

Northeast Seams Report

Rana Mukerji

Senior Vice President, Market Structures New York Independent System Operator

Business Issues Committee Meeting June 18, 2014 Rensselaer, NY



Issue	Description
1. Michigan- Ontario PAR Cost Allocation	 On October 20, 2010 Midwest ISO and ITC filed proposed tariff amendments at FERC seeking to allocate 30.9 % of the cost of ITC's phase angle regulating transformers at Bunce Creek on the Michigan-Ontario border to New York, and 19.5% to PJM. The Commission has set a November 10, 2010 comment date in Docket No. ER11-1844. The NYISO intends to vigorously oppose this proposal.
	 On November 17, 2010 the NYISO, the New York TOs, ISO-New England and many other entities filed protests in opposition to joint Midwest ISO-ITC cost allocation proposal. NYISO contends that the cost allocation proposal is not consistent with Commission precedent or the Commission's recent transmission planning and cost allocation NOPR.
	 On May 22, 2012, FERC issued a declaratory order instructing the NYISO "the Commission has accepted MISO's proposed allocation and charges in Docket No. ER11-1844, and permitted them to become effective, subject to refund. Therefore, any charges properly billed pursuant to these Commission-accepted MISO Tariff provisions must be paid by NYISO in accordance with the provisions of MISO's Tariff."
	 A hearing before the FERC Administrative Law Judge (ALJ) regarding cost recovery for the MI/ON PARs was concluded on September 13, 2012. Initial and Reply Briefs were filed by all parties to the proceeding in October.
	 On December 18, 2012 the FERC ALJ issued his Initial Decision rejecting the MISO/ITC proposal to allocate a portion of the cost of the MI/ON PARs to PJM and New York. MISO and ITC filed exceptions arguing that the AJL's Initial Decision should be overturned by the Commission. Responses to the MISO/ITC Exceptions were submitted by NYISO, the NYTOS, PJM, the PJM TOS and the MISO TOS on February 6, 2013.

2



Issue	Description
2. Market-to-Market Coordination- PJM	 NYISO and PJM activated M2M coordination on January 15, 2013. The ISOs have successfully coordinated generation redispatch for several flowgates and have begun to coordinated Ramapo tap changes based on the M2M protocols.
	 On July 12, 2013 PJM suspended M2M Ramapo PAR coordination of the thunderstorm alert (TSA) M2M flowgates. NYISO and PJM are engaged in ongoing Dispute Resolution regarding PJM's suspension of coordination on these flowgates.
	 At the March 4, 2014 MIWG NYISO presented a proposal which would allow NYISO and PJM to resume M2M Ramapo PAR coordination of the thunderstorm alert (TSA) flowgates. NYISO intends to request stakeholder approval for updates to the PJM-NYISO JOA and file with FERC for implementation by summer 2014.
	 On April 11, 2014 the NYISO MC approved revisions to the PJM-NYISO JOA which will allow TSA flowgates to be re-introduced into M2M Ramapo PAR coordination.
	 On June 4, 2014 FERC issued an order accepting revisions to the PJM- NYISO JOA with an effective date of June 11 enabling M2M coordination at times when a Storm Watch is in effect in New York.



Issue	Description
3. Interface Pricing	 On October 26, 2011 NYISO deployed pricing and scheduling software enhancements that are designed to allow the NYISO to better reflect the distribution of flows around Lake Erie. These enhancements are referred to as "Interface Pricing."
	 On March 20, 2013 FERC issued an order accepting the NYISO's January 18 proposed interface pricing Tariff revisions. Accordingly the NYISO begun posting to its OASIS Lake Erie unscheduled power flow assumptions used for the Day Ahead market and PJM interface interchange distribution assumptions used for both the Day Ahead and Real Time markets. The Commission also directed the NYISO to file additional tariff revisions requiring that the NYISO, in consultation with its MMU, to seek authorization from the Commission to add additional prohibited scheduled paths at such time that it becomes apparent that a path is being scheduled in a manner inconsistent with expected actual flows. In accordance with FERC's March 20, 2013 Order, on May 20, 2013, the NYISO submitted tariff revisions that are designed to permit the NYISO, acting in consultation with its MMU, to submit a compliance filing to FERC proposing to prohibit the use of particular scheduling path(s). On June 25, 2013 FERC accepted the NYISO filing.



Issue	Description
4. Enhanced Interregional Transaction Coordination	 EITC Phase III (15-minute scheduling at PJM) At the June 6, 2011 Market Issues Working Group NYISO provided an update on EITC Phase 3 which will provide for 15-minute transaction scheduling between NY and PJM. Software and tariff changes developed for EITC Phase 1 will support much of the EITC Phase 3 deployment. Additional operational tools and procedures will be developed to support 15-minute checkouts with PJM. At the April 26, 2012 MIWG NYISO provided stakeholders with an update on the rollout of 15-minute transaction scheduling with PJM. The roll-out order for the proxy buses will be: Keystone, Neptune, Linden VFT. Market Participants will be given two weeks notice before the implementation at each proxy. On June 27, NYISO activated 15-minute scheduling at the Keystone proxy bus. On October 30, 2012 15-minute scheduling was activated for the Neptune proxy bus. On November 28, 2012 NYISO activated15-minute scheduling for the Linden VFT proxy bus. On June 3, 2013 the HTP entered commercial operation. The implementation includes 15-minute scheduling capability.



4. Enhanced EITC Phase IV (CTS with ISO-NE) Interregional • On April 19, 2012 FERC issued an order accepting NYISO's proposed tariff Transaction • Both ISOs are working toward an end of 2015 implementation	Issue	Description
 Coordination (continued) EITC Phase V (CTS with PJM) The consumer impact analysis for CTS with PJM was presented to stakeholders the August 6, 2013 MIWG. NYISO expects to see three to ten million dollars in annual NY production cost savings as a result of implementation of CTS with PJM On February 20, 2014 FERC approved both the NYISO and PJM's CTS tariff revisions. NYISO expects to implement CTS with PJM in November 2014. PJM will present an update on the transparency and accuracy of IT SCED prices at their March 5 Market Implementation Committee in response to the Coordinate Transaction Scheduling proposal that was approved in PJM. The presentation includes updated NYISO Look-Ahead Price Analysis comparing RTC and RTD prices in 2013. The presentation can be found at: <u>http://www.pjm.com/~/media/committees-groups/committees/mic/20140305/20140505/20140505/201405/201505/201405/201505/201505/2005/201505/201505/201505</u>	4. Enhanced Interregional Transaction Coordination	 EITC Phase IV (CTS with ISO-NE) On April 19, 2012 FERC issued an order accepting NYISO's proposed tariff revisions effective with the implementation of CTS. Both ISOs are working toward an end of 2015 implementation. EITC Phase V (CTS with PJM) The consumer impact analysis for CTS with PJM was presented to stakeholders at the August 6, 2013 MIWG. NYISO expects to see three to ten million dollars in annual NY production cost savings as a result of implementation of CTS with PJM. On February 20, 2014 FERC approved both the NYISO and PJM's CTS tariff revisions. NYISO expects to implement CTS with PJM in November 2014. PJM will present an update on the transparency and accuracy of IT SCED prices at their March 5 Market Implementation Committee in response to the Coordinated Transaction Scheduling proposal that was approved in PJM. The presentation includes updated NYISO Look-Ahead Price Analysis comparing RTC and RTD prices in 2013. The presentation can be found at: http://www.pim.com/~/media/committees-groups/committees/mic/20140305/20140305-item-08a-it-sced-pricing-transparency-and-accuracy.ashx PJM has scheduled a vote for moving forward with implementation of CTS at



Issue	Description
Issue 4. Enhanced Interregional Transaction Coordination (continued)	 EITC Phase V (CTS with PJM) [continued] At the November 1, 2013 MIWG NYISO provided stakeholders with an update on changes to the external transaction bid structure required for the implementation of CTS with PJM. On March 26, 2014 NYISO deployed the new Joint Energy Scheduling System (JESS) interregional energy transaction bidding platform.
	 At the July 7, 2014 MIWG NYISO will review enhancements to the JESS to support CTS transaction bidding and 15-minute transaction bid curve blocks. Activation of CTS bidding with PJM is targeted for November 2014. At the June BIC NYISO will seek stakeholder approval for tariff revisions to clarify credit requirements for CTS transactions. The tariff revisions will allow for consideration of day ahead transaction schedules in the determination of the credit requirements for CTS transactions. Five-minute Transaction Scheduling (at HQ Chateauguay) Five-minute transaction scheduling would look to continue to improve real-time interchange scheduling processes by allowing economic scheduling of interchange across controllable interties via the 5 minute Real-Time Dispatch ('RTD'). This initiative is being considered for design and implementation in the 2015-2016 time frame.



Issue	Description
4. Enhanced Interregional Transaction Coordination (continued)	 Evaluation of Energy Market Offer Cap At the March 25, 2014 MIWG NYISO reviewed details related to the temporary bid cap waiver which was in effect from January 22 to February 28. At this MIWG, Potomac Economics provided their assessment of the impact the existing offer cap had on market outcomes. PJM is working with stakeholders in their region through their MRC to consider modification to the offer cap. NYISO will continue to coordinate with PJM and ISO-NE as well as NYISO stakeholder considering any modifications to the offer cap.



Estimated Benefits of Broader Regional Markets Initiatives

- An analysis of the Broader Regional Markets initiatives conducted by the NYISO's Independent Market Monitor indicates, under a \$6 per MMBTU natural gas price scenario, annual regional savings of at least \$362 million with \$193 million annual savings on New York interfaces and constraints.
- Coordination of flows around Lake Erie would result in an estimated \$53 million in annual savings regionally with \$18 million for New York interfaces and constraints
 - ✓ Gross value of over-priced and under-priced loop flow is \$430 on an annual basis
 - ✓ Reasonable to expect to capture 10-20% of this value
- Improved interface utilization would result in \$309 million in annual savings regionally with \$175 million for New York interfaces and constraints
 - Measured as reduction in production costs
 - ✓ Results in price convergence between regions
- At the September 27, 2010 joint stakeholder technical conference David Patton presented an update to the analysis of the benefits of the Broader Regional Market Initiatives originally presented at the April 21 MC meeting.



Issue	Description
5. Reserves Participation in Adjacent Regional Markets	 There is Market Participant interest in selling operating reserves from generation sources in one region to provide reserves in another region. This issue will be considered along with other longer-term market issues as part of the NYISO Market Evolution Plan, which was presented to NY stakeholders in June 2005. Since late 2005, the NYISO's Market Evolution Plan is part of its strategic planning process. The NYISO suggested this item to its Market Issues WG for stakeholder discussion and prioritization. Following implementation (October 2006) and assessment of their reserve market, ISO-NE will consider inter-control area provision of reserves.
	 The NYISO intends to evaluate the capabilities for cross border reserve trading as part of the Interregional Transaction Coordination effort in 2010.
	 On November 10, 2010 NYISO presented a proposed approach for allowing market participants to purchase or sell Operating Reserves and Regulation Service at an external interface. Reserve product qualification, performance management, scheduling, and settlement aspects of the proposed approach were discussed.



Issue	Description
6. Congestion Rent Shortfalls Resulting From External Transmission Outages	 Transmission outages or deratings occurring outside of the NYCA that are not anticipated at the time of a TCC auction can force the NYISO to reduce the assumed transfer capability between the NYCA and the adjacent control area. If the resulting set of TCCs are rendered infeasible, the NYISO will incur congestion rent shortfalls in the day-ahead market. There is currently no way to assign the cost impact (due to the congestion rent shortfall) of that outage to the responsible external transmission owner. In addition, transmission outages or deratings that cause reductions in transfer capability between regions may have an impact on ICAP sales between regions. NYISO Senior Management will evaluate project, scheduling and budget impacts in conjunction with all other identified initiatives and determine what further action will be taken. NYISO will evaluate this issue as part of NYISO's market rules assessment initiative.



Issue	Description
7. Elimination of Rate Pancaking	The NYISO, with the support of the New York TOs, will initiate discussions among the affected parties in the Northeast to explore the potential for rate pancaking relief between New York and PJM. A meeting between the NY and PJM TOs was held on August 18, 2005 to initiate discussions on this issue. With the Transmissions Owners as the primary drivers of this issue, NYISO and PJM are awaiting indications of intent from PJM's TOs as to the level of priority this issue has with the TOs. PJM has supply transaction data regarding volume and rates for PJM exports into NY.
	 The NYISO has also initiated discussions with IESO to eliminate export fees. The revenue application review process for the transmitter that owns the inter-tie transmission lines in Ontario, and is responsible to the provincial regulator for this fee, is currently ongoing. The possibility of eliminating the transmission export fee, along with other options, is being discussed at this rate hearing. The decision on the transmitter's revenue application is expected to be given in May of 2007.
	 The Ontario Energy Board recently upheld the \$1/MWh export charge from IESO. However, the IESO will be (1) conducting a study on appropriate export transmission service rates for Hydro One Networks' 2010 rate process; and (2) will start negotiations with the NYISO to pursue a reciprocal arrangement to eliminate export charges. The IESO will begin discussions with its neighbors early in 2008 and will complete its market impact studies in 2009. The Ontario Energy Board must approve any changes to Hydro One's export transmission charges.
	 While rate pancaking between NYISO and ISO-NE has already been eliminated, it is anticipated that the recently initiated interregional cost allocation discussions taking place under the Northeastern ISO/RTO Coordination of Planning Protocol will address the elimination of through-and-out charges between NYISO and PJM.



Issue	Description
8. Asymmetric Capability Year Impact on Inter- Area Capacity Sales	The NYISO capability year begins May 1st, while the capability years for both PJM and ISO-NE begin on June 1st. The election to use Unforced Deliverability Rights (UDRs) for controllable tie-line capacity at an interface with an external control area is factored into the NYISO's annual planning process determining locational capacity requirements. The capacity of a controllable tie-line not used for UDRs may be modeled as emergency assistance in the planning process, subsequently reducing the locational capacity requirement. The one month difference between capability years across the ISOs may be an issue in instances where full capability year obligations or contracted capacity from one control area is transitioned to meet requirements in the neighboring control area.
	 On February 3, 2010 FERC approved Tariff changes necessary to support the Capability Year adjustment election for holders of UDRs.
	 At the June 17, 2010 Installed Capacity Working Group (ICAP WG) NYISO presented an overview of market design considerations related to the realignment of NYISO's ICAP Capability Year with neighboring markets. PJM and ISO-NE both employ a planning year beginning on June 1 each year and the NYISO employs two distinct six-month capability periods within a capability year beginning on May 1 each year. The NYISO requested feedback from market participants related to anticipated market benefits, additional perceived obstacles, potential impacts on exports from New York, and prioritization with respect to other ICAP market enhancements.



Issue	Description
9. Capacity Market Enhancements	 Explore Impediments to Reciprocal Capacity Wheeling with New England Identity the scope of issues pertaining to auction structure, timing, planning, operations, IRM/LCR, cost allocation and other impact areas in NY and NE markets
	 Identify/enumerate capacity market seams
	 Investigate whether delisted capacity is treated similarly in ISO-NE and NYISO (ICAP vs. UCAP, interaction with export limit, losses, etc.)
	 Preliminary findings of the capacity market study were reviewed with stakeholders at the July 31, 2012 ICAPWG meeting.
	 At the September 11, 2012 ICAPWG meeting FTI presented draft capacity market study results and solicited stakeholder feedback and comments. A draft version of the report will be distributed for stakeholder comment in mid-October with a final version issued in early November.
	 The deadline for submitting written comments on the draft capacity market study report was extended to December 20, 2012. The NYISO posted the final capacity market study report on March 14, 2013.
	 FERC held a technical conference on February 26, 2014 to explore the possibility of modeling Zone K as an export constrained zone. NYISO filed post technical conference comments with FERC on March 26, 2014.



Issue	Description
10. Market Solutions to Loop Flow: Buy-Through of Congestion	 Unscheduled power flows, particularly around Lake Erie, can negatively impact both electric system reliability and market operations. The NYISO is conducting a comprehensive investigation of transaction scheduling and pricing protocols and incentives in order to assist its efforts to work with PJM, MISO and IESO to develop an alternative long-term solution to address mitigate the market and reliability impacts of unscheduled Lake Erie power flows. The results of this ongoing analysis have been, and will continue to be, shared with stakeholders to facilitate an informed discussion of a viable long term solution for managing loop flow.
	 Per the December 30, 2010 FERC order, the NYISO has suspended work on Buy- Through of Congestion in order to focus resources on the Commission's priorities of Interface Pricing and Market to Market.
	 In March of 2014 NYISO is obligated to submit an informational report to FERC addressing the effects of various market improvements on loop flow, and assessing the need to implement a Buy-Through of Congestion solution to loop flow at this time. See New York Independent System Operator, Inc., 133 FERC ¶ 61,276 (2010). NYISO will collaborate with neighboring ISOs/RTOs and stakeholders in developing the report.
	 At the March 4, 2014 MIWG the NYISO provided stakeholders with an overview of the report to FERC on the effects of the Broader Regional Market initiatives. The NYISO is working with PJM, ISO-NE, MISO and IESO on this report and expects to submit this report with FERC on March 19, 2014. NYISO submitted this report on March 19, 2014.



Issue	Description
11. Coordination of Interregional Planning	 FERC issued Order 1000, the Final Rule on Transmission Planning & Cost Allocation on July 21, 2011. It contains new requirements in the following areas: Regional Planning Public Policy Considerations Inter-regional Planning Cost Allocation: Both regional and inter-regional Eliminates "Right-of-First-Refusal" tariff provisions It is anticipated that the Northeast ISO/RTO Planning Coordination Protocol will be utilized as the vehicle for compliance filings related to inter-regional planning and cost allocation. Order 1000 Regional Requirements On October 11, 2012 NYISO made a joint compliance filing with the TO's to address the regional planning and cost allocation requirements of Order 1000. On April 18th FERC issued an Order on Compliance which conditionally accepted the NYISO/NYTOs' regional compliance filing There were numerous conditions—and some are significant Additional compliance filing is required by August 16th NYISO will be working with the NYTOs and ESPWG to develop a response to the Order NYISO has scheduled joint IPTF/ESPWG meetings on a bi-weekly basis
	through August



Issue	Description
11. Coordination of Interregional Planning (continued)	 Order 1000 Regional Requirements (cont'd)
	 On October 15th, NYISO made a compliance filing to address the regional planning and cost allocation requirements of the April 18th order.
	 NYISO and the NYTOs filed a joint response to the protests on December 16th and are awaiting FERC response
	 NYISO has begun work on various implementation procedures and other tasks in anticipation of a final FERC Order
	 On February 25th, NYISO staff reviewed proposed updates to the Reliability Planning Manual, the CARIS Planning Manual and a proposed cost allocation methodology for transmission security projects with ESPWG
	 In March and April, NYISO staff continued stakeholder review of the Reliability and Economic Planning Manuals.
	OC approved the Reliability Planning Manual on May 15th
	 BIC approved the Economic Planning Manual on May 12th
	 Draft Study Agreements for Reliability and PPR to be presented to ESPWG on June 12th
	 Revisions to the CRP section of the Reliability Planning Manual as well as preparation of a new Public Policy Planning Process Manual are underway



Issue	Description
11. Coordination of Interregional Planning (continued)	 Order 1000 Interregional Requirements NYISO, PJM and ISO-NE held IPSAC webex meetings on January 28th and February 26th to discuss stakeholder comments on the Northeast Protocol. Written comments were requested by March 4th Separate compliance filings were made by each region on July 10th On September 24th, NYISO filed an answer to third party protests regarding certain aspects of the July 10th compliance filing On an IPSAC Webinar held on March 28th, ISO-NE, NYISO and PJM
	reviewed the Order 1000 interregional requirements and implementation procedures anticipated under the July 10 th compliance filings • Awaiting FERC response



Issue	Description
12. Eastern Interconnection Planning Collaborative (EIPC)	 On December 18, 2009, the DOE announced award selections totaling \$60 million dollars in funding to develop open and transparent stakeholder processes and to conduct transmission planning analyses on an interconnection-wide basis. The awardees for the Eastern Interconnection were the EIPC proposal for developing the stakeholder process and performing the technical analysis and the EISPC proposal to establish a consensus-building process among the Eastern states to identify resource and policy options as input to the technical analysis.
	 2011: Phase 1 Summary Eight energy futures were developed and approved by SSC Macroeconomic analysis was completed on a total of 80 futures and sensitivities The SSC selected the final three Scenarios for analysis in Phase II: Business As Usual National RPS—Regional Implementation Combined Federal Climate and Energy Policy Phase I Report was filed with DOE on December 16th Phase I Report posted on EIPC Website at: http://eipconline.com/uploads/Phase 1 Report Final 12-23-2011.pdf



Issue	Description
12. Eastern Interconnection Planning Collaborative (EIPC) (continued)	 2012: Phase II Summary Power flow models were developed for the final three SSC Scenarios EIPC PAs identified transmission facilities to support each resource expansion Cost estimates were developed for the transmission and resource additions for each scenario Production cost analysis and sensitivity analysis was conducted for each scenario PAs prepared a draft Report to present the results of the Phase II analyses for stakeholder review and comment EIPC submitted the final version of the Phase 2 Report to DOE for review and comment on December 26th <i>This report is posted on the EIPC website at http://eipconline.com/Phase_II_Resources.html</i>



Issue	Description
12. Eastern	2013 - 2014: EIPC Non-Grant Study
Interconnection Planning Collaborative (EIPC) (continued)	 Joint IPTF/EGCWG meeting was held on November 25th to provide status updates on the EIPC grant and non-grant studies
	 December: EI-wide Webinar was held on December 13th to review updated roll-up cases and draft Roll-Up report and to discuss potential scenarios for analysis in 2014 and to review the schedule and next steps
	 Joint IPTF/EGCWG meeting were held on January 6th, 23rd & Feb 20th to discuss comments on the Roll-up cases and draft Report and to receive input on potential scenarios
	EIPC webinar to discuss input on scenarios was held on March 25 th
	Stakeholder written comments on scenarios were due March 28 th
	Final two scenarios and 2014 work plan was posted on April 14 th
	Update Scenario for 2023
	Drought Scenario for 2023
	EIPC has begun model development for these two scenarios



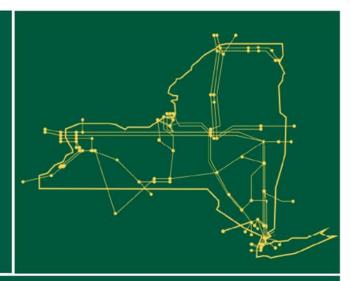
Issue	Description
Issue 12. Eastern Interconnection Planning Collaborative (EIPC) (continued)	 Description 2013 - 2014: EIPC Gas-Electric Interface Study DOE has granted EIPC an extension of time in order to perform an analysis of the gas/electric interface. Participants in this study are: NYISO, PJM, ISO-NE, IESO, MISO and TVA Levitan selected as consultant SSC Meeting was held on October 29-30th in Washington DC to kick-off the study, review the Work Plan, models, input assumptions and output formats Joint IPTF/EGCWG meeting was held on Nov 25th to provide status updates regarding the EIPC grant and non-grant studies. SSC Meeting was held on December 20th to discuss electric and gas sector assumptions for Targets 1-4; describe three Scenarios and discuss possible sensitivities for Target 2. Joint IPTF/EGCWG meeting was held on January 6th to review the input assumptions for the three gas demand scenarios, to discuss possible sensitivities and to review the schedule and next steps Comments on input assumptions due on January 6th



Issue	Description
12. Eastern Interconnection Planning Collaborative (EIPC) (continued)	2013 - 2014: EIPC Gas-Electric Interface Study (cont'd)
	 An SSC Webinar was held on Jan 31st to report on the status of Target 1; receive input on sensitivities for Target 2 and kick-off Target 4.
	 Joint IPTF/EGCWG Meetings were held on February 20th and March 11th to receive input on sensitivities for Target 2
	 SSC Webinars were held on February 28th and March 21st to discuss the Target 1 Draft Report and finalize the sensitivities for Target 2
	 Target 1 Final Draft Report and Target 2 First Set of sensitivities were posted on April 14th
	 Revised Schedule for finalizing Target 2 sensitivities
	Target 2 Draft Report posted with results from the Three Scenarios and the first set of sensitivities on June 20 th
	 SSC Meeting in Atlanta on June 25-26th to discuss Target 2 Draft Report and finalize second set of sensitivities
	Post second set list of sensitivities on July 3 rd
	Target 2 analysis to continue through mid-September
	 Data collection and model building are underway in preparation for Target 3 and 4 analysis later in the year
	The Study and technical analysis is expected to continue through 2014



The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



www.nyiso.com