New York ISO

Virtual Trading Basics

Virtual Trading is the submission of bids for the financial purchase or sale of energy rather than or in addition to the physical delivery or purchase of energy in the NYISO administered energy markets with no effect on physical consumption

Virtual Trading Fundamentals

Intent to BUY LOW and SELL HIGH

Virtual Supply

MP Sells in DAM at DAM LBMP ($)

MP Buys back in RT at RT LBMP ($)

Virtual Load

MP Buys in DAM at DAM LBMP ($)

MP Sells back in RT at RT LBMP ($)

Virtual Trading Participants:

- MPs involved in physical market activity (e.g. Gen orgs, Load orgs, Transmission Cust.)
- Non-physical MPs (e.g. Financial institutions)

Benefits to participating

- ☑ Hedging mechanism
- ☑ Revenue opportunity

Virtual Trading Settlements

Virtual Supply

DAM

Virtual Supply *Sells* 10MW @$30

Total = $300

RT

Virtual Supply *Buys* 10MW @$20

Total = ($200)

Net Revenue of $100 on Virtual Supply Trade at these prices

Virtual Load

DAM

Virtual Load *Buys* 10MW @$40

Total = ($400)

RT

Virtual Load *Sells* 10MW @$45

Total = $450

Net Revenue of $50 on Virtual Load Trade at these prices

New York ISO

Virtual Trading Bid Process

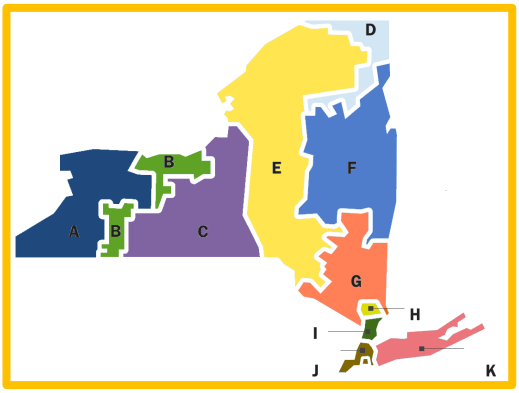
Bidding Requirements

1. Pass Virtual Trading Competency Exam

2. Pass Credit Evaluation

Bidding Parameters

- Bids entered into Day-Ahead Market only
  - Done at zonal level
- Bids submitted at the load bus level for a specific zone
- Virtual traders allowed up to 3 VL and 3 VS buses per zone
  - If credit qualified, 999 MW bid cap on each virtual bus for each hour



Bid Evaluation

Solves for:

Physical Load
VS Bids
VL Bids

Virtual bidding impacts Day-Ahead LBMP Calculation

Final dispatch determined to supply Load Bid, Virtual Load and Virtual Supply

FINAL DAM LBMP ($)

Facilitates price convergence between Day-Ahead and Real-Time Market prices

SCUC Passes

Pass 1: Bid- Load Pass

Pass 2: Forecast Load Pass

Pass 3

Pass 4

Pass 5: Bid Redispatch Pass

Commits additional resources to supply Forecast Load

Not considered:
Physical Load
VS Bids
VL Bids

Does not compromise physical commitment of energy resources for system reliability

FOR TRAINING PURPOSES ONLY