NYISO Consumer Interest Liaison Weekly Summary

October 30 – November 3, 2017

Notices:

- *Strong winds across New York State on Monday morning pushed **electricity generated by wind power to a new record**, according to the New York Independent System Operator. The **record output of 1,622 megawatts (MW)** - set during the 5:00 a.m. hour on Monday, October 30 - eclipsed the previous record of 1,574 MW that was set on March 2, 2017.*
  *When overall wind production peaked at 1,622 MW on Monday morning, it provided 12% of all energy generation in New York. The **record output represents 89% of the 1,827 MW** of installed wind capacity in New York State.*

Meeting Summaries:

Monday, October 30, 2017

Joint Market Issues/Installed Capacity Working Group

Alternative Methods for Determining LCRs

Zachary Stines of the NYISO presented the final analysis of Transmission Security Limit (TSL) values for the Alternative Methods for Determining Locational Capacity Requirements (LCR) proposal. Mr. Stines led a review of the assumptions used in the analysis with stakeholders and provided a timeline to illustrate how the steps of the LCR determination would coordinate with the Installed Reserve Margin (IRM) process. The final 2017 TSL LCR floor values are as follows:

- **G-J Locality 89.30%**
- **NYC Locality 80.63%**
- **LI Locality 104.01%**

In response to a stakeholder question, Mr. Stines responded that the NYISO would not re-run all scenarios with the final values, as all previous results have demonstrated the stability of the methodology. The NYISO will also give consideration to the concept of releasing a preliminary set of TSL LCR floor values earlier in the annual process, noting the values would be labeled as not final. Additional analysis was provided indicating optimized LCR values with several "layered" scenarios. The "layered" scenarios combine changes in generation in more than one Locality to measure resulting LCR values. Results for changes in transmission and changes to Demand Curve Reference Prices were also provided.

To see the complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-10-30/ICAPWG_10-30-17_AlternativeMethodsforLCRs_TSLSensitivity_Final2.pdf

Alternative Methods for Determining LCRs: Final Market Design

Zachary Stines of the NYISO presented the final market design proposal for Alternative Methods for Determining Locational Capacity Requirements (LCRs). A summary of all presentations to the ICAPWG throughout the process was provided for stakeholder reference. Mr. Stines led a review of the final proposal by summarizing each step of the process:

- *Design Objective*
- *Methodology*
- *Results*
- *Transition Method*
- *Cost Allocation*
- *Timeline*

Mr. Stines provided analysis illustrating historic LCR values for the most recent five year period. Since the optimization methodology results in LCRs within the historic range, an evaluation of a potential revision to the cost allocation that results appears to be unnecessary. If conditions should occur that warrant reviewing and revising the cost allocation methodology, the NYISO and stakeholders could take it into consideration. In addition, stakeholders may prioritize it as a future project in the BPWG process. A timeline was provided indicating that incorporation of the optimized methodology would cause no changes in the timeline for establishing LCRs. The NYISO will present this complete market design at the November 15th, 2017 BIC meeting to propose the optimized methodology for determining LCRs as outlined in this presentation be pursued through 2018. This milestone vote will confirm stakeholder support for the market design and methodology as it has developed in the 2017 project and allow the NYISO to efficiently allocate resources. In response to a stakeholder comment Mr. Stines verified that the NYISO has made monthly presentations to the New York State Reliability Council Installed Capacity Subcommittee to assure transparency of the process. To see the complete presentation please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-10-30/ICAPWG_10-30-17_AlternativeMethodsforLCRs_FinalMarketDesign_Final.pdf

Aggregations and Dual Participation

Michael Lavillotti of the NYISO provided updates on the Distributed Energy Resource (DER) aggregations and dual participation proposals. Mr. Lavillotti explained that the NYISO had received stakeholder input on three areas of the DER definition:

- *Limit to 20 MW "nameplate capability"*
- *Inclusion of "DER Aggregations" in the definition*
- *The purpose of including the different resource types*

The rationales for the above areas of concern were detailed and discussed in depth with stakeholders with several comments noted by the NYISO for future consideration.

Mr. Lavillotti next clarified the proposed categories of Non-Dispatchable DR and Dispatchable DER while explaining Non-DER are resources that have a separate set of rules outside of the DER program. It was noted that end-use customers participating in the NYPSC's VDER (Value of Distributed Energy Resources) and Net-Metering programs will likely not be eligible to sell Energy or Capacity in NYISO Wholesale markets.

The NYISO is currently working with the Joint Utilities to determine how to coordinate Dual Participation. NYISO is evaluating requiring aggregators to comply with all NYISO and Utility scheduling obligations instead of the Utility. This represents a change in the NYISO position, which was presented in an illustration for discussion with stakeholders. Rules for Non-DER Dual Participation will be established once the NYISO has worked through DER Dual Participation.
The DER effort will continue forward with the NYISO producing a Market Design Concept paper in late 2017.
Comments are encouraged and can be sent to der_feedback@nyiso.com. To see Mr. Lavillotti's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-10-30/Distributed%20Energy%20Resource%20Aggregations%20and%20Dual%20Participation%20MIWG%20103017%20Final.pdf

NYISO Meter Data Study: Initial Findings
Dr. Paul Sotkiewicz of E-Cubed Policy Associates, LLC (E-Cubed) presented initial findings of the NYISO meter data study (study). Dr. Sotkiewicz began the presentation with an overview of the metering standards and rules established in the New York Control Area and compared these standards to standards applied by other ISOs/RTOs.
Dr. Sotkiewicz led a review of the current Energy Baseline methodology used by the NYISO and again compared the methodology to the practices of other ISOs/RTOs. This was followed by a review of the Capacity Baseline methodology in relation to NYISO peers.
The final area of discussion centered on using sampling for non-interval metered sites. Statistical sampling allows DR providers to install interval meters on only a small subset of customers with like profiles and characteristics to derive a CBL and M&V for performance without installing interval meters on all DR customers.
Options were suggested for all above areas and discussed with stakeholders for input and future discussions.
To see the complete E-Cubed presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-10-30/Meter%20Data%20Study%20Initial%20Findings%20-%20E-Cubed%20Policy%20Associates.pdf

Thursday, November 2, 2017
Budget and Priorities Working Group
2017 Budget vs. Actual Status
Tracy Ryan of the NYISO presented the 2017 September year-to-date budget vs. actual status. Rate Schedule 1 recoveries are $1.5M behind budgeted revenues through September. Year-to-date budgeted costs vs. actual costs through September reflect a $9.1M budget under-run. To see Ms. Ryan's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/mc_bpwg/meeting_materials/2017-04-26/MARCH_2017_Budget_vs_Actual%20Results.pdf

2017 Project Schedule Milestone Update
Robb Pike of the NYISO provided an update on the project schedule milestones for 2017 projects. Mr. Pike focused on projects with a change in status since the last BPWG presentation. Projects with a change in status include:

- *Demand Curve Reset Annual Updates* — *Complete*
- *Modifications to GADS Reporting Software for IIFO* — *Complete*
- *Performance Assurance* — *At Risk/Delayed*
- *CRIS for External – ROS Transmission Investments* — *Complete*
- *Distributed Energy Resource Program Design* — *On Schedule*
- *Granular Pricing & Market Price Delivery* — *Complete*
- *RTC/RTD Forward Horizon Coordination Improvements* — *At Risk/Delayed*
- *Model 100+kV Transmission Constraints* — *Complete*
- *Telephony System Upgrade* — *Complete*
- *Backup Enhancements* — *Complete*
- *Settlements Sub-Accounts* — *Complete*
- *Interconnection Process Review* — *Complete*

To see Mr. Pike's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/mc_bpwg/meeting_materials/2017-11-02/4_2018%20Draft%20Annual%20Incentive%20Goals.pdf

2018 DRAFT Annual Incentive Goals

Emilie Nelson of the NYISO presented a follow-up on the 2018 Draft Annual Incentive Goals. In response to a prior stakeholder question, Ms. Nelson noted that if the new quality goals were applied to past years (2015, 2016) the NYISO would have attained the threshold values for the quality goal. Ms. Nelson recorded additional feedback from stakeholders on the subject.

Additional comments from previous presentations were addressed with explanations as to why, after consideration of stakeholder comments, the NYISO finds the selected goals appropriate. To see Ms. Nelson's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/mc_bpwg/meeting_materials/2017-11-02/4_2018%20Draft%20Annual%20Incentive%20Goals.pdf

Thursday, November 2, 2017

Market Issues Working Group

Consumer Impact Analysis: Securing 100+kV Transmission Facilities in the Market Model

Tariq Niazi of the NYISO presented the Consumer Impact Analysis for securing 100+kV transmission facilities in the market model. The NYISO has been working with stakeholders on a market design to secure select 100+kV transmission facilities within the market model following a 2015 State of the Market report recommendation. Currently, the majority of the 115kV system is not secured in the market model. Securing the 100+kV transmission facilities in the commitment and dispatch software will both improve overall market efficiency as well as provide better targeted investment signals. Mr. Niazi led a review of the methodology used in the analysis, which was presented to and discussed with stakeholders at a previous MIWG meeting. The analysis includes:

- *Estimate of consumer cost impact based on DA simulation results*
- *Production cost impact estimate based on the results of the DA simulation*
- *A further review of Historical Power Supplier Guarantee Payments*

The initial analysis reflected a consumer cost savings of 0.26% from the baseline study. This analysis was conducted using the current Constraint Reliability Margin (CRM) of 20 MW. The NYISO is considering using a lower CRM value for lower kV facilities. To assess the impact of a lower CRM, the Baseline Study was rerun with a CRM of 5 MW used for lower kV facilities. The study using the 5 MW CRM resulted in consumer cost savings of 0.52% in the Day-Ahead Market (DAM). Although

removing the impact of out of market actions from RT makes it difficult to accurately identify RT impacts, securing the lower kV system in both the DA and RT markets is expected to significantly reduce the need for RT out of market actions.
In response to a stakeholder question, the NYISO responded that research shows the additional software will not significantly affect the daily posting time for the DAM results.
Pallas LeeVanSchaick of Potomac Economics (MMU) opined that the cost savings indicated are likely understated as it is difficult to account for all current out-of-market actions that will be mitigated with this model improvement.
Some stakeholders voiced confusion on the effect of virtual load on the study dispatch and Mr. Niazi committed to returning to the MIWG with a more complete explanation of the issue.
To see the complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-11-02/CIA%20-%20100+kV%20110217.pdf

Energy Storage Integration: Aggregations

Daniel Noriega of the NYISO provided an update on the proposal to integrate Energy Storage Resources (ESRs) into the wholesale energy markets. Mr. Noriega noted prior presentations and provided links to them for stakeholder reference. The NYISO summarized the current market design proposal for aggregations in the NYISO markets including the following:

- *Minimum aggregation output of 100 kW.*
    - *Currently, minimum size of 1 kW for each individual resource*
    - *Maximum 20 MW individual resource size*
    - *No maximum aggregation size*
- *All individual resources in an aggregation (homogeneous or heterogeneous) must be mapped to the same electrically appropriate sub-zonal transmission node.*
- *Aggregations of 1 MW or above can offer energy, ancillary services and capacity.*
- *Aggregations of less than 1 MW can only offer energy and capacity (no ancillary services).*
- *Aggregations will be required to meet the same obligations as individual resources (e.g., metering, telemetry, bidding, etc.)*

Mr. Noriega proceeded to highlight the adjustments that should be made to the ESR participation model for it to be fully consistent with the aggregations concept aforementioned. This includes the following:

- *Revised the minimum size requirements for ESR to 100 kW and 100 KWh.*
- *Energy level management available to resources of at least 1 MM/1MWh of capability.*
- *Similar DA market participation provisions.*

Also, in response to a stakeholder inquiry, Mr. Noriega verified that ESR will be allowed in the NYISO Pilot Program. The NYISO will be releasing a whitepaper on Energy Storage in the NYISO markets in the near future. Additionally, the NYISO will release a Market Design Concept Report summarizing the proposed ESR participation model to be discussed this year in December 2017. To see Mr. Noriega's complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-11-02/Energy%20Storage%20I%20O%20MIWG%2017%2011%2002.pdf

Large Scale Solar Integration

Dave Edelson of the NYISO provided an update on the proposal, including proposed tariff revisions, to expand its market rules associated with in-front-of-the-meter (FTM) Solar resources. NYISO already has many of these Energy Market rules defined for Wind resources, and believes those rules are also

appropriate for FTM Solar resources. The NYISO currently assesses a Wind Forecasting fee on wind resources and is proposing an FTM Solar Forecasting fee on each FTM Solar resource. Under the NYISO proposed tariff revisions, each resource would be assessed a $500 fixed fee per month for each resource (PTID) and a rate of $6.20 per MW (nameplate) per month. The NYISO also brought forward proposed tariff revisions associated with the collection of site-specific meteorological data from each FTM Solar resource. An additional tariff change proposed as part of this effort, but is not directly related to FTM Solar is to eliminate the cap on Wind MW eligible for Compensable Over-generation, as NYISO studies have concluded that the NYISO can reliably integrate higher levels of Wind with our current capabilities.
To see the complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-11-02/Large%20Scale%20Solar%20Integration%2011_2_2017_FINAL.pdf

Proposed Revision to Price Correction Deadlines
Michelle Gerry of the NYISO presented a proposal to revise the price correction deadlines. Currently, per the tariff, the NYISO has two calendar days after the market day for Day-Ahead price corrections and four calendar days after the market day for real-time price corrections. Revising the time requirement to four business days for day-ahead and real-time would:

- *Better facilitates the review of prices following major IT system issues or during times of extremely volatile prices, both of which can result in a large volume of data anomalies to review*
- *Allow for better handling of issues that cross into weekends/holidays, when fewer support staff are available. Current use of calendar days rather than business days effectively reduces the available time to review/correct.*
- *Allow more time for NYISO and ISO-NE to notify/consult with each other on potential issues*
    - *Better align each region's timelines for reviewing real-time prices, particularly over weekends/holidays*

Stakeholders provided suggestions to change the NYISO proposal as this change could possibly affect the weekly invoice process through price corrections. Ms. Gerry noted the suggestions for NYISO consideration.
Ms. Gerry explained that the NYISO would present tariff language and a final proposal at a future MIWG meeting prior to governance action. To see the complete presentation, please go to:
http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-11-02/Proposed%20Revision%20to%20Price%20Correction%20Deadlines_MIWG%2011.02.17_v2.pdf

NRG: NYISO Integrating Public Policy
Kelli Joseph of NRG presented topics for consideration and NYISO/stakeholder discussion in the Integrating Public Policy process. Ms. Joseph led a brief review of the NYISO Integrating Public Policy Phase 2 results and noted market areas that may need to be addressed in the future due to the influx of renewable resources. NRG requests that the NYISO consider the following Energy market changes:

- *Develop a Ramp and/or Flexibility Product*
- *Increased Reserve Procurement*
- *Develop an Essential Reliability Services (ERS) category of product*
    - *Frequency Support, Ramping/Balancing, Voltage Support)*
- *Increase Shortage/Scarcity Pricing*

- *Develop Energy prices that reflect the most expensive resource dispatched*

In addition to the Energy market changes above, NRG recommends the NYISO consider the following revisions to the Installed Capacity market:

- *Develop a Forward Capacity Market (FCM)*
- *Develop a Forward Clean Energy Market (FCEM)*
- *Develop two-tier pricing in the FCM*

The NYISO encourages stakeholder comments as the Integrating Public Policy process moves forward. To see Ms. Joseph's complete presentation, please go to: http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2017-11-02/NYISO%20NRG%20presentation_IPP.pdf

Friday, November 3, 2017

Joint Transmission Planning Advisory Subcommittee/Electric System Planning Working Group

Study Scopes under Consideration for Recommendation for OC Approval

Q#560 Deer River Wind SRIS
Q#571 Heritage Wind SRIS
Q#571 Heritage Wind OIS
Q#641 Oakdale-Lafayette SIS
Q#642 Jennison-Edic SIS
Q#643 Multiple Areas SIS
Q#668 North Bergen Liberty Generating Alternative SRIS

All the above were recommended to the OC for approval.

Study Reports under Consideration for Recommendation for OC Approval

Q#526 North Ridge Wind SRIS

Approved for OC

Transmission Owner Local Transmission Plans

The following Transmission Owners presented their Local Transmission Plans for 2018. NYSEG

- National Grid
- Consolidated Edison
- Orange and Rockland
- PSEG Long Island
- New York Power Authority

To see each specific presentation, please go to: http://www.nyiso.com/public/committees/documents.jsp?com=bic_espwg

FERC Filing

There were no filings to FERC by the NYISO for this week

FERC Orders

November 3, 2017

Order accepting, subject to condition, and suspending formula rate, establishing hearing and settlement judge procedures, and granting incentive rates to NextEra Energy Transmission New York, Inc.

November 2, 2017

FERC order accepting cancellation of an interconnection agreement (SA No. 1488) between Niagara Mohawk and Selkirk Cogen Partners, LP effective December 6, 2017, as requested

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