

# Virtual Trading Market Settlements

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Remote Learning

# Virtual Trading Market Settlements

## Settlement Name:

- Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- Virtual Load Settlements
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- Ancillary Services Rate Schedule 1
- Uplift Allocation

# Virtual Trading Market Settlements

## Objectives Per Settlement:

- Provide Settlement Description
- Identify Settlement Eligibility
- Name Settlement Determinants
- Name Settlement Intermediates
- Explain Settlement Algorithm
- Step Through Settlement Scenario
- Perform Settlement Example
- Note Settlement Reference Material

# Virtual Trading Market Settlements

## Settlement Name:

- **Virtual Supply Settlements**
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- **Virtual Load Settlements**
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- **Ancillary Services Rate Schedule 1**
- **Uplift Allocation**

# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Description

- Intended to compensate Virtual Trading Market Participants for DAM virtual energy sales to the NYISO Virtual Supply (VS) Market
  - *Based on the VS DAM Scheduled virtual energy at a given VS bus*
  - *Determined at the hourly level*

# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Settlement Eligibility

- Virtual supplier will be credited for DAM VS Energy (\$) if:
  - *VS bus is scheduled to sell virtual energy (MWh) in the NYISO Day Ahead Market*

# Virtual Trading Market Settlements

## DAM Virtual Supply

- **Settlement Determinants**
  - *Hr DAM Energy Price: VS (\$/MWh)*
  - *Hr DAM Loss Price: VS (\$/MWh)*
  - *Hr DAM Cong Price: VS (\$/MWh)*
  - Hr DAM VSupply Energy (MWh)

# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Settlement Intermediates

- *Hr DAM VSupply Engy Stlmnt (\$)*
- *Hr DAM VSupply Loss Stlmnt (\$)*
- *Hr DAM VSupply Cong Stlmnt (\$)*

### ■ Results

- *Hr Total DAM VSupply Stlmnt (\$)*



# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Settlement Algorithm

- Hr DAM VSupply Engy Stlmnt (\$) + Hr DAM VSupply Loss Stlmnt (\$) + Hr DAM VSupply Cong Stlmnt (\$)

Where:

Hr DAM VSupply Engy Stlmnt (\$) = Hr DAM Energy Price: VS (\$/MWh) \* Hr DAM VSupply Energy (MWh)

Hr DAM VSupply Loss Stlmnt (\$) = Hr DAM Loss Price: VS (\$/MWh) \* Hr DAM VSupply Energy (MWh)

Hr DAM VSupply Cong Stlmnt (\$) = {(-1) \* Hr DAM Cong Price: VS (\$/MWh)} \* Hr DAM VSupply Energy (MWh)

And:

Hr DAM VSupply Energy (MWh) = Hr DAM VSupply Energy (MW)

# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Settlement Scenario

- Customer was scheduled for 10 MWs of Virtual Supply in NYC for HB09 in the DAM.
- Hourly DAM Energy Price = \$23.90/MWh
- Hourly DAM Loss Price = \$3.08/MWh
- Hourly DAM Cong Price = \$-2.29/MWh

# Virtual Trading Market Settlements

## DAM Virtual Supply

### ■ Settlement Example

1. Calculate the Hr DAM VSupply Engy Stlmnt (\$)

$$\text{\$ } 23.90/\text{MWh} * 10 = \text{\$ } 239$$

2. Calculate the Hr DAM VSupply Loss Stlmnt (\$)

$$\text{\$ } 3.08/\text{MWh} * 10 = \text{\$ } 30.80$$

3. Calculate the Hr DAM VSupply Cong Stlmnt (\$)

$$\{(-1) * (\text{\$ } -2.29/\text{MWh})\} * 10 = \text{\$ } 22.90$$

4. Calculate the Hr Total DAM VSupply Stlmnt (\$)

$$\text{\$ } 239 + \text{\$ } 30.80 + \text{\$ } 22.90 = \text{\$ } 292.70 \text{ (Payment to MP)}$$

# Virtual Trading Market Settlements

## DAM Virtual Supply

### Settlement Reference Material:

- **Tariff Reference**
  - MST – Section 4.2.6
- **Accounting and Billing Manual**
  - Section 4.4 and Appendix B
- **Advisory Billing File**
  - Virtual Bidding Program
    - DAM Virtual Supplier \$
  - Hourly Bill Codes: 414
  - Daily Bill Code: 773
- **DSS Corporate Report**
  - Settlement Details – Virtual Market Customers – Virtual Supply

# Virtual Trading Market Settlements

## Settlement Name:

- **Virtual Supply Settlements**
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- **Virtual Load Settlements**
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- **Ancillary Services Rate Schedule 1**
- **Uplift Allocation**

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

### ■ Settlement Description

- Intended to charge Virtual Suppliers for the energy purchased in the NYISO RT Market
  - *Based on the VS DAM scheduled energy (MWh) at a given virtual supply bus*
  - *Determined at the RTD interval level*

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

### ■ Settlement Eligibility

- Virtual Suppliers will be charged for RT energy imbalance (\$) if:
  - *VS bus is scheduled to sell virtual energy (MWh) in the NYISO Day Ahead Market*

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

- **Settlement Determinants**
  - Hr DAM VSupply Energy (MW)
  - RTD Interval Seconds
  - RTD RT Energy Price: VS (\$/MWh)
  - RTD RT Loss Price: VS (\$/MWh)
  - RTD RT Cong Price: VS (\$/MWh)



# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

- **Settlement Intermediates**
  - RTD BalMkt VSupply Engy Stlmnt (\$)
  - RTD BalMkt VSupply Loss Stlmnt (\$)
  - RTD BalMkt VSupply Cong Stlmnt (\$)
  
- **Results**
  - RTD Total BalMkt VSupply Stlmnt (\$)

# Balancing Market Virtual Supply

## ■ Settlement Algorithm

$$\text{RTD Total BalMkt VSupply Stlmnt (\$)} = \text{RTD BalMkt VSupply Engy Stlmnt (\$)} + \text{RTD BalMkt VSupply Loss Stlmnt (\$)} + \text{RTD BalMkt VSupply Cong Stlmnt (\$)}$$

### Where:

$$\text{RTD BalMkt VSupply Engy Stlmnt (\$)} = [\text{RTD RT Energy Price: VS (\$/MWh)} * \text{Hr DAM VSupply Energy (MW)} * (\text{RTD Interval Seconds}/3600)] * (-1)$$

$$\text{RTD BalMkt VSupply Loss Stlmnt (\$)} = [\text{RTD RT Loss Price: VS (\$/MWh)} * \text{Hr DAM VSupply Energy (MW)} * (\text{RTD Interval Seconds}/3600)] * (-1)$$

$$\text{RTD BalMkt VSupply Cong Stlmnt (\$)} = [ \{(-1) * \text{RTD RT Cong Price: VS (\$/MWh)}\} * \text{Hr DAM VSupply Energy (MW)} * (\text{RTD Interval Seconds}/3600) ] * (-1)$$

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

### ■ Settlement Scenario

- HB 09 DAM Virtual Supply energy scheduled in NYC = 10 MW
- Actual energy injected in RT = 0 MW
- RTD interval length 9:35 - 9:40 = 300 seconds
- RTD Energy price = \$23.90/MWh
- RTD Loss price = \$2.34/MWh
- RTD Cong price = \$ -2.91/MWh

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

### Settlement Example:

1. Calculate the RTD BalMkt VSupply Engy Stlmnt (\$)
 
$$\text{\$23.90} * \text{10} * (300/3600) * (-1) = \text{\$-19.92}$$
2. Calculate the RTD BalMkt VSupply LossStlmnt (\$)
 
$$\text{\$2.34} * \text{10} * (300/3600) * (-1) = \text{\$-1.95}$$
3. Calculate the RTD BalMkt VSupply Cong Stlmnt (\$)
 
$$\{(-1) * (\text{\$-2.91})\} * \text{10} * (300/3600) * (-1) = \text{\$-2.43}$$
4. Calculate the RTD Total BalMkt VSupply Stlmnt (\$)
 
$$\text{\$-19.92} + \text{\$-1.95} + \text{\$-2.43} = \text{\$ -24.30 (Charge to MP)}$$

# Virtual Trading Market Settlements

## Balancing Market Virtual Supply

### Settlement Reference Material:

- **Tariff Reference**
  - MST – Section 4.5.5
- **Accounting and Billing Manual**
  - Section 4.4.2, Appendix B
- **Advisory Billing File**
  - Virtual Bidding Program
    - Balancing Virtual Supply \$
  - Hourly Bill Codes: 417
  - Daily Bill Code: 775
- **DSS Corporate Report**
  - Settlement Details – Virtual Market Customers – Virtual Supply

# Virtual Trading Market Settlements

## Settlement Name:

- Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- **Virtual Load Settlements**
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- Ancillary Services Rate Schedule 1
- Uplift Allocation

# Virtual Trading Market Settlements

## DAM Virtual Load

- Intended to charge Virtual Market Customers for DAM virtual energy purchases in the NYISO Virtual Load (VL) Market
  - *Based on the VL DAM Scheduled virtual energy at a given VL bus*
  - *Determined at the hourly level*

# Virtual Trading Market Settlements

## DAM Virtual Load

### ■ Settlement Eligibility

- Virtual load will be charged for DAM VL Energy (\$) if:
  - *VL bus is scheduled to purchase virtual energy (MWh) in the NYISO Day Ahead Market*



# Virtual Trading Market Settlements

## DAM Virtual Load

- **Settlement Determinants**
  - *Hr DAM Energy Price: VL (\$/MWh)*
  - *Hr DAM Loss Price: VL (\$/MWh)*
  - *Hr DAM Cong Price: VL (\$/MWh)*
  - Hr DAM VLoad Energy (MWh)

# Virtual Trading Market Settlements

## DAM Virtual Load

- **Settlement Intermediates**
  - *Hr DAM VLoad Engy Stlmnt (\$)*
  - *Hr DAM VLoad Loss Stlmnt (\$)*
  - *Hr DAM VLoad Cong Stlmnt (\$)*
  
- **Results**
  - *Hr Total DAM VLoad Stlmnt (\$)*

# Virtual Trading Market Settlements

## DAM Virtual Load

### ■ Settlement Algorithm

- Hr Total DAM VLoad Stlmnt (\$) = Hr DAM VLoad Engy Stlmnt (\$) + Hr DAM VLoad Loss Stlmnt (\$) + Hr DAM VLoad Cong Stlmnt (\$)

Where:

Hr DAM VLoad Engy Stlmnt (\$) = [Hr DAM Energy Price: VL (\$/MWh) \* Hr DAM VLoad Energy (MWh)] \* (-1)

Hr DAM VLoad Loss Stlmnt (\$) = [Hr DAM Loss Price: VL (\$/MWh) \* Hr DAM VLoad Energy (MWh)] \* (-1)

Hr DAM VLoad Cong Stlmnt (\$) = [ {(-1) \* Hr DAM Cong Price: VL (\$/MWh)} \* Hr DAM VLoad Energy (MWh) ] \* (-1)

And:

Hr DAM VLoad Energy (MWh) = Hr DAM VLoad Energy (MW)

# Virtual Trading Market Settlements

## DAM Virtual Load

### ■ Settlement Scenario

- Customer was scheduled for 10 MWs of Virtual Load for HB09 in the DAM.
  - Hr DAM Energy Price: VL = \$23.90/MWh
  - Hr DAM Loss Price: VL = \$3.08/MWh
  - Hr DAM Cong Price: VL = \$ -2.29/MWh

# Virtual Trading Market Settlements

## DAM Virtual Load

### Settlement Example:

1. Calculate the Hr DAM VLoad Engy Stlmnt (\$)  
 $\$ 23.90/\text{MWh} * 10 * (-1) = \$-239$
2. Calculate the Hr DAM VLoad Loss Stlmnt (\$)  
 $\$ 3.08/\text{MWh} * 10 * (-1) = \$-30.80$
3. Calculate the Hr DAM VLoad Cong Stlmnt (\$)  
 $\{(-1) * (\$-2.29/\text{MWh})\} * 10 * (-1) = \$-22.90$
4. Calculate the Hr Total DAM VLoad Stlmnt (\$)  
 $\$-239 + \$-30.80 + \$-22.90 = \$-292.70 = (\text{Charge to MP})$

# Virtual Trading Market Settlements

## DAM Virtual Load

### Settlement Reference Material:

- **Tariff Reference**
  - MST – Section 4.2.6
- **Accounting and Billing Manual**
  - Section 6.3.1, Appendix J
- **Advisory Billing File**
  - Virtual Bidding Program
    - DAM Virtual Load \$
  - Hourly Bill Codes: 413
  - Daily Bill Code: 771
- **DSS Corporate Report**
  - Settlement Details – Virtual Market Customers – Virtual Load

# Virtual Trading Market Settlements

## Settlement Name:

- Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- **Virtual Load Settlements**
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- Ancillary Services Rate Schedule 1
- Uplift Allocation

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### ■ Settlement Description

- Intended to compensate Virtual Loads for the energy sold in the NYISO RT Market
  - *Based on the VL DAM scheduled energy (MWh) at a given virtual load bus*
  - *Determined at the RTD interval level*



# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### ■ Settlement Eligibility

- Virtual Loads will be credited for RT energy imbalance (\$) if:
  - *VL bus is scheduled to purchase virtual energy (MWh) in the NYISO Day Ahead Market*

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

- **Settlement Determinants**
  - Hr DAM VLoad Energy (MW)
  - RTD Interval Seconds
  - RTD RT Energy Price: VL (\$/MWh)
  - RTD RT Loss Price: VL (\$/MWh)
  - RTD RT Cong Price: VL (\$/MWh)

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

- **Settlement Intermediates**
  - RTD BalMkt VLoad Engy Stlmnt (\$)
  - RTD BalMkt VLoad Loss Stlmnt (\$)
  - RTD BalMkt VLoad Cong Stlmnt (\$)
  
- **Results**
  - RTD Total BalMkt VLoad Stlmnt(\$)

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### ■ Settlement Algorithm

$$\text{RTD Total BalMkt VLoad Stlmnt (\$)} = \text{RTD BalMkt VLoad Engy Stlmnt (\$)} + \text{RTD BalMkt VLoad Loss Stlmnt (\$)} + \text{RTD BalMkt VLoad Cong Stlmnt (\$)}$$

Where:

$$\text{RTD BalMkt VLoad Engy Stlmnt (\$)} = \text{RTD RT Energy Price: VL (\$/MWh)} * \text{Hr DAM VLoad Energy (MW)} * (\text{RTD Interval Seconds}/3600)$$

$$\text{RTD BalMkt VLoad Loss Stlmnt (\$)} = \text{RTD RT Loss Price: VL (\$/MWh)} * \text{Hr DAM VLoad Energy (MW)} * (\text{RTD Interval Seconds}/3600)$$

$$\text{RTD BalMkt VLoad Cong Stlmnt (\$)} = \{(-1) * \text{RTD RT Cong Price: VL (\$/MWh)}\} * \text{Hr DAM VLoad Energy (MW)} * (\text{RTD Interval Seconds}/3600)$$

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### ■ Settlement Scenario

- HB 09 DAM Virtual Load energy scheduled = 10 MW
- Actual energy withdrawn in RT = 0 MW
- RTD interval length 9:20 - 9:25 = 300 seconds
- RTD Energy price = \$23.90/MWh
- RTD Loss price = \$2.34/MWh
- RTD Cong price = \$ -2.91/MWh

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### ■ Settlement Example

1. Calculate the RTD BalMkt VLoad Engy Stlmnt (\$)  
 $\$23.90 * 10 * (300/3600) = \$19.92$
2. Calculate the RTD BalMkt VLoad LossStlmnt (\$)  
 $\$2.34 * 10 * (300/3600) = \$1.95$
3. Calculate the RTD BalMkt VLoad Cong Stlmnt (\$)  
 $\{(-1) * (\$-2.91)\} * 10 * (300/3600) = \$2.43$
4. Calculate the RTD Total BalMkt VLoad Stlmnt (\$)  
 $\$ 19.92 + \$1.95 + \$2.43 = \$ 24.30$  (Payment to MP)

# Summary

## DAM and Balancing Market for VS and VL Bids

### ■ Virtual Supply

- Sells in DAM @ DAM LBMP
- Purchases in RT @ RT LBMP

### ■ Virtual Load

- Purchases in DAM @ DAM LBMP
- Sells in RT @ RT LBMP

### ■ Entirely a financial market

- Same number of MWs purchased (sold) in DAM are sold (bought) back in RT on a per bus, per hour basis
- Netted DAM \$ and Balancing Market \$ can be a profit or loss for VS or VL customer

# Virtual Trading Market Settlements

## Balancing Market Virtual Load

### Settlement Reference Material:

- **Tariff Reference**
  - MST – Section 4.5.2
- **Accounting and Billing Manual**
  - Section 6.3.2, Appendix J
- **Advisory Billing File**
  - Virtual Bidding Program
    - Balancing Virtual Load \$
  - Hourly Bill Codes: 416
  - Daily Bill Code: 774
- **DSS Corporate Report**
  - Settlement Details – Virtual Market Customers – Virtual Load



# Virtual Trading Market Settlements

## Settlement Name:

- Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- Virtual Load Settlements
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- **Ancillary Services Rate Schedule 1**
- Uplift Allocation

# Virtual Trading Market Settlements

## Ancillary Services Rate Schedule 1

- Settlement Description

- OATT & MST Rate Schedule 1:

Scheduling, System Control, and Dispatch (S,SC & D)  
+  
FERC Fees

*Intended to recover a portion of NYISO's operating costs and NYISO assessed FERC fees from customers engaging in Virtual Trading*

- *Based on cleared MWh*

# Virtual Trading Market Settlements

## Ancillary Services Rate Schedule 1

### ■ Settlement Eligibility

- Virtual Suppliers and Virtual Loads will receive a charge for OATT & MST Rate Schedule 1 if:
  - *Virtual Customer is scheduled to purchase or sell virtual energy (MWh) in the NYISO DAM Market*

# Virtual Trading Rate Schedule 1 – S, SC, & D

- **Settlement Determinants**
  - Hr DAM  $V_{\text{supply}}/V_{\text{load}}$  Energy (MW)

# Virtual Trading Rate Schedule 1 – S, SC, & D

- **Settlement Intermediates**
  - Hr Vsupply/Vload OATT Rate Sched 1 Annual Budget Rate (\$/MWh)
  
- **Settlement Results**
  - Hr Vsupply/Vload OATT Sched 1 Annual Budget Charge Stmt (\$)

# Virtual Trading Market Settlements

## Ancillary Services Rate Schedule 1

- Settlement Algorithm - *S, SC, & D*

*Hr Vsupply/Vload OATT Sched 1 Annual Budget Charge Stlmnt (\$) =*

*Hr Vsupply/Vload OATT Sched 1 Annual Budget Rate (\$/MWh)*  
*\* Hr DAM Vsupply/Vload Energy (MW) \* (-1)*

***Where:***

*Hr Vsupply/Vload OATT Sched 1 Annual Budget Rate (\$/MWh) = projected annual Virtual Trading revenue*

- 2023 Rate: \$ 0.1066 per cleared MWh
- Based on \$3,789,879.33 projected recoveries from Non-Physical Transactions for 2023

*Hr DAM Vsupply/Vload Energy (MW) = Total cleared Virtual MWh*

# Virtual Trading Rate Schedule 1 – FERC Fees

- Settlement Determinants
  - Hr DAM  $V_{\text{supply}}/V_{\text{load}}$  Energy (MW)

# Virtual Trading Rate Schedule 1 – FERC Fees

- **Settlement Intermediates**
  - Hr Vsupply/Vload OATT Sched 1 FERC Fees Rate (\$/MWH)
  
- **Settlement Results**
  - Hr Vsupply/Vload OATT Sched 1 FERC Fees Stlmnt (\$)



# Virtual Trading Market Settlements

## Ancillary Services Rate Schedule 1

- Settlement Algorithm - *FERC Fees*

*Hr Vsupply/Vload OATT Sched 1 FERC Fees Stlmnt (\$) =*

*Hr Vsupply/Vload OATT Sched 1 FERC Fees Rate (\$/MWh)*

- *Hr DAM Vsupply/Vload Energy (MW) \* (-1)*

***Where:***

*Hr Vsupply/Vload OATT Sched 1 FERC Fees Rate (\$/MWh) =*

*actual billed fees – annual estimated fees + true up interest accrual*

- Broken down to a monthly level and then an hourly level rate
- Virtual Traders assessed 34.7% of the 6% Non-Physical Allocation

*Hr DAM Vsupply/Vload Energy (MW) = Total cleared Virtual MWh*

# Virtual Trading Market Settlements Ancillary Services Rate Schedule 1

## Settlement Reference Material:

- **Tariff Reference**
  - OATT –Sections 6.1.2.4.1 and 6.1.2.4.4
- **Accounting and Billing Manual**
  - Section 8.1.1, Appendix M
- **Advisory Billing File**
  - Virtual Bidder
    - Annual Budget OATT Virtuals Charge \$
      - » Hourly Bill Code 418
      - » Daily Bill Code 778
    - FERC Fees OATT Virtuals Charge \$
      - » Hourly Bill Code 419
      - » Daily Bill Code 779
- **DSS Corporate Report**
  - Settlement Details – Virtual Market Customers

# Virtual Trading Market Settlements

## Settlement Name:

- Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- Virtual Load Settlements
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- Ancillary Services Rate Schedule 1
- **Uplift Allocation**

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Description

- Day DAM BPCG UnderFrcst: LSE/SprZn (\$)
  - A charge to recover a portion of uplift costs associated with BPCG payments to generating resources
    - *Specifically, those additional resources scheduled to meet the NYISO's forecast load*
  - *Calculated at the daily level*

# Virtual Trading Market Settlements

## Uplift Allocation

- **Settlement Description (cont'd)**
  - Based on ratios of differences between Day-Ahead net energy purchases and forecast or actual energy withdrawal for four New York Control Area locations (Superzones)
  - Uplift costs allocated to a given location (Superzone) are then further allocated to individual bidders within that location based upon the individual bidder's contribution to the deficiency relative to the total deficiency of the location

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Description (cont'd)

- The need for additional resources to meet forecast load can be partially attributed to Virtual Supply Transactions and real-time purchases
  - *If NYISO forecast does not exceed actual load, costs are allocated to bidding entities that are short in real time...by design VS are short in RT*
  - *Loads whose actual consumption is more than they have acquired in the DAM...by design VS consume more in RT than what was acquired in DAM*
- Virtual Load bids do not add to these uplift costs and therefore are not subject to the uplift charges

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Eligibility

- Customers will receive an allocation of DAM Bid Production Cost Guarantee (\$) due to under forecasted load for each NYISO Superzone in which Virtual Supply MWh are scheduled in DAM if:
  - *DAM BPCG payments were allocated to power suppliers due to DAM load under-forecasting.*

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Determinants

- Day RT LSE Load: LSE/SprZn (MWh)
- Day DAM Sched Load: LSE/SprZn (MWh)
- Day DAM VSupply Energy: VBE/SprZn (MWh)
- Day DAM VLoad Energy: VBE/SprZn (MWh)
- Day RT LSE Load: SprZn (MWh)
- Day DAM Sched Load: SprZn (MWh)
- Day DAM VSupply Energy: SprZn (MWh)
- Day DAM VLoad Energy: SprZn (MWh)
- Day DAM NYISO Frcst Load: SprZn (MWh)
  
- Day Ttl NYISO DAM UndrFrcst BPCG (\$)



# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Intermediates

- Day Adj2 RT Actual Load: LSE/SprZn (MWh)
- Day Total Adj RT Actual Load (MWh)
- Day Adj2 RT Actual Load: SprZn (MWh)
- Day Adj RT Actual Load: SprZn (MWh)
- Day Adj Frcst Load: SprZn (MWh)
  
- Day DAM Frcst Accuracy Ratio: SprZn
- Day SprZn Adj RT Ld Ratio Sh
- Day Adj2 RT Load Ratio Sh: LSE/SprZn
  
- Day DAM BPCG UndrFrcst Rat: LSE/SprZn

### ■ Results

- Day DAM BPCG UnderFrcst: LSE/SprZn (\$)

# Virtual Trading Market Settlements

## Uplift Allocation

- Settlement Algorithm

*Day DAM BPCG UnderFrcst: LSE/SprZn (\$) =*

*Day Ttl NYISO DAM UndrFrcst BPCG (\$) \* Day DAM BPCG UndrFrcst Rat:  
LSE/SprZn \*(-1)*

*Where:*

*Day DAM BPCG UndrFrcst Rat: LSE/SprZn =*

*Day DAM Frcst Accuracy Ratio: SprZn \* Day SprZn Adj RT Ld Ratio Sh \*  
Day Adj2 RT Ld Ratio Sh: LSE/SprZn*

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Scenario

- Day DAM BPCG UndrFrcst Rat: LSE/SprZn for VS\_123 in Super Zone A-E for Aug 1, 2023 = .05
- The total credit to PS for DAM BPCG due to Under Forecasting: Day Ttl NYISO DAM UndrFrcst BPCG (\$) = \$2,500

# Virtual Trading Market Settlements

## Uplift Allocation

- **Settlement Example**

1. Calculate the Day DAM BPCG UnderFrcst: LSE/SprZn (\$) for this Virtual Supplier for the given date

# Virtual Trading Market Settlements

## Uplift Allocation

### ■ Settlement Summary

- *A charge to recover a portion of uplift costs associated with BPCG payments to generating resources*
  - *Based on Superzone*
  - *Forecast Accuracy*
  - *Applies to Virtual Suppliers not Virtual Loads*
  - *Calculated on Daily Level*

# Virtual Trading Market Settlements

## Uplift Allocation

### Settlement Reference Material:

- **Tariff Reference**
  - OATT - Attachment T
- **Accounting and Billing Manual**
  - Section 8.1.11, Appendix J
- **Advisory Billing File**
  - Ancillary Services Charges
    - Incremental Uplift \$
  - Hourly Bill Codes: N/A
  - Daily Bill Code: 815
- **DSS Corporate Report**
  - Settlement Details – LSE Ancillary Services – limited availability

# Virtual Trading Market Settlements

## Settlement Name:

- ✓ Virtual Supply Settlements
  - Day Ahead Market Virtual Supply
  - Balancing Market Virtual Supply
- ✓ Virtual Load Settlements
  - Day Ahead Market Virtual Load
  - Balancing Market Virtual Load
- ✓ Ancillary Services Rate Schedule 1
- ✓ Uplift Allocation for Virtual Suppliers