,876.400</b>
	<b>ROS Price Paid By LSE's (Weighted Avg.)</b>					<b>\$0.710</b>

## 5) Determine the excess calculation awarded to the LSE in the Spot Auction

 <b>Installed Capacity</b> <b>Spot Market Auction Purchases</b>							
Auction ▾   Mitigation ▾   Certify ▾   Bids/Offers ▾   Load Forecast ▾   Calendar ▾   Rights ▾   Derating Factor ▾   DMNC ▾   SCR ▾   Admin ▾   Billing ▾   Upload/Download ▾							
MP Name: <i>LSE_Sample_123</i>				Auction Type: Spot (Winter 2012-2013)		Auction Month/Year Nov/2012	
Spot Market Auction Purchases							
Bids				Awards			
Excess / Deficient	Location	Bid Price [\$/kW-per month) expressed to nearest \$.01]	Bid MW [expressed to nearest 0.1MW]	Awarded MW	MCP (\$/kW/Month)	Awarded \$ Amount	Mitigated MW
Excess	ROS			213.317	0.71		0.000
Deficient	ROS				0.71		0.000
Excess	LI			1.856	0.71		0.000
Deficient	LI				0.71		0.000
Excess	NYC			107.738	3.36		0.000
Deficient	NYC				3.36		0.000
Total							

**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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