



Sustaining Broader Regional Markets

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MIWG

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Today's Discussion

- **Background**
- **2016 Initiatives**
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 - *Niagara Generation Modeling Update*
 - *Lake Erie Circulation Change*
 - *Hybrid GT Pricing*
- **2017 Initiatives for Sustaining BRM**
 - *RTC/RTD Forward Horizon Coordination Study*
- **Other Initiatives for Sustaining BRM not prioritized for 2017**
 - *Ontario Price Changes*
 - *Eliminate Fees for Transactions with PJM*
 - *5-min Scheduling & 15-min Scheduling*
- **Next Steps**

Background

- **Sustaining Broader Regional Markets (BRM) is a Key Project Initiative for the 2016 project year.**
- **This presentation is focused on reviewing the changes NYISO has undertaken to further improve NY/PJM Coordinated Transaction Scheduling and interface pricing alignment with power flows at external interfaces during the 2016 project year.**
- **This presentation also reviews continuing efforts for the 2017 project year.**

Broader Regional Market Metrics Report

- **On a monthly basis the NYISO presents the BRM Metrics report, highlighting key performance metrics for Coordinated Transaction Scheduling (CTS) with PJM and ISO-NE.**
- **The report provides key metrics regarding CTS offers/schedules and forecasted/real-time price spreads at external interfaces.**
- **The report was established after the implementation of CTS between NYISO and PJM in 2014 and has been a continuing effort to provide CTS pricing and scheduling transparency.**

Niagara Generation Modeling Improvements

- **The Niagara Power Plant is comprised of 25 individual generating units, divided into three distinct points of injection onto the bulk power system:**
 - *Niagara 230 kV Bus*
 - *Niagara 115 kV East Bus*
 - *Niagara 115 kV West Bus*
- **In the NYISO Energy Markets, the plant is modeled in a distributed fashion to assess constraint flows for transmission security (i.e., security analysis). However, it was represented at a single point of injection at the 230kV bus for scheduling and pricing purposes (i.e., commitment and dispatch).**
- **The modeling update allows the market software to recognize the current distribution of the plant output for scheduling and pricing in the same manner in which it currently does for security analysis.**

Niagara Generation Modeling Improvements

- **The NYISO activated this modeling improvement in the Scheduling and Pricing algorithms of SCUC, RTC, and RTD on Wednesday, May 4, 2016.**
- **To improve transparency, three new LBMP points are being produced for the Niagara points of injection to more accurately depict the value of energy at different locations in the West zone.**
- **The new model allows for a more accurate reflection of Niagara's impact on the western NY transmission system pricing and scheduling.**
- **Market Participants are able to make more informed decisions to schedule at Niagara, PJM or Ontario.**

Lake Erie Circulation Modification

- **The NYISO's Real Time Commitment and Dispatch algorithms utilize a snapshot of Lake Erie Loop Flow as calculated at the New York-Ontario border at the start of each run.**
- **This snapshot is used as a starting point to forecast Lake Erie Loop Flow over the optimization horizon.**
- **Potomac Economics attributed a correlation between the inherent volatility of these snapshots and large Balancing Congestion shortfalls.**
- **NYISO made a modification to cap the maximum value of loop flow used to initialize RTC. RTC will not allow the initialized CCW loop flow to exceed 0MW.**
- **NYISO made a modification to cap the maximum value of loop flow assumption between successive RTD initializations. The cap is currently at +/-75 MW.**

Lake Erie Circulation Modification

- **The Lake Erie Circulation (LEC) modification was implemented on Tuesday June 28th, 2016.**
- **The LEC modifications assist in minimizing transient pricing volatility that drive differences between RTC and RTD.**

Hybrid GT Pricing Improvements

- **When Hybrid GT Pricing was first implemented in 2001:**
 - *Frequently GTs were committed on an hourly basis*
 - *The 5 minute dispatch did not include look ahead functionality*
 - *Frequent manual commitments were necessary under the technology that existed in 2001*
- **Each of the above factors made it more likely that committed resources would be in their min run time and uneconomic.**
- **The NYISO's 15 minute RTC, featuring a 2.5 hour look ahead, along with the roughly 1 hour look ahead in RTD, have alleviated much of these concerns.**
- **This suggests it is appropriate for the NYISO to modify the Hybrid GT Pricing logic to model GTs as dispatchable in the pricing pass, allowing GTs to set price in the final pricing pass (i.e., the second ideal pass).**

Hybrid GT Pricing Improvements

- **The project seeks to improve price transparency and to better align GT prices and schedules which will ultimately help to improve RTC-RTD convergence**
- **Hybrid GT Pricing was voted on at the September 28, 2016 Management Committee meeting and has been included as a continuing project for 2017**
- **Implementation is scheduled for Q1 2017**

2017 Initiatives for Sustaining BRM

RTC/RTD Forward Horizon Coordination

- **2017 approved project (Study)**
- **The RTC-RTD Forward Horizon Coordination project aims to improve modeling consistency between RTC and RTD and evaluate improvements to RTC and RTD look-ahead evaluations to reduce real-time price volatility.**
- **An update to the project was provided at the 9/29 MIWG.**
- **A study will be conducted in 2017 to identify potential opportunities to alleviate unnecessary ramp constraints, reduce unnecessary price volatility and provide better SCUC-RTC-RTD price convergence, all of which would contribute to improving BRM.**

Other Initiatives for Sustaining BRM not prioritized for 2017

Ontario Price Changes

- **Proposed project 2017, not prioritized**
- **PJM and MISO have made changes to their pricing for interchange that sources or sinks within Ontario. These changes from the RTOs were designed to capture the performance of the Ontario – Michigan PARs when marginal energy prices are established. This project will look to determine whether the NYISO needs to make conforming changes, and implement those changes if necessary.**

Eliminate Fees for Transactions with PJM

- **Proposed 2017 project (SOM), not prioritized**
- **The efficiency benefits of the CTS process with PJM have fallen short of expectation since it was implemented in the Q4 of 2014. Potomac Economics recognizes that the lower utilization of the CTS with PJM can be attributed to the relatively large fees that are charged to transactions between NYISO and PJM, while fees were eliminated in 2015 between ISO-NE and NYISO.**
- **The NYISO views the elimination of fees as an important project to contribute to the sustaining BRM effort, however this requires consensus among both NYISO and PJM stakeholders.**

5-min & 15-min Transaction Scheduling

- **Proposed project for 2016 & for 2017, not prioritized**
- **5-min Transaction Scheduling – implementation of this project would improve real-time interchange scheduling processes by allowing economic scheduling of interchange via 5 minute Real-Time Dispatch (RTD).**
- **15-min Transaction Scheduling HQ Cedars & IESO – implementation of these projects would improve real-time interchange scheduling process at the HQ Dennison-Cedars and IESO Bruce interties.**
- **The scheduling projects would contribute to sustaining BRM by helping to improve price convergence between markets.**

Next Steps

- **Hybrid GT Pricing Improvements** scheduled to be deployed Q1 2017.
- **RTC/RTD Forward Horizon Coordination Improvement Study** planned for 2017.
- **The NYISO will continue to review and provide the BRM market metrics reports on a monthly basis, and investigate additional metrics that prove valuable to Market Participants.**
- **The NYISO will continue to monitor reliability and market outcomes to identify further potential opportunities for sustaining BRM.**

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- *Maintaining and enhancing regional reliability*
- *Operating open, fair and competitive wholesale electricity markets*
- *Planning the power system for the future*
- *Providing factual information to policy makers, stakeholders and investors in the power system*

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