NYISO Consumer Interest Liaison Weekly Summary

August 21 – August 25, 2017

Notices:

- *Please note that the next* ***TPAS meeting*** *has been* ***rescheduled from September 1, 2017 to September 7, 2017*** *and will begin after the SOAS meeting.*
- *The* ***Ancillary Services Manual*** *(clean and redline),* ***Day-Ahead Schedule Manual*** *(clean and redline), and* ***Transmission and Dispatch Operations Manual*** *(clean and redline), have been posted to the NYISO Manuals & Guides webpage under Manuals, Under Review. All proposed changes were presented at the August 25, 2017 MIWG.*

Meeting Summaries:

Tuesday, August 22, 2017

Installed Capacity Working Group

CRIS for External-ROS Transmission Investments

Stephanie King of the NYISO proposed market rules to accommodate External to Rest of State (ROS) Deliverability Rights (EDRs). This proposal began in the Interconnection Issues Task Force when HQUS proposed that NYISO develop a method to award Capacity Resource Interconnection Service (CRIS) to entities that create increased transfer capability into ROS via transmission upgrades over external interfaces. This project would address a timing issue that would delay the assignment of the rights and give a developer the opportunity to offer capacity from an External Control Area by obtaining CRIS at the time the project itself is evaluated in the interconnection process. In response to questions regarding the application of EDR rules to Localities, Ms. King noted that the application of EDRs to Localities would encompass considerations that are not in the scope of the current effort. Ms. King highlighted the proposed new product features for EDRs, and noted that stakeholder feedback and comments are welcome. Comments can be sent to deckles@nyiso.com. The NYISO will return to a future ICAPWG/TPAS meeting with additional details and an updated proposal. To see Ms. King's complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/agenda%202%20M163_ICAPWG_8_22.pdf

Demand Curve Reset Annual Update for 2018 ICAP Demand

Zachary T. Smith of the NYISO provided an update on the Demand Curve Reset (DCR) Annual Update Process. The three components of the ICAP Demand Curve input parameters to be updated are:

- *Winter-to-summer ratio (WSR)*
- *Gross cost of new entry (CONE) for peaking plants using composite escalation factor*
- *Net Energy and Ancillary Services (EAS) revenue offset*

The 2018 ICAP Demand Curves will use data from September 1, 2014 – August 31, 2017 to update the WSR and net EAS revenue offset. Mr. Smith provided tables depicting updated WSR values for NYCA and the three Localities; Zones G-J, New York City and Long Island. The net EAS revenue values will become available in September/October. There will be additional ICAPWG presentations on this subject throughout the process prior to presenting final results for the annual update. Feedback can be sent to ztsmith@nyiso.com. To see the complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/agenda%203%20DCR%20AU%202017%2008222017.pdf

Integrating Public Policy (IPP): The ICAP Market – Final Findings and Sensitivities

The objective of the IPP study is to identify potential market design or rule changes necessary with sufficient renewable resource additions to meet the CES goal of 50% renewable by 2030. Meghan Castellano and Dr. Nathaniel Gilbraith of the NYISO presented the final results of the effort. Following a review of the assumptions, Ms. Castellano provided the results of the study:

- *ICAP reference points increased*
- *ICAP minimum requirements increased for the NYCA while remaining nearly flat for the Localities*
- *Demand Curves became steeper as a result of higher reference points*

Dr. Gilbraith then led a review of the eight sensitivity cases that were studied:

1. **Increase NYC LCR +5%**
2. **Decrease offshore wind derating factor -10% (increases UCAP)**
3. **"Uncleared" MW necessary to return to base case prices (see next slide)**
4. **Increase IRM, all LCRs +5%**
5. **Decrease onshore wind derating factor from 90% to 78%**
6. **Alternate Net EAS assumption: 33% of demand curve reset value**
7. **Alternate Net EAS assumption: 66% of demand curve reset value**
8. **Increase solar derating factor (decreases UCAP)**

The sensitivities, which are available online for stakeholder review, generally showed that the model results were robust across a range of assumptions. The sensitivity depicting "uncleared" UCAP necessary to return to Base Case levels of UCAP excess and result in "Base case" level prices were highlighted for discussion with stakeholders. The "uncleared" UCAP is the amount of UCAP that is unsold and is considered in market processes, such as the requirement setting processes, but does not clear in any auction or in a certified bilateral. The NYISO is currently evaluating stakeholder feedback and the results of the study. The NYISO will return to a future stakeholder meeting to discuss market design changes and/or enhancements that would be explored in Phase Three of the IPP project. The NYISO will consider additional stakeholder input received during the meeting and at IPP_feedback@nyiso.com, and prepare and present a draft whitepaper to stakeholders. To see the complete NYISO presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/agenda%204%20IPP-ICAP-final-results.pdf

An Alternative Method for Calculating Locality Exchange Factors

Michael Cadwalader of Atlantic Economics proposed an alternative method for calculating the Locality Exchange Factor (LEF) for capacity sold from a Locality to an External Region. The proposal from Mr. Cadwalader is based on the assumption that an importing control area will not always experience a loss of load event at the same time New York experiences such an event. Under this alternative approach, the NYISO would differentiate between two types of loss of load events for New York:

- *New York and the importing control area simultaneously experience a loss of load event.*
- *New York experiences a loss of load event, but the importing control area does not experience a loss of load event.*

The NYISO would then calculate an effective LEF, which would be the weighted average of the LEFs for each type of load event. The resulting LEF from the NYISO deterministic approach of 47.8% would be applied for the percentage of loss of load events where the importing control area also experiences a loss of load event. Mr. Cadwalader explained that during the remaining instances where NYISO experiences a loss of load event but the importing control area does not, the Capacity would be available to the NYISO for its security. This calculation results in an LEF of 61.4%. In response to a stakeholder comment that the importing control area may still require a portion of the capacity in question, Mr. Cadwalader explained that is a detail that could be worked through within the framework of the proposal. To see Mr. Cadwalader's complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/agenda%205%20An%20Alternative%20Approach%20for%20Calculating%20Locality%20Exchange%20Factors.pdf

Probabilistic Locality Exchange Factor Update

Joshua Boles of the NYISO provided an update on the potential refinements to the Locality Exchange Factor (LEF) calculation and modeling assumptions using a probabilistic approach. The NYISO contracted with General Electric Consulting (GE) to develop a model that could be used to determine an LEF in a probabilistic manner that was:

- *Stable and predictable*
- *Could be repeated for sales from any Locality to any neighboring Control Area*

GE concluded that calculating a probabilistic LEF adds complexity and unpredictability while not providing results that differ significantly from the NYISO deterministic approach results. The NYISO solicited stakeholder feedback and received a proposal from the Transmission Owners (TO) that proposes an alternative approach for consideration. The alternative approach for calculating LEFs would retain the deterministic approach but incorporate a probabilistic adjustment to account for the percentage of time NY and its neighboring Control Area do not have loss of load events at the same time (detailed above). The NYISO is considering whether the TO proposal or an alternate formula based model may be developed and benchmarked to provide a high degree of confidence that the 1 in 10 LOLE (Loss of Load Expectation) criterion is maintained. To fully investigate this issue, the NYISO will engage GE to explore these approaches. Stakeholder comments are encouraged and can be sent to deckles@nyiso.com. To see Mr. Boles' complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/ICAPWG_LEFUpdate_8_22.pdf

Alternative Methods for Determining LCRs

Zachary Stines of the NYISO provided an update on the effort to investigate alternative methods for determining Location Capacity Requirements (LCRs). Mr. Stines led a review of the results for aligning cost and requirements; Alter Objective Function, Alter Cost Curve and Alter the Optimal Requirements. Based upon the analysis conducted, the NYISO proposes that the "Alter Objective Function" methodology be used. This methodology optimizes the LCRs to minimize the cost of capacity assuming the quantity and price at the Level of Excess (LOE) condition. This proposed refinement will be used in the final methodology and final base case.
Mr. Stines also provided an update to the Transmission Security methodology to be applied to the analysis. The NYISO conducted N-1-1 analysis to determine the transmission security import limits into each Locality and used the limits to determine the minimum Unforced Capacity (UCAP) required for each Locality. This minimum UCAP requirement was then converted into ICAP using the 5-year zonal EFORd utilized in the GE MARS model. Mr. Stines provided the calculation used to determine the preliminary Transmission Security LCR Floors for each Locality, which are:

- *Zone G-J LCR 89.12%*
- *Zone J LCR 80.16%*
- *Zone K LCR 102.99%*

These preliminary Transmission Security LCR floors will be incorporated into the optimization and presented at a future ICAPWG meeting. The next step in the process will be to perform simulations on additional market scenarios, incorporating multiple system changes, to demonstrate the performance of the final methodology proposal. The NYISO anticipates seeking market design approval of this proposal prior to the end of 2017 as a milestone confirming stakeholder support for the methodology to assist the NYISO in allocating resources efficiently. To see Mr. Stines' complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2017-08-22/agenda%207%20AlternativeMethodsforLCRs_Final.pdf

Thursday, August 24, 2017

Q2 State of the Market Report

Pallas LeeVanSchaick of Potomac Economics (MMU) presented a summary of market activity for the second quarter of 2017. Mr. LeeVanSchaick noted that the energy markets performed competitively and variations in wholesale prices were driven primarily by changes in fuel prices, demand, and supply availability. To see the complete Q2 State of the Market Report, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-08-24/NYISO%20Quarterly%20Report_2017-Q2__final_8-21-2017.pdf

Friday, August 25, 2017

Market Issues Working Group

Integrating Public Policy Phase 2: Initial Energy Market Simulation Results and Process Update
Michael Swider of the NYISO provided an update of the initial Energy Market simulation results and process for the Integrating Public Policy (IPP) effort. The IPP project is a study in which the NYISO has added the renewable resources anticipated to meet the New York State Clean Energy Standard goals to the current market construct for the purpose of stimulating conversation with stakeholders on potential requirements for new market rules. Mr. Swider explained an error with the modeling of imports discovered in the prior simulation and the correction made to the model. It was noted that the error resulted in negligible pricing differences. A stakeholder suggested that the NYISO incorporate a wind forecast error into the RTC to RTD process to provide consistency with the production case. The NYISO noted that it will consider the suggestion. It was also suggested for the next update to include

a narrative of the events occurring on the system during the simulation timeline. In response to another stakeholder comment, Mr. Swider noted that the NYISO is considering a method to include a commitment summary by generation type (fuel) and the number of start-ups and shut-downs throughout the day by generation type. When asked to give further consideration to potential retirements within the generation fleet, the NYISO reminded stakeholders that this study is not a planning study and therefore it is out of the study scope to attempt to forecast market behavior.
The NYISO will re-run and validate all four preliminary Day-Ahead Market (DAM) and Real-Time Market (RTM) cases with updated assumptions including:

- *Re-scale lost-opportunity cost and "as bid" virtuals based on Preliminary pricing results*
- *Simulate off-shore wind forecast error*
- *Reduce simulation virtual bid for incremental renewable resources from negative $10 to negative $47, which equals the sum of the 2016 Production Tax Credit plus the average NYSERDA Renewable Energy Credit*

The NYISO will return to the MIWG with full analysis of DAM and RTM simulations, including impacts on unit commitment and dispatch, prices for energy and reserves and regulation, performance, etc. A white paper will be released in the fall incorporating the results of the Energy Market and Capacity Market study results for discussion with stakeholders. To see Mr. Swider's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-08-25/MIWG%208-25-17_Simulation%20Progress%20and%20Process%20Updates_final.pdf

DER Roadmap Stakeholder Presentation – Aggregation of Capacity Resources
Greg Geller of EnerNOC presented a proposal for aggregating Distributed Energy Resources (DERs) at the zonal level for the Installed Capacity Market. At the current stage of the NYISO effort to develop rules for DER participation in the wholesale markets, DER will be aggregated at the transmission node level within a zone. This aggregation methodology enables the NYISO to avoid aggravating constraints within a zone (or subzone) through a lack of dispatch flexibility. Mr. Geller proposed that allowing DER to aggregate at the zonal level eliminates complexity and would decrease the cost risk assumed by individual resources within an aggregation and relieves a perceived barrier to resource participation in the DER program. Mr. Geller also added that another benefit of the EnerNOC proposal is the ability to provide a diverse resource portfolio to avoid performance being affected by any single customer. An example was provided to illustrate aggregation performance. Some stakeholders questioned the ability of the proposed aggregation resources to properly respond to NYISO sub-zonal dispatch signals.
To see the complete EnerNOC presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-08-25/AEMA%20August%2025%20MIWG%20Presentation.pdf

Transmission Constraint Pricing Manual Changes
Jennifer Boyle of the NYISO presented revisions required to update three manuals in accordance with the recently implemented (June 20, 2017) Transmission Constraint Pricing project. The three manuals to be revised include:

- *The Ancillary Services Manual*
- *The Day-Ahead Scheduling Manual*
- *The Transmission and Dispatching Operations Manual*

Ms. Boyle presented the specific changes to each manual. There will be an additional presentation to the SOAS prior to BIC and OC submission for approval. To see the complete presentation, including

redline documentation, please go to:
http://www.nyiso.com/public/committees/documents.jsp?com=bic_miwg&directory=2017-08-25

Inverter-Based Technology Providing Ancillary Services – Tariff and Manual Revisions

Daniel Noriega of the NYISO presented proposed tariff and Ancillary Services Manual (Manual) revisions to reflect the clarification from the Northeast Power Coordinating Council (NPCC) that inverter technology-based energy storage resources can provide synchronous reserves. The proposed changes to the Manual also contain revisions related to the Transmission Constraint Pricing Project. Mr. Noriega provided the updates while noting stakeholder feedback. The NYISO intends to bring the proposed changes to the Business Issues Committee for approval in September/October 2017. To see the specific revisions, please go to:
http://www.nyiso.com/public/committees/documents.jsp?com=bic_miwg

Securing 100+kV Transmission Facilities in the Market Model

Ethan Avallone of the NYISO presented an update on the proposal to secure select 100+kV transmission facilities within the market model. Potomac Economics (MMU) has recommended in each of the 2014 through 2016 State of the Market Reports that 100+kV transmission facilities be secured in the NYISO's market model. Mr. Avallone reiterated the benefits associated with this project, as well as the challenges that the NYISO will have to resolve to move forward with this market design. Select 100+kV facilities may be able to be secured within the market model before the EMS/BMS project implementation in 2019, but it is anticipated that market design enhancements will be necessary to secure the majority of the facilities identified by the procedure; these enhancements will require extensive revisions to the market software. The method NYISO intends to use to evaluate 100+kV transmission facilities for inclusion in the market model will be consistent with legacy constraint modeling efforts.

The NYISO is currently preparing more detailed documentation of the procedures to add and/or remove lower kV facilities, which will identify the facilities to be added both prior to and after the deployment of the EMS/BMS project. Mr. Avallone also identified Transmission Congestion Contract (TCC) market impacts that would result from the proposal. A stakeholder suggested that the NYISO should provide adequate notice prior to implementation to allow TCC holders to prepare for the system changes. To see the complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-08-25/agenda%206%20100+kV%20-%20August%20MIWG.pdf

Energy Storage Integration and Optimization -- Settlements

Daniel Noriega presented an update on the proposal to integrate Energy Storage Resources (ESRs) into the NYISO wholesale markets. Mr. Noriega led a review of stakeholder feedback following the July 19, 2017 ESR presentation while encouraging continued feedback throughout the process. Following a review of the proposed scheduling logic, Mr. Noriega introduced some aspects of the financial settlement process for ESRs. Mr. Noriega explained the proposed ESR Penalty structure and utilized examples to illustrate how the model will assess Over- and Under- Generating/Withdrawing units. Concepts for Day Ahead Margin Assurance Payments (DAMAP) and Bid Production Cost Guarantees (BPCG) were also explained and discussed with stakeholders.

While continuing to evaluate the operational feasibility of the proposed ESR scheduling logic, the NYISO will discuss additional ESR modeling and settlements considerations with stakeholders during Q3 2017 pertaining to Day Ahead scheduling logic and Ancillary Services. To see Mr. Noriega's complete presentation, please go to:

http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-08-25/agenda%207%20Energy%20Storage%20I%20O.pdf

MMA Attachment H and Market Services Tariff General Rules Update

Nick Shelton of the NYISO presented proposed changes to the real-time fuel cost adjustment ("FCA") bias review, real-time impact test and penalty calculation for misuse of the FCA functionality. Mr. Shelton led a discussion with stakeholders on the changes to the tariff language in Attachment H of the Market Administration and Control Area Services Tariff. Background was provided on the 7-Day Bias Test prior to Mr. Shelton explaining the specific changes to the process and detailing the tariff language required to effectuate the change. There were also some general rule changes in the tariff for the Min Oil Burn process:

- *Clarify that tax information must be submitted by a Market Participant to receive accurate compensation.*
- *Revisions to Services Tariff Section 23.4.3.3.3 to remove NYSRC numeric rule designation*
- *MMA uses the most up-to-date data in its possession to calculate the payments for the Min Oil Burn program*

The NYISO anticipates BIC and MC votes on the tariff revisions in September 2017 prior to submission for Board of Directors approval in October 2017. To see the complete presentation please go to:
http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic_miwg

FERC Filing

August 24, 2017

NYISO filing of an answer to the Green Power Reconsideration Request in response to the Commission's July 10, 2017 denial of its out-of-time motion to intervene and request for rehearing of the Commission's acceptance of a Notice of Cancellation of the Small Generator Interconnection Agreement among the NYISO, Niagara Mohawk Power Corporation, and Green Power.

August 21, 2017

New York Transco Offer of Settlement to resolve issues pending with respect to Transco's AC Transmission Projects

FERC Orders

August 24, 2017

Letter order accepting LGIA No. 2345 between NMPC and Selkirk, effective June 26, 2017 as requested

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