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NYISO Consumer Interest Liaison Weekly Summary

March 21 – March 25, 2016

Notices:

- *Please note that the **April SOAS** meeting date has been moved to **April 5** and is scheduled to begin at **9:00 a.m. (EDT)**.*
- *A revised agenda has been posted for the March 30 Management Committee meeting. Due to a scheduling conflict, the **Demand Curve Reset Proposal** has been moved up to **the morning session**. A link to the material has been provided below:
[Meeting Material](#)*
- *We are pleased to announce that NYISO's Training Team will be offering the, **in-class, MT101 Market Overview Course in June**. The MT-101 Market Overview is a one day course which will provide attendees with an introduction to the NYISO markets and their functions.*

Meeting Summaries:

Tuesday, March 22, 2016

Joint Electric System Planning Working Group/Transmission Planning Advisory Subcommittee/Interconnection Planning Task Force

2016 RNA Assumptions for Resource Adequacy

Bill Lamanna of the NYISO presented the assumptions that will be used in performing the 2016 Reliability Needs Assessment (RNA) Resource Adequacy study. The Study Period is for years 2017 through 2026 and is developed in conjunction with the 2017 Installed Reserve Margin (IRM) base case and assumptions, with noted exceptions. Mr. Lamanna began by presenting the load parameters. Stakeholders requested more information on how the load forecast is accounting for behind-the-meter solar growth. Arthur Maniaci of the NYISO explained steps the NYISO is taking to provide an updated load forecast in April. Mr. Lamanna detailed the other assumptions that will be used for the Study including:



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- Generation parameters
- Transactions – Import and Export
- Topology
- Emergency operating procedures
- External Control Areas
- Miscellaneous including the MARS Model and Environmental Initiatives

To see the complete presentation please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2016-03-22/ResourceAdequacyAssumptionMatrix.pdf

2015 Northeastern Coordinated System Plan Review Schedule

Zach Smith of the NYISO presented the review schedule for the 2015 Northeastern Coordinated System Plan (NCSP15). The NCSP15 has been performed in accordance with the amended Northeast Planning Protocol to coordinate interregional planning issues with ISO-NE and PJM. Mr. Smith discussed the topics covered in the report and noted that the Joint ISO Planning Committee (JIPC) identified no needs to be addressed by interregional projects. The draft NCSP15 was posted on March 14, 2016 and stakeholders are encouraged to provide comments through March 29, 2016. The JIPC will consider received comments and post a final NCSP15 by April 26, 2016. To see Mr. Smith's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2016-03-22/2015_NCSP_Review.pdf

FitzPatrick Zonal Compensatory MWs

Dana Walters of the NYISO presented a table of zonal compensatory MWs for 2019 and 2020 as a follow up to a stakeholder question in reference to the Zonal Compensatory MW requirement resulting from the deactivation of the FitzPatrick station. In response to a request for a zonal representation of compensatory MWs Mr. Walters provided the table of zonal compensatory MWs for 2019 and 2010. To see the table as presented by Mr. Walters please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_espwg/meeting_materials/2016-03-22/FitzDeactivationZonal%20Compensatory%20MWsv.pdf

Tuesday, March 22, 2016

Installed Capacity Working Group

NYISO's Proposed Winter-to-Summer Ratio Calculation

Randy Wyatt of the NYISO presented the NYISO's proposed methodology to calculate annually updated winter-to-summer ratio (WSR) values for use in calculating the ICAP Demand Curve reference point prices. The NYISO's proposed methodology calculates the WSR using available capacity from the monthly ICAP Market Reports. The proposal would annually update the WSR using the total available ICAP for the same 3 year historical period utilized in calculating net Energy and Ancillary Services (EAS) revenues. In response to an explanation of how the



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NYISO would address resource entry and exit circumstances, some stakeholders suggested that the methodology could potentially introduce unnecessary volatility into the calculation of the WSR and not truly represent the annual ratio. The NYISO noted the comments and requested additional input from stakeholders. An additional opportunity for discussion with stakeholders was scheduled for the March 24, 2016 ICAPWG meeting. To see Mr. Wyatt's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-03-22/WSR%2003222016%20ICAPWG%20Final.pdf

Overview of Tariff Revisions to Accommodate

Randy Wyatt of the NYISO presented an overview of updated tariff language to implement the proposal to change the ICAP Demand Curve reset periodicity from three to four years and include annual updates to certain parameters. The updated language includes modifications to address stakeholder feedback. The annual updates would include updates to:

- Net Energy and Ancillary Services (EAS) revenues
- Gross cost of new entry (CONE)
- Calculation of ICAP Demand Curve values

Mr. Wyatt indicated that a collaring concept, as discussed at prior ~~ICAPWG~~ ICAPWG meetings, would be included in the final tariff language to be presented at the March 30, 2016 MC meeting. This mechanism is intended to limit the amount of the ICAP Demand Curve reference point prices calculated as a result of the annual updates during the first 4 year reset period would be allowed to change from year-to-year. To see Mr. Wyatt's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-03-22/NYISO%20DCR%20Tariff%20Changes%2003222016%20ICAPWG%20Final.pdf

Wednesday, March 23, 2016

Broader Regional Markets Metrics

Dave Edelson of the NYISO presented metrics for the Broader Regional Markets (BRM) initiative for the month of February 2016. To see Mr. Edelson's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/Monthly%20Report%20-%202016_02.pdf

Balance-of-Period TCC Auction Project Status Update

Curt Devenitch of the NYISO presented the status of and timetable for completion of the Transmission Congestion Contract (TCC) Balance-of-Period project. The Balance-of-Period project is included in the market design of the Multi-Duration TCC auction. Mr. Devenitch described the history of the TCC projects that have been completed to lay the groundwork for implementing the Balance-of-Period project. The Round Type and Upgrade feature currently

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underway will update the TCC Automated Market System (AMS) by adding a new round type, addressing other enhancements and modifications, and updating the underlying technology of the system. The Credit Policy design will be finalized in 2016 along with the tariff and TCC Manual changes related to implementation of the Balance-of-Period auction structure. The Balance-of-Period auction software is anticipated to deploy to production in June 2017. Stakeholders requested that the NYISO continue to maintain a high priority on this implementation. To see Mr. Devenitch's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/agenda%203%20TCC%20Balance%20of%20Period%20MIWG%20Project%20Status%20Update_032316_final.pdf

TCC Balance of Period Design Review and Proposed Credit Policy

Pradip Ganesan of the NYISO presented the TCC Balance of Period (BoP) market design. The BoP TCC Auction provides Market Participants the ability to reconfigure their portfolios in all the remaining months of the Capability Period that are offered as part of the auction. With the BoP TCC Auction design, collateral is re-calculated at the end of each month within a Capability Period. The BoP TCC Auctions shall achieve the following objectives:

- *Each BoP TCC Auction shall include all the remaining months in a Capability Period*
- *The BoP TCC Auctions shall replace the Monthly Reconfiguration Auctions*
- *No new capacity shall be made available in a BoP TCC Auction*
- *Market Participant (MP) Invoices shall be generated monthly at the end of a BoP TCC Auction*
- *With the implementation of BoP TCC Auctions, MPs participating in the NYISO TCC market shall be subject to new credit requirements (discussed later in this presentation)*

In response to a stakeholder question, Mr. Ganesan stated that the BoP TCC auctions will be limited to the remaining months in the capability period. Future phases may include the ability to extend the multi-period auction format to time frames beyond the capability period that is offered in the BoP TCC auction. Mr. Ganesan highlighted proposed bidding features and provided examples to illustrate the features and configurations.

Sheri Prevratil of the NYISO presented a review of the proposed credit requirements for the BoP TCC auction process. The NYISO and MPs worked collaboratively throughout 2015 to develop and finalize the BoP TCC Auction credit policy and detailed analysis supporting this proposal can be found in the September 22, 2015 CPWG meeting materials. Ms. Prevratil restated the assumptions for the proposed credit policy. One update to the previously discussed credit policy is an accommodation made for a single multi-period bid. The BoP TCC Auction credit policy will be made up of three components:

- Current month credit requirement

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- *The NYISO will update the credit formulas for current month TCCs to take account of the additional data on TCC outcomes that has become available since the current rules were developed in early 2006*
 - Current month will also include the upcoming month once the BoP TCC Auction has run for the remainder of the Capability Period but has not yet started
- Future month credit requirement
 - *The BoP TCC Auction credit requirements reflect the need for a fundamental extension of the current TCC collateral design to define credit requirements for future month TCCs*
- Future six-month credit requirement
 - *The goal of this credit requirement is to establish sufficient credit support to cover the expected payments due on the TCC portfolio at the time credit support is posted to cover the last six months of an annual TCC*

Ms. Prevratil provided details and formulas to illustrate the methodology for the current month, future month and future six month TCC BoP credit requirements described above. Given MP feedback to date, the NYISO recommends utilizing the medium margin for the current month credit requirement formulas in combination with the medium scaling factors for the future six-month TCC credit requirements. After sufficient data is available, the index ratios for the future months of the BoP TCC Auction credit policy would be recalculated periodically using a combination of historical PJM FTR Auction data and NYISO BoP TCC Auction data. The initial draft of tariff language is anticipated for May 2016 with a proposed implementation to production of June 2017. To see the complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/agenda%204%20TCC%20BoP%20Design%20Review%2003232016%20MIWG%20final.pdf

Graduated Transmission Demand Curve Manual Updates

Ethan Avallone of the NYISO presented updates to the Ancillary Services (AS), Day-Ahead Scheduling (DAS), and the Transmission & Dispatching Operations (T&D Ops) manuals (Manuals). The changes are primarily the result of the implementation of the Graduated Transmission Demand Curves as well as other required updates for clarification in the T&D Ops manual. Mr. Avallone walked through the updates and provided redline versions of the Manuals for stakeholder perusal. To see Mr. Avallone's complete presentation, please go to:

http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic_miwg

Hybrid GT Pricing Improvements

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Ethan Avallone of the NYISO presented a description of the planned hybrid GT (Gas Turbine) pricing improvements. Potomac Economics (Potomac) recommended allowing GTs to be eligible to set price in the final pricing pass. Mr. Avallone noted that the NYISO is still considering the extent to which any modifications to the existing hybrid GT pricing logic are necessary. The modification of GT price setting eligibility should more closely align resource schedules from the physical pass with prices from the second ideal pass in the market software. The analysis approach intends to calculate estimated outcomes from alternative market design constructs by selecting representative days where energy offers for scheduled GTs were above the resulting real-time LBMPs and rerunning the market software for the identified real-time intervals at issue, varying the applicable hybrid GT pricing logic. The NYISO will compare the prices and schedules from production with prices and schedules from the rerun scenario. The NYISO is still considering whether further assessment of including GT start-up costs in the pricing outcomes is necessary. The NYISO is targeting an April MIWG meeting to present analysis and discuss potential improvements. To see Mr. Avallone's presentation, please go to:

To see Mr. Avallone's presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/agenda%207%20Hybrid%20GT%20Pricing%20Improvements.pdf

Fuel Constrained Bidding

Cristy Sanada of the NYISO presented an overview of two designs being discussed under the Fuel Constrained Bidding initiative. The two designs are referred to as:

- *Total Energy Curve (TEC, BIC Approved)*
- *Fuel Cost and Efficiency Curve*

Ms. Sanada described sub-functionalities called Limited Energy Bidding and the Level Schedule Request.

The BIC-approved Total Energy Curve Design would allow the MP to submit for the electric day or subset of hours in the electric day hourly three-part bids for a TEC resource or group (portfolio) and a cost curve reflecting total energy capability in the timeframe (MWh) and cost to produce those MWhs (\$/MWh) for the TEC resource or group. An example was provided to illustrate the bid structure for the TEC. A timetable was provided to show the steps required for the project to achieve a Fall/Winter 2019 deployment.

Ms. Sanada also described the Fuel Cost and Efficiency Curve (FCEC) design. At the November 2015 BIC meeting, the NYISO committed to research this design and report back on its findings. This design would break down cost components of hourly offers that vary with resource heat rate and fuel burn into separate offers and the optimization would select the least cost solution by evaluating the interaction of costs and resource efficiencies at different operating points for a single resource or group of resources. Examples were provided to describe the details of the FCEC functionality and simulation outcomes were presented to compare against the TEC design in different scenarios. The conclusions are below:

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- *Both TEC and Fuel Cost and Efficiency Curve designs eliminate the risk of guessing where and when to impose cost adders in hourly bids*
 - *Total Energy Curve (output constraint) accurately optimizes the limited energy available to the generator(s)*
 - *Fuel Cost & Efficiency Curve (input constraint) further optimizes the limited fuel available to the generator(s).*
- *If the generator/portfolio efficiency is uniform, the two designs are identical*
- *The Fuel Cost & Efficiency Curve eliminates risk of reflecting the wrong operating efficiency in TEC offers*
- *Both risks described above are faced today when resources are bidding to reflect fuel or energy limitations*
- *Both designs provide appreciable benefits from the current bid construct*

The timeline with development steps was provided for the FCEC design option. The NYISO foresees that implementation of this design would extend beyond 2019 into 2020 due to more extensive bid to bill impacts than the TEC design with an estimated implementation late 2020. With either of the design concepts above, the Limited Energy Bidding functionality could be used which provides the optimization with flexibility, with potential to increase market efficiency.

A feature that is currently part of the high level design approved at the BIC is the Level Schedule Request feature which would offer bidding functionality to allow resources to more efficiently reflect 1/24th Operational Flow Order (OFO) constraints in day-ahead offers. This was a recommendation of the State of the Market reports for 2013 and 2014. This would allow the optimization to schedule the resource(s) flexibility, but enforce a level schedule if scheduled, giving resources an alternative to self-scheduling to achieve a level schedule.

The NYISO plans to conduct an informative WebEx for resource bidders and conduct a follow-up survey to determine design benefits. The feedback received will help inform the NYISO of which design components should be prioritized and will be incorporated into an April MIWG presentation. An appendix was provided with additional data for clarity. To see Ms. Sanada's complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/agenda%208%20Fuel%20Constrained%20Bidding%20%20MIWG%2032316.pdf

NAESB PKI Digital Certificate Updates

Matt Darcangelo presented an update on the digital certificate process. FERC Order 676-H requires a digital certificate that is unique to individuals who are NYISO Market Information System (MIS) direct users and organizations for enhanced security. The original deadline for compliance was February 2015 and NYISO has been granted an extension until May 15, 2017. The Digital Certificate will be issued by a 3rd Party NAESB Authorized Certificate Authority



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(ACA) and will be required to conform to the North American Energy Standards Board, Public Key Infrastructure (NAESB-PKI). A certificate can be obtained by certified 3rd Party provider of the MPs choosing. The NYISO has held several Webex training sessions on the new digital certificate protocol. The transition period will begin on June 15, 2016 with an 11 month transition period. All NAESB-PKI compatible digital certificates are compatible across control areas. Mr. Darcangelo noted the key actions and requirements necessary to be prepared for the new digital certificate protocol:

- *Ensure your Market Participant Org (or its Parent) is Registered on NAESB Electric Industry Registry (EIR)*
- *Provide NYISO Stakeholder Services your EIR Entity Code by June 3, 2016, if possible*
- *Purchase a NAESB PKI Certificate*
- *Provide a valid ten digit phone number for users in MIS*
- *Link the Certificates to your MIS User ID via password and PIN*

A NYISO application list was provided to clarify which NYISO systems require the NAESB-PKI certificate for access. NYISO Stakeholder Services can provide assistance if market participants experience issues with accessibility @ 518-356-6060 or stakeholder_services@nyiso.com. To see Mr. Darcangelo's presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2016-03-23/agenda%209%20NAESB%20PKI%20Digital%20Certs%20Update%203.pdf

Comprehensive Scarcity Pricing Compliance Filing

Ethan Avallone of the NYISO presented an update on the compliance filing related to Comprehensive Scarcity Pricing. On March 1, 2016 the FERC approved the proposed tariff revisions while directing the NYISO to make a compliance filing providing clarification on the circumstances that scarcity pricing is applicable compared to circumstances where shortage pricing is applicable. Mr. Avallone explained the revisions to the tariff clarifying the different pricing protocols. The compliance filing is due on March 31, 2016. To see the tariff revisions, please go to:

http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic_miwg

Thursday, March 24, 2016

Installed Capacity Working Group

ICAP and EDRP Manual Updates for Demand Response Programs

Akshay Kasera of the NYISO presented updates proposed for the Installed Capacity (ICAP) and the Emergency Demand Response Program (EDRP) manuals. Mr. Kasera explained that the NYISO is not proposing any changes to existing programs but rather updating the manuals to provide clarifications and ministerial updates to the existing language. Several areas of the manuals were proposed to be updated including:

- *Revisions to Enrollment Procedures and Data*



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- *Clarifications to SCR Performance Data Reporting*
- *Meter Data Corrections*
- *Revisions to Reflect Scarcity Pricing Tariff Language and CBL Calculation*
- *Additional EDRP Manual Clarifications*
- *Ministerial Changes & Clean-up*

The NYISO will continue to accept comments and return to an April ICAPWG for further discussion with stakeholders prior to seeking approval for the changes at the May BIC meeting. A stakeholder requested that the NYISO provide an update on whether or not there are any market enhancement projects scheduled for Demand Response in 2016. The NYISO committed to providing an update at the next ICAPWG presentation. To see the specific changes, please go to:

http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic_icapwg

Alternative Methods for Calculating LCRs Update

Bob Logan of the NYISO presented an update on the effort to provide an alternative method for calculating the NYISO Locational Capacity Requirements (LCRs) for the Installed Capacity (ICAP) market. NYISO had been considering possible approaches that can be implemented in the near term to ameliorate concerns raised in discussions with stakeholders regarding the methodology the NYISO uses to establish the LCRs. The NYISO is currently investigating the various approaches based on those recommended by Potomac Economics in the 2014 State of the Market Report (See 2014 SOM Page 63) to develop a comprehensive approach to determining LCRs for any Locality. The NYISO will be working with its stakeholders to develop a fair and reasonable approach for determining LCRs, which would include determining the associated cost allocation methodology. Stakeholders commented that they would like to be included as early as feasible in the project for transparency and concept formation. The NYISO has engaged GE to assist in developing a mechanism to determine LCRs by developing a tool that will iterate between minimizing cost of capacity supply using an LP optimization and achieving 0.1 LOLE using the traditional MARS tool, which is anticipated for June/July 2016. The initial NYISO methodology proposal was introduced as a four step process:

1. *Capacity would be removed from Load Zones west of Total East with excess capacity until the Capability Year's IRM is met.*
2. *Capacity would be removed from each Locality until the current Capability Year's LCRs, are met.*
3. *The MW of each Locality's ICAP Demand Curve proxy unit would be added to each Locality. In the current configuration this would mean adding an approximately 220 MW simple cycle combustion turbine to Zones J and K the unit added to J would satisfy the addition of capacity to both New York City and the G-J Locality and removing 220 MW from west of Total East. This represents the Demand Curve level of excess, and will provide the reference LOLE for the cost minimization.*

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- An automated cost minimization would be performed, iteratively shifting capacity from each Locality and in to the zones with excess in ROS west of Total East until reaching an LOLE less than or equal to the reference LOLE at the least overall cost of capacity*

A formulaic representation was provided to illustrate the above process. Mr. Logan noted several stakeholder comments and requested that stakeholders review the proposed process and continue to submit suggestions for refinement. To see Mr. Logan's complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-03-24/Alternative%20Methods%20for%20Determining%20LCRs%2003242016%20final.pdf

NYISO Proposed Winter-to-Summer Ratio Calculation Methodology – Update

Randy Wyatt of the NYISO presented revised methodology for the proposal to calculate the winter-to-summer ratio (WSR) values for use in calculating the ICAP Demand Curve reference point prices. The NYISO considered stakeholder feedback from the March 22, 2016 ICAPWG meeting to refine the proposed calculation methodology. Mr. Wyatt led a review of the original NYISO proposal and introduced the revised proposal, highlighting the differences. Some stakeholders opined that the original approach would allow resources entering or exiting the market at times other than the start of a 12 month period (*i.e.*, September through the following August to unnecessarily impact reference point price values. The revised approach accounts for such changes as they would be expected to persist going forward and therefore provides a more accurate representation of changes in actual market conditions over time without introducing any undue volatility. Examples were provided to illustrate the proposed revisions to the methodology. Stakeholder feedback is requested prior to the March 30, 2016 MC meeting. To see Mr. Wyatt's presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2016-03-24/WSR%2003242016%20ICAPWG%20Final%2003232016.pdf

FERC Filings

March 23, 2016

NYISO filing of errata to correct report related to NYISO's March 4, 2016 filing on price formation in energy and ancillary service markets operated by RTOs and ISOs.

March 22, 2016

NYISO compliance filing regarding the Order No. 1000 regional transmission planning requirements and the Commission's directives in its December 23, 2015 Order.

March 21, 2016

NYISO compliance filing of its third Broader Regional Markets Informational Report in Docket No. ER08-1281-000



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FERC Orders

March 23, 2016

FERC notice granted the request for a partial extension of the compliance deadline up to and including September 13, 2016, as requested

March 22, 2016

FERC letter order accepted, subject to a compliance filing to announce the actual effective date, revisions to provide the basis for the methodology the NYISO will use to project likely Energy and Ancillary Services revenues for controllable transmission lines in its buyer-side mitigation determinations

Link to FERC Filings and Orders:

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