



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

NYISO Consumer Interest Liaison Weekly Summary

September 26 – September 30, 2016

Notices:

- *The following organization has been approved for Party status in the NYISO Governance as a Non Voting Entity: ---> **Advanced Microgrid Solutions, Inc.***
- *The following organization has been approved for Party status in the NYISO Governance as a Non Voting Entity: ---> **The Environmental Defense Fund***
- *New York is leading the way when it comes to integrating distributed energy resources. Driving that plan is a roadmap devised through the NYISO Stakeholder process. In this issue of [Connection](#) read **highlights from our recent DER Workshop that addressed the roadmap and the NYISO's goals for integration.** Also this quarter, we announce new leadership, discuss Power Trends, and further our education objectives by welcoming more STEM students to the Control Room.*
- *On September 26, 2016, the **ISO/RTO Council (IRC)** filed comments in response to the Federal Energy Regulatory Commission, Notice of Inquiry (NOI) for possible modifications to the **Critical Infrastructure Protection (CIP) Reliability Standards regarding the cyber security of Control Centers** used to monitor and control the Bulk Electric System (BES) in real time. A copy of the filing can be viewed on the [NYISO Website](#)*

Meeting Summaries:

Monday, September 26, 2016

Joint Electric System Planning Working Group/Transmission Planning Advisory Subcommittee

AC Transmission Public Policy Transmission Need Viability and Sufficiency Assessment

Dawei Fan of the NYISO presented an update on the AC Transmission Public Policy Transmission Need (PPTN) Viability and Sufficiency Assessment performed by the NYISO. Mr. Fan led a review of the process that initiated the PPTN process and the steps the NYISO has taken to date. The AC Transmission PPTN consists of Segment A, to address the Central East interface, and Segment B, to address the UPNY/SENY interface. NYISO issued a solicitation



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

for Public Policy Transmission Projects and Other Public Policy Projects to address the AC Transmission PPTN on February 29, 2016. In response to the solicitation, Six Developers submitted 16 project proposals. Following evaluation of the 16 project proposals, 13 were found to be viable and sufficient:

- *National Grid / Transco – New York Energy Solution Segment A*
- *National Grid / Transco – New York Energy Solution Segment B*
- *NextEra Energy Transmission New York – Enterprise Line: Segment A*
- *NextEra Energy Transmission New York – Enterprise Line: Segment B*
- *NextEra Energy Transmission New York – Enterprise Line: Segment B Alt.*
- *North America Transmission / NYPA – Segment A + 765 kV*
- *North America Transmission / NYPA – Segment A Base*
- *North America Transmission / NYPA – Segment A Double Circuit*
- *North America Transmission / NYPA – Segment A Enhanced*
- *North America Transmission / NYPA – Segment B Base*
- *North America Transmission / NYPA – Segment B Enhanced*
- *ITC New York Development – 16NYPP1-1A AC Transmission*
- *ITC New York Development – 16NYPP1-1B AC Transmission*

NYISO will publish and submit to the PSC the final Viability & Sufficiency Assessment in mid-October 2016 for PSC review. If PSC confirms a need for transmission, the NYISO will continue to evaluate transmission solutions to the AC Transmission Public Policy Transmission Need. Within 15 Calendar Days following the PSC’s issuance of an order finding a continued need for transmission, Developers must provide notice of their intent to proceed with the evaluation of their viable and sufficient projects. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2016-09-26/AC_Transmission_.pdf

Wednesday, September 28, 2016

Management Committee

Motion #1:

The Management Committee (MC) approves the August 31, 2016 meeting minutes.

The motion passed unanimously

Motion #2:

The Management Committee (MC) hereby approves revisions to the NYISO’s Market Administration and Control Area Services Tariff (MST), as more fully described in the presentation entitled “Hybrid GT Pricing Improvements,” made to the MC on September 28, 2016 and recommends that the NYISO Board of Directors authorize NYISO staff to file such revisions under Section 205 of the Federal Power Act.

The motion passed unanimously with abstentions



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

Motion #3:

WHEREAS, the ESPWG and TPAS have held a series of meetings with NYISO Staff to discuss and review the studies and analyses underlying the NYISO’s findings regarding Reliability Needs in New York State; and

WHEREAS, NYISO Staff has provided a draft Reliability Needs Assessment (“RNA”) dated September 20, 2016, including Appendices, for the September 28, 2016 Management Committee (“MC”) meeting; and

WHEREAS, NYISO Staff has incorporated modifications to this document based on comments received at eight ESPWG/TPAS meetings from May 5, 2016 through August 25, 2016, and made a presentation of its findings based on the 2016 Reliability Needs Assessment Draft Final Report (“RNA Report”) at the September 19, 2016 OC meeting; and

WHEREAS, the OC reviewed and concurred with the RNA Report, with the limited modifications discussed at the OC meeting, and recommended that the MC concur with the RNA Report, as revised at the September 19, 2016 OC meeting, and that the MC recommend approval of such revised RNA Report by the NYISO Board of Directors;

NOW, THEREFORE, based on the presentation made by the NYISO at the September 28, 2016 MC meeting, the MC hereby concurs with the RNA Report as presented and discussed at the September 28, 2016 MC meeting, and hereby further recommends the approval of such RNA Report by the NYISO Board of Directors.

The motion passed unanimously

Wednesday, September 28, 2016

Installed Capacity Working Group

Consumer Impact Analysis: 2015/2016 ICAP Demand Curve Reset – Additional Analysis

Tariq Niazi of the NYISO presented a follow-up to the August 2, 2016 Consumer Impact Analysis of the 2015/16 Demand Curve Reset (DCR). The August 2, 2016 analysis measured the impacts of including or excluding dual fuel capability for the peaking plant in the NYCA and G-J Locality ICAP Demand Curves. The analysis also included the impacts of including or excluding selective catalytic reduction (SCR) emissions control technology in the proxy units. Some stakeholders requested additional analysis in response to the NYISO’s August 2, 2016 presentation. In response to the stakeholder request, Mr. Niazi conducted additional analysis to assess the impact of varying capacity resource additions and reductions on the analysis provided. The results of the analysis were provided with scenarios of 400MW of Capacity added to the supply level and 400MW of Capacity removed from the supply level in the G-J Locality to illustrate the extent to which the cost of dual fuel capability and the inclusion of SCR technology are affected by changing supply levels. The NYISO also compared the impact on consumers when comparing the Analysis Group recommendations to the NYISO recommendations. The results were as follows:



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

Change in MWs	Scenario	Cost to consumers Based on AG Recommendation (in millions)	Cost to consumers Based on NYISO recommendation (in millions)
Original Analysis	Including DF Capability in ROS, G-J	\$76.2	\$37.0
Plus 400MW	Including DF Capability in ROS, G-J	\$53.7	\$26.9
Minus 400MW	Including DF Capability in ROS, G-J	\$99.0	\$45.7
Original Analysis	Including SCR Technology	\$226.4	\$226.4
Plus 400MW	Including SCR Technology	\$156.3	\$156.3
Minus 400MW	Including SCR Technology	\$291.4	\$291.4

There was an additional stakeholder request to investigate the potential cost to consumers in the event of severe natural gas price spikes without the DCR compensating dual fuel capability in the ROS and G-J Localities. As it is very difficult to accurately forecast energy prices for the future, Mr. Niazi provided data from past severe weather winters. A review of the data shows there was only one winter since 2011/2012 when providing dual fuel capability was economic. Mr. Niazi noted that other relevant factors should also be considered in assessing whether dual fuel capability is warranted. To see the complete Consumer Impact Analysis presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-09-28/DCR%20Supp%20CIA.pdf

Alternatives For Determining LCRs -- Project Update and Initial Results

Amanvir Chahal of Navigant Consulting, Inc. (Navigant) presented the initial results for the project to provide alternative methods for determining the Locational Capacity Requirements (LCRs). Mr. Chahal provided a line chart illustrating the relative stability of LCRs at differing Installed Reserve Margin (IRM) values when determining the LCRs simultaneously, as opposed to setting them individually. Optimizing for IRM and LCRs simultaneously resulted in an IRM of 16.7%. A graph was provided to illustrate the lower relative cost of Capacity procurement through both the fixed IRM runs and the co-optimized IRM of 16.7%, when compared to the current Tan45 methodology. Mr. Chahal noted that additional runs using objective functions beyond minimizing the cost to procure capacity may need to be explored. Several sensitivity runs were performed by adding and subtracting Capacity in the Localities using the fixed IRM and the co-optimized IRM, while adding and subtracting Capacity in Localities to indicate preliminary LCR results. The results indicate the co-optimization of the IRM adds stability to the results. Mr. Chahal led a review of the cases currently under study and requested stakeholder input for additional sensitivities. A tentative schedule for the project was provided, anticipating the final findings in December 2016. To see the presentation from Navigant, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-09-28/LCR%20presentation%2009%2027%2016%20_final.pdf



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

Thursday, September 29, 2016

Market Issues Working Group

Coordinating without the ConEd/ PSEG Wheel

Ethan Avallone of the NYISO presented an update on the effort to coordinate energy flows between NYISO and PJM following the termination of the ConEd/PSEG wheel. Mr. Avallone summarized the Joint NYISO/PJM Stakeholder Meeting that was held on September 16, 2016 at the NYISO. In summary, the proposed solution will:

- *Include ABC and JK as part of the NY-PJM AC Interface for interchange scheduling*
- *Add the PARs on ABC and JK to the Market-to-Market PAR Coordination process between NYISO and PJM*
- *Include an Operational Base Flow (OBF) of 400 MW*
- *Result in PJM redefining the NYIS Proxy bus Interface definition*

A percentage of the overall NY-PJM AC Interchange, as well as a flow offset (referred to as the Operational Base Flow) will be modeled in the NYISO and PJM Markets, and will be included in the real-time desired flow calculations over those facilities. Mr. Avallone addressed the treatment of the Rockland Electric Company (RECo) load as continuing the status quo. An example of the protocol for out-of-service phase angle regulators (PARs) was provided to illustrate potential percentage of flow adjustments. The NYISO and PJM will post the final version of the whitepaper on coordination with the meeting's materials. Mr. Avallone noted that the Joint Operating Agreement will require revision over the coming months and highlighted sections of the NYISO tariff that will require changes. A timeline was provided for the anticipated process. To see Mr. Avallone's complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-09-29/Coordinating%20without%20the%20ConEd-PSEG%20Wheel%20Sept%20MIWG.pdf

Energy Storage Integration -- Market Concepts

James Pigeon of the NYISO presented an update on the NYISO proposed market design concepts to incorporate energy storage into the wholesale markets. Mr. Pigeon noted that the NYISO initiative is for wholesale grid connected storage resources only (i.e., resources in front of the meter on the transmission system without any load), and all other storage resources will be addressed as part of the NYISO's Distributed Energy Resource (DER) program initiative. The current storage participation options the NYISO offers were highlighted and Mr. Pigeon explained the differences between the Energy Limited Resource (ELR) and the Limited Energy Storage Resource (LESR) options. The proposed market design concept seeks to reduce barriers for storage resources to participate in the wholesale markets by enhancing the current LESR product. The proposed enhancements include:

- Expand eligibility to qualify as LESR to include resources with ability to sustain max. Energy injection/withdrawal for between ≥ 15 min and ≤ 4 hrs

Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

- Modify energy settlement for LESRs to use 5 min pricing instead of integrated hourly average

Mr. Pigeon noted several stakeholder comments while requesting additional input as the NYISO continues to refine the proposal. Additional long-term concepts were advanced for stakeholder discussion such as:

- *Single incremental energy storage offer*
 - *This would allow a resource to withdraw or inject intra-hour based on specified price points*
- *Transition Constraints*
 - *Transition Time Constraint*
 - *This would be the number of minutes required by the unit to transition from charging to injection or injection to charging*
 - *RTC Selection Method*
 - *Option for RTC or RTD to select the charging or injection state*
- *Forbidden Operating Region Constraint*
 - *This would be a “Forbidden Operating Region” (FOR) between LOL and UOL in which the unit is unable to operate*

Another concept to be discussed in future stakeholder meetings is the DAM “Energy Constrained Offer” Optimization, similar to the Fuel Constrained Bidding concept previously discussed with stakeholders.

There is a proposed project for 2017, Energy Storage Optimization and Integration, to continue this effort and assess further opportunities to optimize and integrate grid connected energy storage resources in the wholesale market. A proposed timeline was provided to illustrate when the NYISO envisions implementing these proposed concepts over the next several years. Mr. Pigeon noted the NYISO anticipates seeking stakeholder approval for the initial Energy Storage Market Design concepts in March/April 2017 with a Q1 2018 targeted implementation. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-09-29/Energy%20Storage%20Integration%20Market%20Concepts%20MIWG.pdf

Comprehensive Scarcity Pricing Manual Changes

Ethan Avallone of the NYISO presented proposed changes to the Ancillary Services Manual, Day-Ahead Scheduling Manual and the Transmission and Dispatching Operations Manual to incorporate Comprehensive Scarcity Pricing. Following a brief review of the Comprehensive Scarcity Pricing design Mr. Avallone highlighted additional manual revisions incorporating stakeholder feedback. The NYISO will seek governance approval for the manual updates through October and November 2016. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-09-29/Manual%20Revisions%20-%20Comprehensive%20Scarcity%20Pricing%20Sept%20MIWG%20FINAL.pdf



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

RTC-RTD Forward Horizon Coordination Improvements

Nicole Bouchez of the NYISO presented an update on the RTC-RTD Forward Horizon Coordination project. 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. Dr. Bouchez provided charts that depicted the distribution of RTC-RTD price spreads by region for the period of February 2015 through February 2016. Excerpts from the 2014 and 2015 Potomac Economics' State of the Market reports (SOM) were displayed, detailing drivers of transient Real-Time price volatility. Dr. Bouchez noted market design enhancements and modeling improvements that have been implemented by the NYISO, which have helped or are expected to help improve RTC-RTD Forward Horizon Coordination Improvements (SOM recommendation). A project schedule will be established in Q1 2017 and a study produced in 2017. Stakeholder input was noted through the presentation and is requested throughout the process. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-09-29/RTC-RTD%20Forward%20Horizon%20Coordination%20Improvements%20Sept%2029%202016.pdf

Evaluation of the Impacts of the PJM Proxy Bus Modeling Issue

Potomac Economics was asked by the NYISO to evaluate an issue with the LBMP calculation for the PJM proxy bus in the RT market identified and corrected by the NYISO in August 2016. Pallas LeeVanSchaick of Potomac Economics (MMU) presented the results of the impact analysis. Mr. LeeVanSchaick detailed the issue for stakeholders, noting that the issue was a result of a delay in the Real-Time Market model being updated to match the Day-Ahead model. As a result, the average PJM Proxy LBMP was reduced \$0.49/MWh (or 1.7%) in RTC and \$0.84/MWh (or 3.0%) in RTD for the period of June 29, 2016 through August 5, 2016. There was also an effect on Rate Schedule 1 charges as balancing loss residual surpluses and balancing congestion surpluses were increased approximately \$194 thousand for the same period. Additional indirect effects of the modeling issue were presented but not quantified. The MMU recommended that the NYISO not classify the issue as a Market Problem. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-09-29/Evaluation%20of%20Potential%20Market%20Problem%20by%20MMU_9-26-2016.pdf

FERC Filings

September 26, 2016

The ISO/RTO Council (IRC) filed comments in response to the Federal Energy Regulatory Commission, Notice of Inquiry (NOI) for possible modifications to the Critical Infrastructure Protection (CIP) Reliability Standards regarding the cyber security of Control Centers used to monitor and control the Bulk Electric System (BES) in real time



Please note: This summary is provided for informational purposes only. It is not intended to be a substitute for the presentations and other information provided by the NYISO or the discussions that take place at the meetings

FERC Orders

September 30, 2016

FERC issued letter order accepting compliance filing to establish procedures for allocating revenues received from the sale of historic fixed price transmission congestion contracts.

September 28, 2016

FERC letter order accepting tariff amendments to Rate Schedule 1 of the OATT to better align the rates charged to NYISO's transmission customers with NYISO's actual operating costs

Link to FERC Filings and Orders:

http://www.nyiso.com/public/markets_operations/documents/tariffviewer/index.jsp