

***Pre-Scheduling of External Transactions
in New York***

Scott M. Harvey

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OVERVIEW

The current NYISO market and scheduling process could be modified to permit pre-scheduling of inter-change transactions in a manner that would reserve ramp. The core of such a system would be:

- Inter-control area transactions could be prescheduled in either the day-ahead or the hourly markets;
- Export transactions bid in at \$1000/MWh and import transactions bid in at -\$1000/MWh could be pre-scheduled;
- Pre-scheduled transactions would hold ramp; provide counter-flows; provide counter-ramp;
- Once accepted, pre-scheduled transactions could only be withdrawn with the consent of both affected control areas.

SCHEDULING PROCESS

The NYISO MIS (and that of the other affected control area) would evaluate requests for pre-scheduled transactions and accept those that would not violate ramp or transmission limits.

- Market participants would be able to self-manage ramp constraints by submitting packages of transactions that would not violate ramp limits.

DAY-AHEAD MARKET

Transactions could be pre-scheduled prior to the opening of the day-ahead market:

- Transactions would be pre-scheduled subject to ramp and transmission limits;
- Additional transactions could be bid into the day-ahead market at prices between – \$999 and +\$999;
- Pre-scheduled transactions would always be scheduled to flow before other transactions on the same interface, even if transfer capability was reduced by outages.

DAY-AHEAD MARKET

The day-ahead market would continue to operate as today.

- Even if pre-scheduled transactions were limited by ramp or transmission constraints, additional transactions could be scheduled in the day-ahead market if counter flow transactions were offered;
- Congestion prices on the external interfaces would be determined by all bids;

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DAY-AHEAD MARKET

- Prescheduled transactions would be periodically checked out with adjacent control areas, permitting early identification of tag issues;
- Pre-scheduled transactions could be descheduled if this would not violate ramp or transmission constraints in either control area;
- Net pre-scheduled transactions on each interface would be posted on the Oasis.

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HOURLY MARKET

Additional transactions could be pre-scheduled for all 24 hours any time after closing of the day-ahead market.

- Transactions could be pre-scheduled on an hourly basis subject to ramp and transmission limits (including day-ahead transactions);
- Additional transactions could be bid into hourly markets at prices between – \$999 and +\$999;
- Pre-scheduled transactions would be scheduled to flow in BME before other transactions on the same interface, even if transfer capability was reduced by outages.

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HOURLY MARKET

The BME scheduling process would continue to operate as it does today in other respects:

- Additional transactions could be scheduled in the hourly markets but would not displace pre-scheduled transactions on that interface;
- BME would continue to schedule counterflow to avoid reducing financially firm transactions;
- Hourly congestion prices on the external interfaces would continue to be determined by all bids.

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HOURLY MARKET

- Pre-scheduled transactions in the hourly markets could be checked out with the adjacent control areas prior to BME.
- Pre-scheduled transactions could be descheduled any time prior to the BME bid deadline, if this would not violate ramp or transmission constraints in either control area.
- Net pre-scheduled transactions for each hour would be posted on the Oasis for each interface.

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Hour	Pre-Scheduled MW	Ramp Change
0	-100	
1	-200	-100
2	-900	-700
3	-1500	-600
4	-1600	-100
5	-1000	+600
6	-1000	0
7	-1000	0
8	-1000	0

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PRE-SCHEDULE EXAMPLE

The table above shows the level of pre-scheduled transactions into New York from PJM for a hypothetical day. The example assumes that:

- PJM and NYCA enforce a 700MW limit on hourly schedule changes on this interface;
- The interface limit is + 2000 throughout the day;
- The aggregate control area DNI constraints are assumed to be non-binding in the example.

Hour	Pre-Scheduled MW	Ramp Change	Schedule 1	Total	New Ramp Change
0	-100			-100	
1	-200	-100		-200	-100
2	-900	-700	-100@-\$1000/MW	-1000	-800
3	-1500	-600	-100@-\$1000/MW	-1600	-700
4	-1600	-100	-100@-\$1000/MW	-1700	-100
5	-1000	+600		-1000	+700
6	-1000	0		-1000	0
7	-1000	0		-1000	0
8	-1000	0		-1000	0

PRE-SCHEDULE EXAMPLE

Suppose a market participant sought to pre-schedule an additional 100MW of imports in hours 2, 3 and 4 as shown above.

- The MIS systems would not pre-schedule this transaction because accepting it would violate the interface ramp limit in hour 2.

Hour	Pre-Scheduled MW	Ramp Change	Schedule 2	Total	New Ramp Change
0	-100			-100	
1	-200	-100	-100@-\$1000/MW	-300	-200
2	-900	-700	-100@-\$1000/MW	-1000	-700
3	-1500	-600	-100@-\$1000/MW	-1600	-700
4	-1600	-100	-100@-\$1000/MW	-1700	-100
5	-1000	+600		-1000	+700
6	-1000	0		-1000	0
7	-1000	0		-1000	0
8	-1000	0		-1000	0

PRE-SCHEDULE EXAMPLE

The market participant could solve this problem by scheduling its transaction to begin in hour 1 instead of hour 2.

Hour	Pre-Scheduled MW	Ramp Change	Schedule 3	Total	New Ramp Change
0	-100			-100	
1	-200	-100		-300	-100
2	-900	-700		-1000	-700
3	-1500	-600		-1500	-600
4	-1600	-100		-1600	+100
5	-1000	+600	+200	-800	+800
6	-1000	0		-1000	-200
7	-1000	0		-1000	0
8	-1000	0		-1000	0

PRE-SCHEDULING EXAMPLE

Suppose the market participant that had pre-scheduled 200MW imports in hour 5 sought to deschedule this transaction.

- It would be permitted to deschedule only 100MW as otherwise the ramp constraint would be violated between hours 4 and 5.
- If the market participant had also pre-scheduled a transaction in hour 4, it could deschedule its 200MW transaction in hour 5 by also descheduling 200MW of imports in hour 4.

PRICING

SCUC and BME pricing would be unchanged.

- If imports or exports were not limited by ramping or inter-control area transaction constraints, the price for external transactions would be determined by the same bids and constraints as internal NYCA prices.
- If imports or exports were limited by ramping or inter-control area transmission constraints, then the settlement price for external transactions would be determined by bids at the proxy buses.

Hour 2 Prices

Transaction	Offers	Schedules
Pre-Scheduled	-900MW @ -\$1000	-900MW
B	-100MW @ -\$50	-75MW
C	+75MW @ -\$10	+75MW

BME price = -\$50

PRICING EXAMPLE

Suppose that in addition to the pre-scheduled transactions in hour 2 there were also:

- Offers to supply 100MW of imports at any price above – \$50/MW;
- Offers to take 75MW of exports at any price below – \$10/MW.
- The export offer would be fully accepted, the import offer would be partly accepted, imports would be limited by the ramp constraint, and the BME proxy bus price would be –\$50/MWh.