



# Virtual Regional Dispatch Settlements

Agenda Item 5

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August 31, 2003

Joint Meeting

ISO-NE Markets Committee

NYISO Market Structures Working Group

Draft--For Discussion Only

## No Changes to Day-Ahead

- VRD does not change the day-ahead market:
  - Bidding data
  - Cutoff times
  - Interchange transaction types
  - Day-ahead clearing schedules
  - Settlements rules/calculation
- • • All stay the same

## Day-Ahead Transactions Delivered

- Transaction:
  - Clears in *both* NY *and* NE day-ahead markets
  - Delivered in R.T.
    - Satisfies day-ahead obligation
- No changes:
  - Types of allowable transactions
  - Payment of transaction fees and charges
  - Real-time Energy deviations (Zero)

## Price Sensitive Transactions

- Decision made after the physical dispatch, based on
  - Real-time prices
- Transaction flows only if it is economical when compared to actual real-time prices
- Therefore, the need for price guarantees on virtual interfaces goes away

## R.T. Out Service Fees Replaced

- R.T. Transactions\* will no longer pay separately for:
  - Transmission out service
  - Ancillary service charge allocation
  - Operating Reserve charge allocation
  - NEPOOL schedule 1,2,8 charges linked to transactions.

Note:

\* "R.T. Transactions" refer to transactions cleared to flow in R.T.; but not cleared in both the NY and the NE day-ahead markets (generally submitted during operating day).

## R.T. Out Service Fees Replaced (con't)

- R.T. Transactions will be assessed a single transaction charge of:
  - The difference between control area proxy bus prices
    - Buying area's proxy bus LMP minus selling area's proxy bus LMP

Note:

- \* Distribution of transaction charge in later slides

## Virtual Dispatch (MWh)

- MW of virtual dispatch is determined to be:
  - $VRD_{MW} =$   
(Scheduled Physical Flow)  
minus  
(Net Participant Schedules)

## Revenue Accounting

- A Virtual Accounting Fund will be credited with revenues from:
  - Energy payment for Virtual MW from receiving control area market
  - Payment of transaction costs (delta proxy prices) from R.T. transactions



## Revenue Accounting (con't)

- A Virtual Accounting Fund will distribute payments to:
  - Energy payment to delivering control area market for MW of VRD.
  - Payment of export fees and associated charges for physical interchange not covered by delivery of day-ahead obligations
  - Any residual imbalance to Market Participants  
(slide on distribution follows examples)

# Description of Cases

		Clearing Assumptions				Results		
Case		NY DAM	NE DAM	NY RTM	NE RTM	Energy Deviation	Unchanged Export Charges	Transaction Charge (delta LMP)
DAM clearing consistent RTM checkout successful	1	Y	Y	Y	Y	None	Yes	No
DAM clearing consistent RTM checkout fails	2a	Y	Y	Y	N	Yes NE and NY	No	No
	2b	Y	Y	N	Y	Yes NE and NY	No	No
DAM clearing inconsistent RTM checkout successful	3a	Y	N	Y	Y	yes NE	No	Yes
	3b	N	Y	Y	Y	Yes NY	No	Yes
No DAM submittal RTM checkout fails	4a	N	N	Y	N	None	No	No
	4b	N	N	N	Y	None	No	No
No DAM Submittal RTM checkout successful	5	N	N	Y	Y	Yes NE and NY	No	Yes

## Settlements Examples

- Example Assumption
  - All transaction fees and related charges are represented by a single fee, noted as “Out Service charges” in the following slides.

# VRD Settlements Example 1

## Part A

**Real time Part. Sale of 100 MW from NY to NE**  
**250 MW Scheduled interchange**  
**Prices near convergence**

<u>NY Interchange Transactions</u>			<u>NE Interchange Transactions</u>		
R.T. only Part transactions net (sale to NE)	(100)		R.T. only Part transactions net Purchase from NY		100
ISO's Physical schedule	(250)		Physical Real time interchange into NE (MW) (ISO VRD schedule)		250
<u>NY Real Time Settlements</u>			<u>NE Real Time Settlements</u>		
NY LBMP (\$/MWh)	<u>49</u>		NE LMP (\$/MWh)		<u>59</u>
Out Service Charges (\$/MWh)	<u>7</u>		Out Service Charges (\$/MWh)		<u>5</u>

# VRD Settlements Example 1

## Part B

<b>Virtual Regional Dispatch Settlements Example</b>		
<b>Joint VRD Fund Accounting</b>		
150 MW VRD Energy charges from delivering NY Market	(7350)	\$
150 MW VRD Energy Credit from Receiving NE Market	8850	\$
Out Service payments to NY Market (250 MW * 7\$/MWh)	(1750)	\$
Transaction Charge (100 MW * (59 - 49))	1000	
<b>Net VRD Residual for Distribution</b>	<b>750</b>	<b>\$</b>



# VRD Settlements Example 2

## Part a

Day Ahead market participant transactions all carried into Real-time up to Transfer limit

Physical schedule set to transfer limit

Prices not fully converged

<u>NY Interchange Transactions</u>			<u>NE Interchange Transactions</u>		
Day Ahead NY Participant sales flowing in real time	250		Day Ahead NE Participants purchases flowing in Real time	250	
ISO Physical Schedule to NE	(250)		ISO Physical Receipts from NY	250	
<u>NY Real Time Settlements</u>			<u>NE Real Time Settlements</u>		
NY LBMP (\$/MWh)	<u>49</u>		NE LMP (\$/MWh)	<u>59</u>	
Out Service Charge (\$/MWh)	<u>7</u>		Out Service Charge (\$/MWh)	<u>5</u>	

## VRD Settlements Example 2

### Part B

<b>New Joint VRD Fund Accounting</b>		
VRD Energy charges from delivering market		0 \$
VRD Energy credits from receiving market		0 \$
Out Service Charges collected from DAM transactions	1750	
Out service payments	(1750)	\$
R.T. Transaction charges collected	0	
<b>Net VRD Imbalance for Distribution</b>		<b>0 \$</b>

\*Fees for DAM flowing in RT are shown passing through VRD accounting for illustration only. In reality, they would be billed directly to the Market Participant.

# VRD Settlements Example 3

## Part A

<b>Example Description</b>					
<b>100 MW Real-time Part from NY to NE</b> <b>250 Physical schedule NY to NE</b> <b>Scheduled Physical flow from high cost area to low cost area</b> <b>(NE price should be \$7 higher. It is \$5 lower)</b>					
<b><u>NY Interchange Transactions</u></b>			<b><u>NE Interchange Transactions</u></b>		
Real Transactions net (sale to NE)	(100)		Real Transactions net (Purchase from NY)	100	
ISO's Physical Schedule (to NE)	(250)		ISO's Physical interchange (from NY)	250	
<b><u>NY Real Time Settlements</u></b>			<b><u>NE Real Time Settlements</u></b>		
NY LBMP (\$/MWh)	<u>59</u>		NE LMP (\$/MWh)	<u>54</u>	
Out Service Charge (\$/MWh)	<u>7</u>		Out Service Charge (\$/MWh)	<u>5</u>	



# VRD Settlements Example 3

## Part B

<b>New Joint VRD Fund Accounting</b>		
VRD Energy Charges from delivering market (150 * 59)	(8850)	\$
VRD Energy credits from receiving market (150 * \$54)	8100	\$
Out service payments	(1750)	\$
R.T Transaction Charges (notice amount is a payment)	(500)	
<b>Net VRD Imbalance for Distribution</b>	<b>(3000)</b>	<b>\$</b>

## VRD Residual

- Positive or zero residual balance
  - ISO Schedules bring prices closer together
  - Conservative scheduling for price convergence
  - Congested interface
  
- Negative residual balance
  - Unforeseen circumstances and outages
  - ISOs miscalculation
  
- Distribution discussion to be scheduled

