

NYISO Energy Marketplace

Kelly Stegmann

Program Administrator, Market Training, NYISO

New York Market Orientation Course (NYMOC) Webinar

June 3-5, 2025 Remote Learning



Energy Marketplace Objectives

Market Features and Function

- Identify five features of the NYISO Energy Market
- Understand the bidding and scheduling process as it relates to the Two Settlement System

Load Forecasting and Bidding

- Describe the LSE and NYISO load forecasting process
- Identify the different load bidding and purchasing options



Objectives – cont'd

Supply Offers

- Describe the different offer parameters on a generator offer
- Distinguish between the different generator operating modes

Commitment, Dispatch and Market Timeline

- Identify the inputs to the Day-Ahead and Real-Time commitment and dispatch process.
- Identify the key points of the DAM and RT Market timelines



Energy Market Features

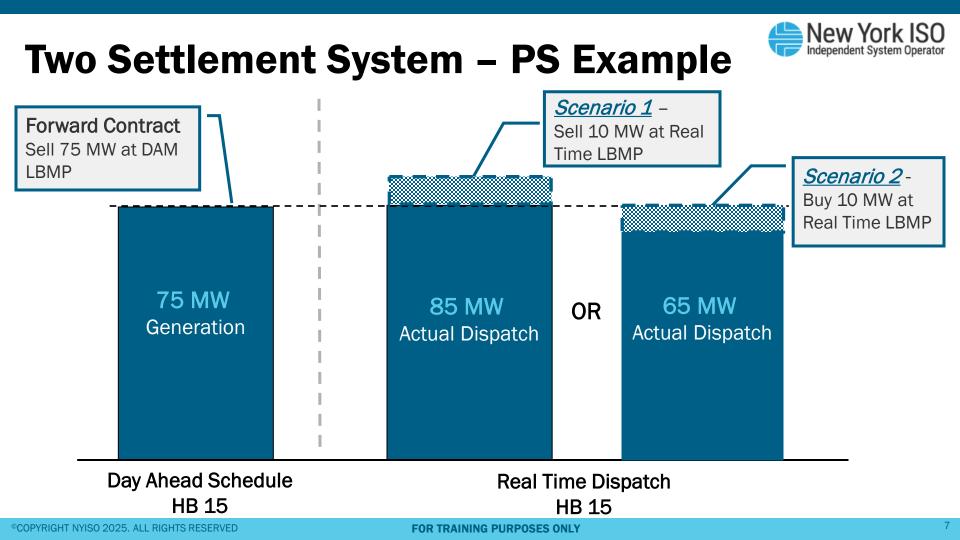
- Maintains reliability rules while satisfying system constraints
- Administers purchase/sale of electrical energy at the wholesale level
- Evaluates competitive bids/offers
- Provides load and generator schedules
- Produces prices for settlement mechanism

Two Settlement System



Two Settlement System Day Ahead vs. Real Time Market

Day Ahead Market	Real Time Market
Buy and Sell Energy the day prior to actual consumption or production	Buy and Sell the difference during the consumption day
DAM Settlement based upon schedules	 Real Time Market balances DAM Schedule to Actual Usage
Financially binding	Balancing Market





Two Settlement System – PS Example

Power Supplier Selling into Day Ahead Market (DAM)					
Hour Beginning (HB)	DAM MWh	DAM LBMP \$/MWh	DAM Settlement \$		
HB 15	75 MWh	\$10/MWh	\$750		
Total DAM \$ HB 15					



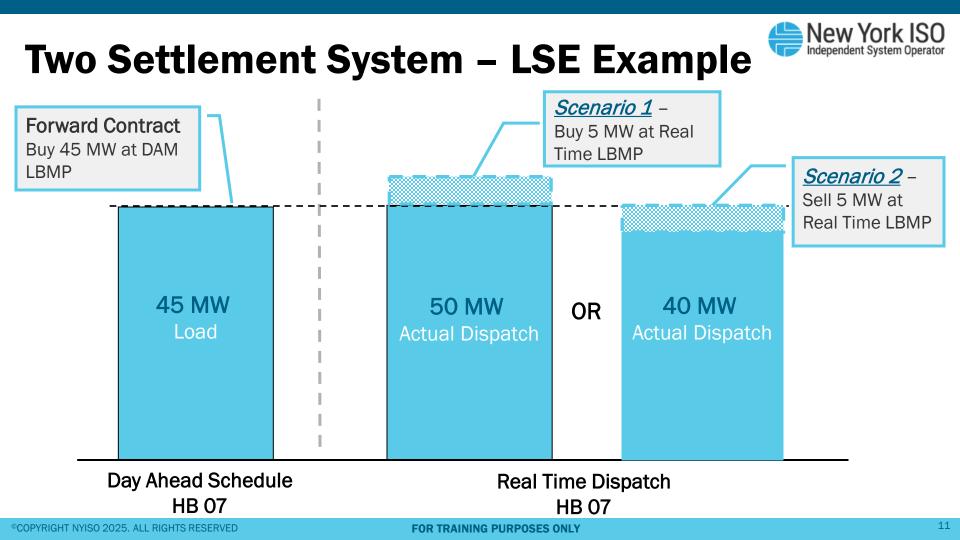
Two Settlement System – PS Example

Power Supplier Selling into Real Time Market (Balancing)					
НВ	DAM MWh	RT MWh <i>(RT – DAM)</i>	RT LBMP \$/MWh	RT Settlement \$	
HB 15 <i>Scenario 1</i>	75 MWh	85 MWh <i>(10 MWh)</i>	\$20/MWh	\$200	
HB 15 <i>Scenario 2</i>	75 MWh	65 MWh <i>(- 10 MWh)</i>	\$20/MWh	- \$200	
HB 15 Scenario *3*	0 MWh	75 MWh	\$20/MWh	\$1500	



Two Settlement System – PS Example

Total Power Supplier Settlement for HB 15						
Scenario	DAM \$	RT \$	Total \$ (DAM \$ + RT \$)			
Scenario 1	\$750	\$200	\$950			
Scenario 2	\$750	- \$200	\$550			
Scenario 3	\$O	\$1500	\$1500			





Two Settlement System – LSE Example

Power Supplier Selling into Day Ahead Market (DAM)					
Hour Beginning (HB)	DAM MWh	DAM LBMP \$/MWh	DAM Settlement \$		
HB 07	- 45 MWh	\$30/MWh	-\$1350		
		Total DAM \$ HB 07			



Two Settlement System – LSE Example

Load Serving E	Load Serving Entity Buying from Real Time Market (Balancing)					
НВ	DAM MWh	RT MWh <i>(RT – DAM)</i>	RT LBMP \$/MWh	RT Settlement \$		
HB 07 <i>Scenario 1</i>	- 45 MWh	- 50 MWh <i>(- 5 MWh)</i>	\$50/MWh	- \$250		
HB 07 <i>Scenario 2</i>	- 45 MWh	- 40 MWh <i>(5 MWh)</i>	\$50/MWh	\$250		
HB 07 Scenario *3*	0 MWh	- 45 MWh	\$50/MWh	- \$2250		



Two Settlement System – LSE Example

Total Load Serving Entity Settlement for HB 07						
Scenario	DAM \$	RT \$	Total \$ (DAM \$ + RT \$)			
Scenario 1	- \$1350	- \$250	- \$1600			
Scenario 2	- \$1350	\$250	- \$1100			
Scenario 3	\$O	- \$2250	- \$2250			

[©] COPYRIGHT NYISO 2025. ALL RIGHTS RESERVED.

FOR TRAINING PURPOSES ONLY



Load Forecasting

- NYISO Load Forecast
- LSE Load Forecast
- Load Bidding and Purchasing
- Results



NYISO Load Forecasting

- NYISO Forecast used for Scheduling/Reliability
 - Historical Data
 - Weather
 - TO Forecast Submittals
 - Zonal basis, then summed
- Posted by 8 a.m. Each Day
 - 6 Days Provided



LSE Load Forecast

- Used for Initial Billing Purposes
- Provided 7 Days in Advance
- Can be Updated
 - After DAM closes up until 12:00 Noon the day after operating day



Monitoring LSE Load Forecasting

- NYISO Credit Department
 - Monitors LSE Load Forecasting 3x/Month
 - Benchmarks against:
 - Forecast vs. Actual Historical Load
 - Forecast vs. Monthly UCAP Requirements
 - NYISO Credit Dept. may contact LSE if under forecasting is observed
 - Improve LSE load forecasting accuracy
 - Reconcile variations



Load Bidding and Purchasing

- Load Serving Entities (LSE) bid to procure energy from NYISO
 - Fixed Bids
 - Price Capped Load Bids
- Real Time Energy Purchase (No Bid entered)

Load Bids entered in the DAM only



- Bids Submitted to Market Information System (MIS)
 - Interface between NYISO and Market Participants
 - Bid, Update, and View

Building The Energy Markets Of TomorrowToday	Welcome To The Bidding & Scheduling System	Logout
Company Newsroom	Products Market Data Services	Documents Committees
Details - Load Bus Details - Log Out - Metering Reconciliation	<u>ment Parameters</u> - <u>Generator Details</u> - <u>Generator OOM</u> - <u>Generator</u> - <u>Organization Details</u> - <u>Phγsical Load Bids</u> - <u>Review Generator Bi</u> /NTAC Rates - <u>Tie Details</u> - <u>Transaction Summary</u> - <u>User Details</u> -	ids - <u>Review Generator Forecasted</u>
Bidding and Scheduling		



- Fixed Bids
 - Load purchases forecasted MWs in DAM
 - Regardless of price

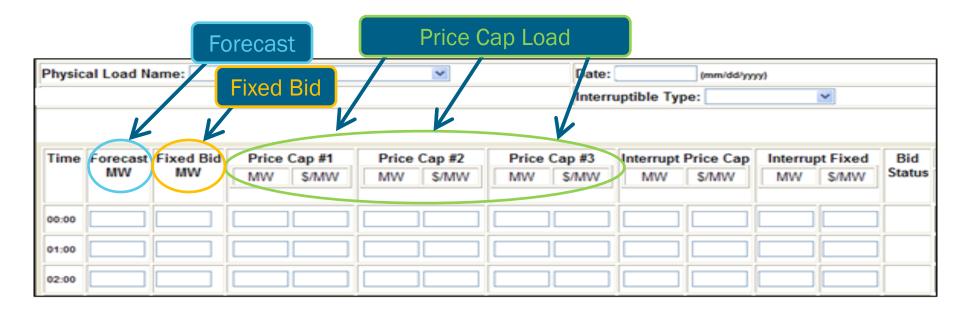


- Price Capped Load Bids
 - \$/MW Price Load is willing to pay
 - 3 Potential Increments
 - Increments are Increasing
 - Load Forecasts 100 MW
 - Bids: 50MW @\$25/MW, 30MW @\$45/MW, & 20MW @\$60/MW



- Combination of Fixed and Price Capped
 - Cannot exceed forecast MW
- Real Time Energy Purchase
 - Done automatically by NYISO







Load Bid Results

- Bid Status posted in MIS
 - Validation Passed
 - Data acceptable---no changes necessary
 - Validation Failed
 - Data will require changes
 - Evaluating
 - After DAM closes
 - Prior to posting



Load Bid Results

- Bid Status posted in MIS
 - Accepted
 - DAM schedule posted
 - Rejected
 - Settled in Real Time
- Results Posted
 - MW (MIS)
 - LBMP (NYISO.com)



LSE MW Settlement Overview

Settlement Invoice	DAM Forecasted MWh	DAM Fixed Bid MWh	DAM Scheduled MWh	RT Actual MWH	DAM Settlement MWh	RT Settlement Balancing MWh
Initial	75	50	50	75 Based solely on the DAM Forecasted MWs	50 Based on the DAM Fixed MWs and Accepted Price Cap Load Bids	25
True-up		-		78 As reported by Metering Authority		3 Plus MP is responsible for interest accrual

LSE should update DAM Forecast by noon the day after the operating day to minimize interest accrual on any true-up invoices.



LBMP 1/26/18

Load Forecasting and Bidding

LSE Bid Screen Recap

Physic	al Load N	ame: L	SE_123	v		untible Type:	HB 0 = \$40 HB 1 = \$50 HB 2 = \$30	
Time	Forecast MW	Fixed Bid MW	Price Cap #1 MW \$/MW	Price Cap #2 MW \$/MW	Price Cap #3 MW \$/MW	MW \$/MW	Interrupt Fixed MW \$/MW	Bid Status
00:00	120	120						
01:00	110		60 20	40 30	10 40			
02:00	100	70	20 25	10 35				

Supply Offers



Supply Offers

Supply Offer Process

- Unit Offer Parameters
- Incremental Energy Offers
- Unit Operating Modes

Results



Supply Offers

Suppliers submit offers to sell energy to the NYISO

- Day Ahead Market Offers
- Real Time Market Offers
- Offers Submitted to Market Information System (MIS)
 - Interface between NYISO and Market Participants
 - Offer, Update, and View

Suiteding The Energy Markets Of TomorrowToday	Welcome To The Bidding & Scheduling Sys	stem
Company Newsroom	Products Market Data Services	s Documents Committees
Administrator Details - Change Password - Generator Commit Details - Load Bus Details - Log Out - Metering Reconciliation Schedules - Review Transaction Bids - Subzone Details - TSC Zone Details -	<u>η</u> - <u>Organization Details</u> - <u>Physical Load Bids</u> - <u>Review Gen</u>	nerator Bids - Review Generator Forecasted
Bidding and Scheduling		



Supply Offer	Minimum Run Time	Minimum hours unit must run once started by NYISO
Parameters	Minimum Down Time	Minimum hours unit must be down once de-committed by NYISO
	Maximum Stops/Day	Number of times unit can be de- committed in dispatch day
	Response Rate	MW per minute
	Nesponse Nate	Normal Emergency
		Regulation
	Market	Day-Ahead (DAM)
		Real Time (RT)



Supply Offer Parameters (Cont'd)	Duration	Hours Unit wants to run
	Expiration Date of Offer	DAM Only
		Gen no longer available for Day Ahead Supplement
	Start Up	Time
		Cost
	Minimum Generation	Lower Operating Limit
		\$/MWh Cost
	Upper Operating Limit	Normal (UOLN)
		Emergency (UOLE)



Supply Offer Parameters *Applicable to Energy Storage Resources (ESRs) only	Lower Operating Limit	
	Upper Storage Limit	
	Lower Storage Limit	
	ESR Outage Type	
	Beginning Energy Level	
	Energy Level Management Mode	



Supply Offer Parameters *Applicable to Co-located Storage Resources (CSRs) only	CSR Injection Limit
	CSR Withdrawal Limit
	CSR Outage Type



Supply Offers – Parameters

Incremental Energy Offers

- \$/MWh Offers
- 11 Incremental Offer Blocks
- Ranges from Min Gen to Upper Operating Limit
- Variable Cost Recovery



Supply Offers – Unit Operating Modes

Economics	MWs
ISO Committed - Economically Selected	 Fixed Fixed Output/Operating Levels No Change to in-hour Schedule
Self Committed Price Taker	 Flexible Flexible Output Following NYISO Base Point Fluctuation
 ISO Committed Flex Self Committed Fixed ISO Committed Fixed 	



Consider this...

- A generator selecting 'Self-Committed' operating mode is likened to LSE entering 'Fixed Load Bid
 - In other words, it wants a schedule regardless of price
- A generator selecting 'ISO-Committed' operating mode is likened to LSE entering 'Price Capped Load Bid'
 - In other words, it wants to be scheduled based on its economic parameters



Unit Operating Mode in Action: Unit wants to be scheduled if LBMP is greater than or equal to its offer and wants to run at a specified MW output...

ISO Committed Flex

Self Committed Flex

Self Committed Fixed



Unit Operating Mode in Action: Unit wants to be scheduled no matter the LBMP and wants to run at a specified MW output...

ISO Committed Flex

Self Committed Flex

Self Committed Fixed



Unit Operating Mode in Action: Unit wants to be scheduled no matter the LBMP and willing to run at varying levels of output...

ISO Committed Flex

Self Committed Flex

Self Committed Fixed



Unit Operating Mode in Action: Unit wants to be scheduled if LBMP is greater than or equal to its offer and willing to run at varying levels of output...

ISO Committed Flex

Self Committed Flex

Self Committed Fixed



Mock-Up
 Generator Bid
 Screen

Generator Bid Generator Name: ESR Beginning Energy Level MWh Fuel Type: Bid Date Num of Hours Market Expiration (DAM only) [mm/dd/yyyy hh:mi) [mm/dd/yyyy hh:mi) [mm/dd/yyyy hh:mi) Energy Bid CSR lajection Limit (MW) CSR Withdrawal Limit (MW) CSR Outage Type [www.store.com/download com/download				
Energy Bid Energy Bid CSR Injection Limit (MW) CSR Withdrawal Limit (MW) Lower Storage Limit (MWh) ESR Energy Management Mode Lower Operating Limit (MW) ESR Energy Management Mode Upper Operating Limit (MW) Ess Energy Upper Operating Limit (MW) Self Scheduled (MW) Emergency Upper Operating Limit (MW) Self Scheduled (MW) Uit Operations 00 Minute MW 55 Minute MW Self Committed Fixed Self Committed Fixed Bid Curve (Block Format) ISO Committed Fixed MW Same SMW MW Opportanity Cost) Minute Spinning Reserves 10 Minute Spinning Reserves MWs 30 Minute Spinning Reserves Minute Meres 30 Minute Spinning Reserves Minute Spinning Reserves 30 Minute Spinning Reserves Minute Spinning Reserves 30 Minute Spinning Reserves Minute Spinning Reserves		gy Level MWh Fuel Type:	Burdened Fuel Price (\$/	Generator D
Energy Bid Energy Bid CSR Injection Limit (MW) CSR Withdrawal Limit (MW) Lower Storage Limit (MWh) Upper Storage Limit (MWh) Iso Self Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Self Scheduled (MW) Uit Operations 00 Minute MW 55 Minute MW 00 Minute MW 54 Minute MW Solf Committed Fixed Self Committed Fixed Solf Committed Fixed Solf Committed Fixed Solf Curve (Block Format) MW MW MW SMW MW SMW MW SMW MW SMW MW SMW MWs SMW MWs SMW MWs SMIW MWs SMIW MWs SMIW MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs Solf Manuer Syntaing Reserves MWs Sof Manuer Syntaing Reserves	· · · · · · · · · · · · · · · · · · ·			ald D
Energy Bid Energy Bid CSR Injection Limit (MW) CSR Withdrawal Limit (MW) Lower Storage Limit (MWh) Upper Storage Limit (MWh) Iso Self Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Self Scheduled (MW) Uit Operations 00 Minute MW 55 Minute MW 00 Minute MW 54 Minute MW Solf Committed Fixed Self Committed Fixed Solf Committed Fixed Solf Committed Fixed Solf Curve (Block Format) MW MW MW SMW MW SMW MW SMW MW SMW MW SMW MWs SMW MWs SMW MWs SMIW MWs SMIW MWs SMIW MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs SMIMU Syntaing Reserves MWs Solf Manuer Syntaing Reserves MWs Sof Manuer Syntaing Reserves	Bid Date Num of H	Narket	Expiration (DAM or	aly)
Energy Bid CSR Injection Limit (MW) CSR Withdrawal Limit (MW) CSR Outage Type Lower Storage Limit (MWh) Upper Storage Limit (MWh) ESR Energy Management Mode Lower Operating Limit (MW) Upper Operating Limit (MW) ESR Energy Upper Operating Limit (MW) ESR Outage Type Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation Cost (\$) Self Scheduled (MW) Unit Operations Host Load (MW) Start-Up Cost (\$) 00 Minute MW 55 Minute MW ISO Committed Flex Self Committed Flex Self Committed Flex Bid Curve (Block Format) MW MW Self Committed Fixed ISO Committed Fixed ISO Committed Fixed SANW MW MW Same Management Self Committed Fixed ISO Committed Fixed ISO Committed Fixed ISO Committed Fixed Bid Curve (Block Format) MW MW Same Monagement Self Committed Fixed ISO Commit			(mm/d	d/vvvv hh:mi)
CSR Injection Limit (MW) CSR Withdrawal Limit (MW) CSR Outage Type Lower Storage Limit (MWh) Upper Storage Limit (MWh) ESR Energy Management Mode Lower Operating Limit (MW) ESR Outage Type Upper Operating Limit (MW) ESR Energy Management Mode Lower Operating Limit (MW) ESR Outage Type Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation Cost (\$) Self Scheduled (MW) Unit Operations Iso Committed Flex Self Committed Flex Self Committed Flex 00 Minute MW 15 Minute MW 30 Minute MW 45 Minute MW Self Committed Flex Self Committed Flex Self Curve (Block Format) MW Iso Committed Flex Self Committed Flex Self Committed Flex S/MW S/MW S/MW Iso Committed Flex MWs S/MW 10 Munte Spinning Reserves Iso Committed Flex MWs S/MW Iso Committed Flex S/MW 10 Munte Son-synchronized Reserves Iso Committed Flex MWs S/MW Iso Committed Flex S/MW 10 Munte Son-synchronized Reserves Iso Committed Flex Iso Committed Flex Iso Minute S/MWs S/MW <t< td=""><td></td><td></td><td></td><td></td></t<>				
Lower Storage Limit (MWh) Upper Storage Limit (MWh) ESR Energy Management Mode Lower Operating Limit (MW) ESR Outage Type Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation Cost (\$) Iminimum Generation Cost (\$) Self Scheduled (MW) Unit Operations Host Load (MW) Start-Up Cost (\$) 00 Minute MW 15 Minute MW 30 Minute MW 5 Solf Committed Flex Self Committed Flex 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 10 Munte Sprinting Reserves Item Solf Committed Fixed Item Solf Committed Fixed Item Solf Committed Fixed 10 Munte Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed 10 Minute Non-Synchronized Reserves Item Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed 10 Munte Non-Synchronized Reserves Item Solf Correct Solf Co	Energy Bid			
Lower Storage Limit (MWh) Upper Storage Limit (MWh) ESR Energy Management Mode Lower Operating Limit (MW) ESR Outage Type Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation Cost (\$) Iminimum Generation Cost (\$) Self Scheduled (MW) Unit Operations Host Load (MW) Start-Up Cost (\$) 00 Minute MW 15 Minute MW 30 Minute MW 5 Solf Committed Flex Self Committed Flex 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 81d Curve (Block Format) MW Solf Committed Fixed ISO Committed Fixed ISO Committed Fixed 10 Munte Sprinting Reserves Item Solf Committed Fixed Item Solf Committed Fixed Item Solf Committed Fixed 10 Munte Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed 10 Minute Non-Synchronized Reserves Item Solf Correct Solf Committed Fixed Item Solf Correct Solf Committed Fixed 10 Munte Non-Synchronized Reserves Item Solf Correct Solf Co	CSR Injection Limit (MW)	CSR Withdrawal Limit (MW)	CSR Outage Type	
ISO Self Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation (MW) Minimum Generation (Cost (S) Self Scheduled (MW) Unit Operations ISO Committed Flex Self Committed Flex 00 Minute MW 15 Minute MW 16 Minute MW 16 Minute MW 180 Committed Flex Self Committed Flex Host Load (MW) Bid Curve (Block Format) ISO Committed Fixed ISO Committed Fixed S/MW SAIW ISO Committed Fixed ISO Committed Fixed S/MW Image: Similar Spinning Reserves MWs SAIW 10 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves			M	
ISO Self Upper Operating Limit (MW) Emergency Upper Operating Limit (MW) Minimum Generation (MW) Minimum Generation (Cost (S) Self Scheduled (MW) Unit Operations ISO Committed Flex Self Committed Flex 00 Minute MW 15 Minute MW 16 Minute MW 16 Minute MW 180 Committed Flex Self Committed Flex Host Load (MW) Bid Curve (Block Format) ISO Committed Fixed ISO Committed Fixed S/MW SAIW ISO Committed Fixed ISO Committed Fixed S/MW Image: Similar Spinning Reserves MWs SAIW 10 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Similar Spinning Reserves Image: Similar Spinning Reserves				
Self Scheduled (MW) Unit Operations 00 Minute MW 15 Minute MW 150 Committed Flex Self Committed Flex Self Curve (Block Format) Self Committed Fixed MW MW (Basepoint) Iso Committed Fixed S/MW Iso Committed Fixed MW Iso Committed Fixed S/MW Iso Committed Fixed Ion Minute Spinning Reserves Iso Committed F	Lower Storage Limit (MWh) Upper Storage Limit (MWh)		Lower Operating Limit (MW)	ESR Outage Type
Self Scheduled (MW) Unit Operations 00 Minute MW 15 Minute MW 150 Committed Flex Self Committed Flex Self Curve (Block Format) Self Committed Fixed MW MW (Basepoint) Iso Committed Fixed S/MW Iso Committed Fixed MW Iso Committed Fixed S/MW Iso Committed Fixed Ion Minute Spinning Reserves Iso Committed F				
00 Minute MW 15 Minute MW 45 Minute MW 45 Minute MW 45 Minute MW Self Committed Flex Self Committed Flex Bid Curve (Block Format) SMW Self Committed Fixed ISO Committed Fixed ISO Committed Fixed S/MW SMW SMW SMW SMW (Opportunity Cost) Iso SMW SMW 10 Minute Spinning Reserves Item MVs SMW 10 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso Instruction Reserves Iso Iso Iso Iso Iso Iso Iso <	Upper Operating Limit (MW)	Emergency Upper Operating Limit (MW)	Minimum Generation (MW)	Minimum Generation Cost (\$)
00 Minute MW 15 Minute MW 45 Minute MW 45 Minute MW 45 Minute MW Self Committed Flex Self Committed Flex Bid Curve (Block Format) SMW Self Committed Fixed ISO Committed Fixed ISO Committed Fixed S/MW SMW SMW SMW SMW (Opportunity Cost) Iso SMW SMW 10 Minute Spinning Reserves Item MVs SMW 10 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso 30 Minute Spinning Reserves Iso Iso Iso Instruction Reserves Iso Iso Iso Iso Iso Iso Iso <				
00 Minute MW 15 Minute MW 45 Minute MW 45 Minute MW Self Committed Fixed Bid Curve (Block Format) Self Committed Fixed ISO Committed Fixed MW (Basepoint) Image: Self Committed Fixed S/MW S/MW Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed MW Image: Self Committed Fixed Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed MW Image: Self Committed Fixed Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed MW Image: Self Committed Fixed Image: Self Committed Fixed S/MW Image: Self Committed Fixed Image: Self Committed Fixed Minute Spinning Reserves Image: Self Committed Fixed Image: Self Committed Fixed 10 Minute Spinning Reserves Image: Self Committed Fixed Image: Self Committed Fixed 30 Minute Non-Synchronized Reserves Image: Self Committed Fixed Image: Self Committed Fixed 30 Minute Non-Synchronized Reserves Image: Self Committed Fixed Image: Self Committed Fixed </td <td>Self Scheduled (MW)</td> <td></td> <td>Host Load (MW)</td> <td>Start-Up Cost (\$)</td>	Self Scheduled (MW)		Host Load (MW)	Start-Up Cost (\$)
MW Basepoint) S/MW S/MW (Opportunity Cost) S/MW S/MW S/MW (Opportunity Cost) S/MW 10 Minute Spinning Reserves S/MW 10 Minute Spinning Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW	00 Minute MW 15 Minute MW 30 Minute MW 45 Minute MW			
MW Basepoint) S/MW S/MW (Opportunity Cost) S/MW S/MW S/MW (Opportunity Cost) S/MW 10 Minute Spinning Reserves S/MW 10 Minute Spinning Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW 30 Minute Non-Synchronized Reserves S/MW		_		
(Basepoint) Image: Constraint of the second secon				
S/MW S/MW S/MW S/MW (Opportunity Cost) Image: Constraint of the second s				
S/MW (Opportunity Cost) Image: Cost of the second				
Item MWs Ancillary Services Item 10 Minute Spinning Reserves 10 Minute Spinning Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves	S/MW			
Item MWs Ancillary Services Item 10 Minute Spinning Reserves 10 Minute Spinning Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves 30 Minute Non-Synchronized Reserves	\$/MW			
Ancillary Services Item MWs 10 Minute Spinning Reserves Image: Spinning Reserves 10 Minute Non-Synchronized Reserves Image: Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Spinning Reserves Image: Spinning Reserves Image: Spinning Reserves	(Opportunity Cost)			
10 Minute Spinning Reserves Image: Spinning Reserves 10 Minute Non-Synchronized Reserves Image: Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Spinning Reserves Regulation Capacity Image: Spinning Reserves				
10 Minute Non-Synchronized Reserves 30 Minute Spinning Reserves 30 Minute Non-Synchronized Reserves Regulation Capacity	Item	1	MWs	\$/MW
30 Minute Spinning Reserves Image: Spinning Reserves 30 Minute Non-Synchronized Reserves Image: Spinning Reserves Regulation Capacity Image: Spinning Reserves				
30 Minute Non-Synchronized Reserves Regulation Capacity				
Regulation Capacity				
	Regulation Movement			



Supply Offer Results

- Offer Status posted in MIS
 - Validation Passed
 - Data acceptable---no changes necessary
 - Validation Failed
 - Data will require changes
 - Evaluating
 - After DAM (or RT) closes
 - Prior to posting



Supply Offer Results

- Offer Status posted in MIS
 - Accepted
 - Unit is committed
 - DAM schedule posted
 - Rejected
 - Unit is not committed

New York ISO

Supply Offers

Supply Offer Results

- Results Posted in MIS
 - Market
 - MW
- Prices Posted on NYISO.com
 - LBMP



Building The Energy Meinels Of TomorrowToday	Welcome To The Bidding & Scheduling System	Lopout
Company Newsroom	Products Market Data Services	Documents Committees
		E Details Load Bus Details Log Out <u>Organization Details_</u> - <u>Physical Load Bids_</u> - <u>Review Generator Bids</u> Details <u>User Details Virtual Load Bids Virtual Supply Bids_</u> - <u>Zone Details_</u> -

Generator Bid Results

		Bid Identification					Schedule	es (MW)			
Date	Market	Generator	Status	Time	Energy	10 Min Spin	10 Min Non-Synch	30 Min Spin	30 Min Non-Synch	Regulation Capacity	Op Cap Reserve
10/12/2013 00:00 EDT	DAM		VALIDATION PASSED								
10/12/2013 00:00 EDT	DAM		BID ACCEPTED	00:00	40	15		0		6	0
10/12/2013 01:00 EDT	DAM		VALIDATION PASSED					_			
10/12/2013 01:00 EDT	DAM		BID ACCEPTED	01:00	40	15		0		6	0
10/12/2013 02:00 EDT	DAM		VALIDATION PASSED		30	15		0		6	0
10/12/2013 02:00 EDT	DAM		BID ACCEPTED	02:00		15		U		U	U
10/12/2013 03:00 EDT	DAM		VALIDATION PASSED		30	15		0		6	0
10/12/2013 03:00 EDT	DAM		BID ACCEPTED	03:00				_			

Page Ref: E



• Out of Economic Merit – OOM

- Generator asked to produce different level of output from schedule
- Necessary to maintain <u>system reliability</u>
- Requested by
 - NYISO
 - Transmission Owner



OOM - Supplemental Payments

- Bid Production Cost Guarantee <u>BPCG</u>
 - NYISO guarantees generator will not incur net loss if generator is committed in DAM or <u>above DAM schedule</u>
 - Meets eligibility criteria
 - Sum of all hourly values for given day results in net loss
- BPCG References
 - MST Attachment C
 - OATT Schedule 1 Section 4B
 - MPUG 7.3.1



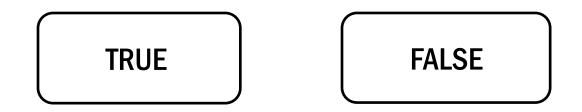
OOM - Supplemental Payments

- Day Ahead Margin Assurance Payment <u>DAMAP</u>
 - Payment for generators required to buy back Energy or Ancillaries in RT, due to <u>dispatching below DAM schedule</u>
 - Meets eligibility criteria
- DAMAP References
 - MST Attachment J
 - Accounting & Billing Manual





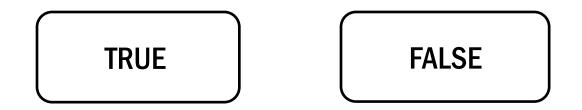
TRUE or FALSE: Accepted Day-Ahead Schedules are Financially binding







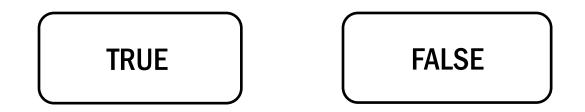
TRUE or FALSE: The RT Market Balances DAM Schedules to Actual Production







TRUE or FALSE: LSEs Bid into the DAM and RT Market to Purchase Energy





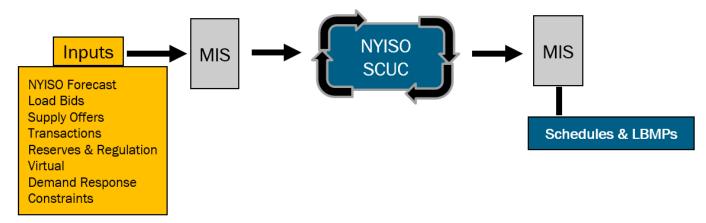
Objectives

- Commitment and Dispatch
 - Minimize the as-bid production cost
 - Satisfy system constraints and reliability rules
- Time-Line
 - Bidding available up to 14 days prior to Operating Day
 - DAM closes 5 a.m.
 - DAM Schedules and LBMP Posted by 11 a.m.
 - RT closes 75 minutes prior to Operating Hour



Market Process - DAM

- DAM uses Security Constrained Unit Commitment (SCUC)
 - DAM Schedules
 - DAM LBMP
 - Each Hour of the Day





- RT Market uses
 - Real Time Commitment (RTC)
 - Committing Generators for Dispatching
 - Advisory RT Base Points
 - Advisory RT LBMPs



- RT Market also uses
 - Supplemental Resource Evaluation (SRE)
 - Additional Resource Committal
 - Process used to commit additional resources outside of SCUC and RTC
 - » Used to preserve system reliability and ensure sufficient resources to meet forecasted load and reserve requirements

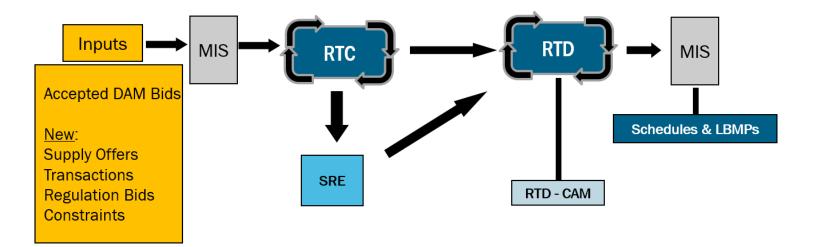


- RT Market also uses
 - Real Time Dispatch (RTD)
 - Dispatches Units in RT
 - 5 Minute Base Points
 - Real Time LBMP
 - Corrective Action Mode (RTD-CAM)



Market Process – Real Time

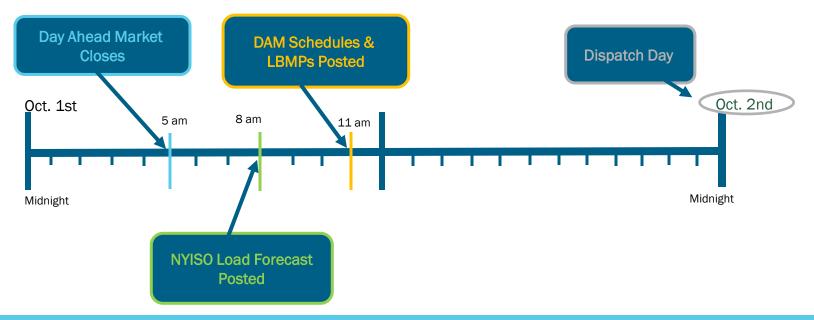
- Real Time Commitment and Real Time Dispatch
 - Includes Supplemental Resource Evaluation (SRE) and RTD Corrective Action Mode (RTD CAM)





Market Process - DAM Time Line

One Day before Dispatch Day





Market Process - RT Market Time Line

Operating Day – Oct 2nd HB 10

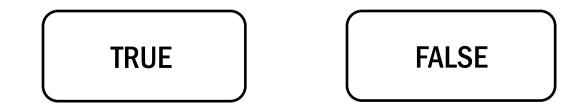


NYISO provides advisory commitment information for a 2.5 hour optimization period





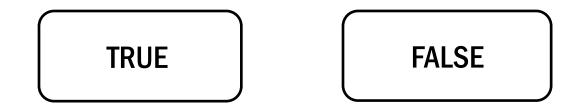
TRUE or FALSE: SCUC is used in the DAM Process







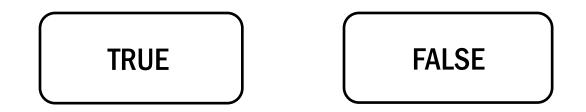
TRUE or FALSE: RTC Dispatches units to run in the RT Market







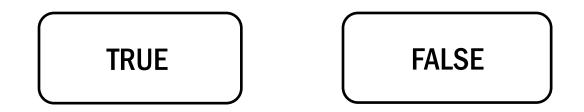
TRUE or FALSE: The DAM closes at 5:00 AM the day before dispatch







TRUE or FALSE: RT Bidding closes 75 minutes prior to the Operating Hour



Energy Marketplace NYISO Website Information



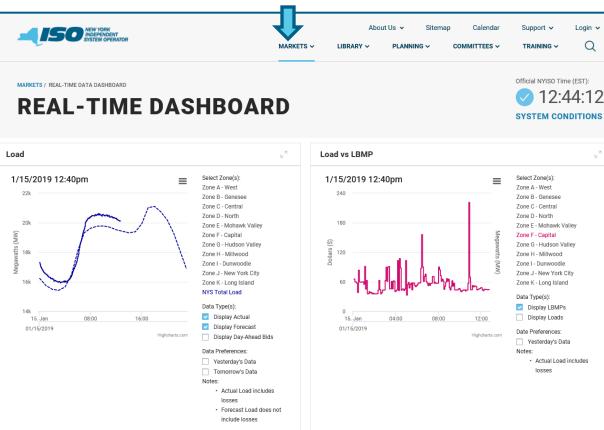
Energy Market – Load Forecast Data

		MARKETS ~	Ab Library ~	bout Us 🗸 Sitem PLANNING 🗸	nap Calendar	Support 🗸	Login 🗸 🗸 🔍							
LOAD DAT					tact Customer Su sholder_services@r									
Markets Real-Time Dashboard Interactive Energy Pricing Map	Load Forecast		27	Actual Load			لام							
System Conditions Energy Market & Operational Data	Date January 16,	Download Last Updated		✓ Integrated R	eal-Time									
Pricing Data Power Grid Data	2019 January 15,	htm EST csv pdf 01/14/1907-05					SO L	oad F	orec	ast				
Load Data Reports & Info Postings by Date Custom Reports Ancillary Services	2019 Archive	ntm EST		01/16/2019 01/17/2019 01/18/2019 01/19/2019 01/20/2019										
Installed Capacity Market (ICAP) Transmission Congestion Contracts (TCI Distributed Energy Resources (DER) v				01/21/2019 01/16/2019 Hour CA	APITL CENTRI	. DUNWOD G	ENESE HUD	VL LONGIL	MHK VL N	MILLWD 7	N.Y.C.	NORTH	WEST	NYISO
Distributed Energy Resources (DER) 🗸					1222 1710 1192 1672			771997441916	768 745	286 276	5120 4890	590 584	1563 1526	15825 15278

©COPYRIGHT NYISO 2025. ALL RIGHTS RESERVED

FOR TRAINING PURPOSES ONLY

Energy Market Real - Time Data





FOR TRAINING PURPOSES ONLY

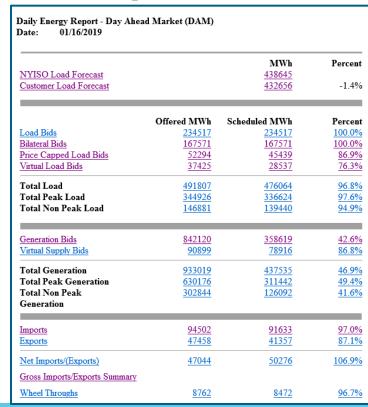
Energy Market – DAM and Balancing



Market Reports

		Μ	IARKETS Y LIB	About l	Js v Sit Planning v	emap Calendar	Support ✓ TRAINING ✓	Login 🗸
REPORTS & IN						ntact Customer Sup ikeholder_services@ny		
Markets	Capacity, Ener	gy and Mar	ket Advisory	⊌7	Events	, Announcements	and Fuel Mix	⊾ ²
Real-Time Dashboard	 NYISO Capac 	ity		^	✓ Real-	Time Events		
Interactive Energy Pricing Map	 Daily Energy 				✓ Opera	ational Announcem	ents	
System Conditions	Date January 16,		d Last Updated 01/15/19 09:42		✓ Real-	Time Fuel Mix		
Energy Market & Operational Data 🔺	2019	csv htm	EST					
Pricing Data	January 15, 2019	csv htm	01/14/19 09:41 EST					
Power Grid Data	Archive	e						
Load Data								
Reports & Info	✓ Balancing Ma	arket Adviso	ory	~				
Postings by Date								
Custom Reports								
Ancillary Services								

Energy Report – DAM and Balancing Market Reports



	Offered MWh	Scheduled MWh	Percent
Bilateral Bids	<u>18150</u>	<u>18150</u>	
Generation Bids	<u>335327</u>	<u>218230</u>	<u>65.1%</u>
Imports Exports	<u>134471</u> <u>57013</u>	<u>131693</u> <u>56054</u>	<u>97.9%</u> <u>98.3%</u>
Net Imports/(Exports)	77458	<u>75639</u>	97.7%

©COPYRIGHT NYISO 2025. ALL RIGHTS RESERVED

h New York ISO

Independent System Operator

Marketplace Summary



Market Features and Function

- Identify five features of the NYISO Energy Market
- Understand the bidding and scheduling process as it relates to the Two Settlement System

Load Forecasting and Bidding

- Describe the LSE and NYISO load forecasting process
- Identify the different load bidding and purchasing options

Marketplace Summary



Supply Offers

- Describe the different offer parameters on a generator offer
- Distinguish between the different generator operating modes

Commitment, Dispatch and Market Timelines

- Identify the inputs to the Day-Ahead and Real-Time commitment and dispatch process.
- Identify the key points of the DAM and RT Market timelines



Additional Resources

- Tariffs: MST and OATT
- Day Ahead Scheduling Manual
- Transmission and Dispatching Operations Manual
- Market Participant User's Guide (MPUG)