NYISO Consumer Interest Liaison Weekly Summary

February 24 – February 28, 2020

Notices:

- *We are pleased to announce that the NYISO's Market Training Team will be offering the, in-class,* ***MT-201 New York Market Orientation Course (NYMOC) March 31-April 3, 2020****.*
  - ***March 31, 2020 -- April 3, 2020***
  - ***8:30 AM -- 4:30 PM Tuesday through Thursday***
  - ***8:30 -- 12:00 PM on Friday***

  Complete and submit your ***registration*** *by close of business on Thursday, March 19, 2020.*

- *This is to inform you that the NYISO has posted a* ***notice clarifying the Expedited Deliverability Study Buyer Side Mitigation evaluation treatment.*** *The* ***notice*** *is posted on the Market Mitigation page of the NYISO website at the link below under the "ICAP Market Mitigation" folder, "Buyer Side Mitigation" subfolder, and "Expedited Deliverability Study (March 2020)".* ***Link to Market Mitigation page of the NYISO Website***

- *Please use the link below to access the NYISO's stakeholder summary for the upcoming week.* ***NYISO Stakeholder Summary***

Meeting Summaries:

Tuesday, February 19, 2020

Joint Market Issues/Installed Capacity/Price Responsive Load Working Group

NYISO 2019/2020 ICAP Demand Curve Reset

Paul Hibbard and Charles Wu of The Analysis Group (AG) presented an update on the Demand Curve Reset (DCR) process.

Mr. Hibbard began the discussion by explaining that AG will not recommend changing the shape of the Demand Curve or changing the established Zero Crossing Point (ZCP) for each of the Localities. If changes are desired by stakeholders, it is recommended that a detailed review of the demand curve shape and ZCPs is best addressed as a separate initiative outside the context of the reset process.

Next, Mr. Hibbard presented the conceptual framework for deriving the financial parameters. Several risk factors were discussed with stakeholders, some of which are a result of recent N.Y. State policies and the changing technologies available. Price uncertainty is a factor due to the number of renewable energy procurement requirements, countered by the transition to transportation and building electrification. Property Tax, Payment in Lieu of Taxes (PILOT) payments, depreciation terms and siting issues were also detailed as complex risks for consideration.
Mr. Wu provided a proposed modeling approach for Energy Storage Resource (ESR) Energy and Ancillary Service (E&AS) revenues. Assumptions for the model were detailed and discussed with stakeholders for refinement. Feedback was noted for several assumptions, including:

- *Potential for multiple cycles per day given favorable prices*
- *Optimal charge and discharge hours determined daily by unit/zone*
- *Unit receives a day-ahead (DA) energy position if offers are below DA LBMPs, where offers reflect charging costs plus other relevant costs (e.g., losses)*
- *Allows for unit to earn real-time revenues if real-time prices are higher than day-ahead prices*
    - *Limitations would be applied for hours during the applicable "must-offer" period during which the unit is committed day-ahead‑Assumes perfect foresight of high real-time prices*
- *Unit assumed to be capable of providing 10-minute reserves if not dispatched to produce energy*

Mr. Hibbard concluded the presentation with a review of the next steps in the process, which will consider stakeholder feedback and continue the modeling parameter discussions. To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11009534/AG%20DCR%20ICAPWG%2002252020.pdf/c7b51d86-794e-913d-5bfd-559ddd2dd262

DCR Technology: selection

Kieran McInerney and Matt Lind of Burns/McDonnell (BM) led a review of the technology selection and the initial Gross CONE (Cost of New Entry) inputs for the proxy unit to be used in the 2019/2020 Demand Curve Reset (DCR).
Mr. McInerney presented the technologies that will be used in the proxy unit evaluation including; three simple cycle gas turbines, varying duration lithium-ion battery systems, and 2 combined cycle gas turbines (combined cycle gas turbines are for informational purposes only). Mr. McInerney reviewed the environmental aspects of each unit and compared the resulting emissions to the environmental limits required for operation in each Locality. The possibility of operating limits was discussed with stakeholders for each Locality/Technology.
The scope of the proxy unit costs was detailed with Mr. McInerney highlighting the assumptions to be used in the selection process to develop a hypothetical plant. Dual Fuel capability and Supplemental Catalytic Reduction will be calculated for all locations and will be deducted from the cost where they are not required. Stakeholders provided input from recent cost and permitting efforts to assist BM in estimating valid costs. Mr. McInerney encouraged stakeholders to submit all relevant cost data for reference.
The scope for the development of the Battery Energy Storage System (BESS) was presented for discussion with stakeholders. Several issues not covered in prior DCRs will require research and resolution for this technology, such as:

- *Overbuild requirement*
- *Battery augmentation*
- *Battery degradation*

- *Energy Management System*
- *HVAC Requirements*
- *Cycling*

Preliminary costs for each technology were provided and discussed with stakeholders. A comparison was provided for the performance criteria of each technology.
In response to a stakeholder request, BM will highlight input assumption changes resulting from stakeholder input in the next presentation. To see the complete presentation, please go to: https://www.nyiso.com/documents/20142/11009534/NYISO%20ICAP%20Demand%20Curve%20Reset%20-%20Technology%20Selection%20and%20Preliminary%20Gross%20CONE%20Inputs%20(002).pdf/33e6aa00-1ed1-9870-8acb-2940bce25b87

Wednesday, February 26, 2020

DER Important Dates and Schedule

Michael Ferrari of the NYISO provided updates to the Distributed Energy Resource (DER) implementation schedule. On January 23, 2020, FERC accepted NYISO's proposed Aggregation participation model. In response, NYISO submitted a compliance filing on February 24, 2020 with some minor changes to language along with an effective date for the Aggregation components of the filing.
Mr. Ferrari highlighted several important dates in reference to DERs, including:

- NYISO will begin accepting MSE (Meter Service Entities) applications March 1, 2020
- NYISO will begin accepting MSE application fees May 1, 2020
- Aggregation and DER interconnection procedures will become effective May 1, 2020
- Resources may begin Dual Participation May 1, 2020
- NYISO plans on publishing the initial set of Transmission Nodes in Q4 of 2020
- Expanding Capacity Eligibility will be effective March 1, 2021 and applicable beginning with the 2021-2022 Capability Year

NYISO intends to deploy the DER & Aggregation participation models in Q4 2021.
A timeline illustrated the dates and actions discussed above. All associated documentation will be updated at the appropriate time. To see the complete presentation, please go to: https://www.nyiso.com/documents/20142/11026984/DER%20Important%20Dates%20and%20Schedule.pdf/eb4b3c3e-480c-702b-3d57-95a67ac0f5f7

Tailored Availability Metric

Emily Conway of the NYISO presented the revised proposal for changes to the structure of the EFORd (Effective Forced Outage Rate on Demand) calculation. The NYISO proposes changing the structure of the EFORd to take the average of the previous two like-Capability Period EFORds. Under this construct:

- *A two year look-back would be consistent with the look-back time-frame used today*
- *Outages directly affect the respective Capability Period (e.g., Winter outages are reflected in the Winter EFORd)*
- *Respective peak months account for 50% of the calculation*

At this time the NYISO is not proposing to apply a direct weighting to the peak months of the calculation. When a stakeholder suggested that the NYISO should reconsider a higher weighting of the peak months, the NYISO responded that, due to several complexities, it may consider a future enhancement to incorporate a weighting aspect. Examples were provided to illustrate the calculation.

For wind and solar resources, the NYISO proposed a recurring study every 4 years that would result in hourly capacity value weightings across the PLW (Peak Load Window). Data was provided to reflect the differences in the hourly LOLE (Loss of Load Expectation) percentages of the top four hours. Examples were also provided to illustrate the effect of future wind and solar resource additions. At this time, the NYISO proposes the following weightings across the 8-hour and 6-hour PLW:

- *For a 6-hour PLW, the top 4 hours will receive a 75% weighting*
- *For an 8-hour PLW, the top 4 hours will receive a 70% weighting*

Ms. Conway reviewed the required tariff revisions with stakeholders to document the above changes. At this time, the NYISO is targeting a BIC in the near future for May 1, 2021 implementation. To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11026984/Tailored%20Availability%20Metric.pdf/a79af4e8-95cf-ac76-a40b-c4537fff9130

Offer Price Capping and Mitigation Update

Nick Shelton of the NYISO presented the proposed updates on offer caps and mitigation for the Energy Storage Resource (ESR) participation model. NYISO intends to include these revisions in a single 205 filing to FERC, with other ESR participation model updates.
Mr. Shelton provided examples of the bidding/offering that would lead to commitment performance issues. The proposed solution is intended to maintain monotonically increasing offer curves in SCUC, RTC and RTD when bids/offers are crossing 0 MW. The solution will be part of the bid/offer validation process.
Mr. Shelton also provided examples of the Reference Level calculation, while explaining the process for incorporating the expected round trip efficiency losses. New tariff language is needed to explicitly exempt ESRs from requiring a New Unit Reference Level.
To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11026984/ESR%20Tariff%20Updates.pdf/440e62dd-546d-1f12-c7d1-8a4d0d07653e

CMR – Part A Enhancements

Lorenzo Seirup of the NYISO led a high-level review of proposed tariff revisions for the Part A enhancements. As the tariff redline was posted without adequate time for stakeholder review, stakeholders were offered the choice of postponing of the presentation to a later date. It was determined that a high-level review at this time would contribute to a more thorough discussion at the next ICAPWG/MIWG meeting. In regard to the recent FERC Order concerning mitigation, Mr. Seirup noted that the language provided for today's discussion is consistent with past presentations and may be subject to change following a complete review of the Order.
To see the tariff redline as presented, please go to:
https://www.nyiso.com/icapwg?meetingDate=2020-02-26

Thursday, February 27, 2020

Joint Electrical System Planning Working Group/Transmission P

Overview of the 2020 Planning Studies

Zach Smith of the NYISO provided an overview of the 2020 Planning Studies. Mr. Smith presented the key drivers for the upcoming studies:

- *Climate Leadership and Community Protection Act*
- *Climate Change*

- *Renewable Generation Pockets*
- *DEC "Peaker Rule"*

Mr. Smith explained that the planning studies reflect a common purpose to help understand how the behavior of the New York electric grid may change over the next 20 years and to inform market design and policy decisions. The studies will assist in determining the system and resource attributes that are necessary to reliably and efficiently operate the grid. Mr. Smith also noted that the NYISO studies are intended to help identify transmission bottlenecks that may prevent the delivery of renewable and emission-free energy in the future.

To see Mr. Smith's complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/03-%202020-Planning-Studies.pdf/a1467443-b239-48d4-0a0f-ddf8be67d714

Climate Change Phase II Study Scope

Paul Hibbard and Charles Wu of The Analysis Group (AG) presented the scope, methodology and assumption inputs for Phase II of the Climate Change Study. Phase II of the study is the second phase of a three year study initiated in 2019 to develop a long-term energy, peak, and 8,760 hourly load forecast that reflects the potential impact of climate change on the bulk power system in new York and the NYISO load zones. With the forecast in Phase I completed, Phase II will examine the conditions and the risks associated with the transition of the electric grid in New York. Mr. Hibbard explained that AG is seeking stakeholder feedback on the input assumptions for the study.

Mr. Wu continued the discussion with an overview of the model AG is considering for the year 2040. Three modeling periods will be developed; Winter, Summer and Off-peak, consisting of 30 days per period. The resource starting assumptions will be consistent with the 2019 CARIS Phase 1 "70x30" case, adjusted for potential 2040 conditions. Hourly electric demand during normal conditions will be based on Climate Impact Phase I load forecasts. A model setup diagram was provided to illustrate the modeled zones and the associated data sources. A high level bubble diagram was also provided to identify the transmission modeling and transfer criteria.

Mr. Hibbard described the scenarios that will be used to reflect variations from the base case. Physical disruption examples were provided to illustrate grid stressing occurrences that will be studied, such as:

- *Loss of power plant capacity*
- *Reduced wind/solar output*
- *Extreme heat/cold*
- *Reduced hydro output from drought*
- *Transmission failures*
- *Major storms*

A stakeholder suggested the addition of a prolonged heat/cold wave condition to differentiate from a short-term extreme hot/cold day.

Mr. Hibbard provided an estimated time table for completion of the study, anticipating a September 2020 final report. A stakeholder requested that AG avoid keeping to a schedule if it is at the risk of incomplete analysis.

To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/04-Analysis-Group-Climate-Change-Phase%20II.pdf/697680ee-c359-0e57-3db0-27ba2584145e

2020 RNA Preliminary Schedule Update

Laura Popa of the NYISO updated the preliminary schedule for the 2020 Reliability Needs Assessment (RNA). The 2020 Reliability Planning Process (RPP) starts with the 2020 RNA followed by the Comprehensive Reliability Plan (CRP). The 2020 RNA will be based on the information from the 2020 Gold Book, the 2020 FERC Form 715 filing (power flow cases and auxiliary files), historical data, and market participant data.
The updated 2020 RNA schedule was provided with Ms. Popa explaining that the lock-down of the assumptions for the final (2nd) pass of the RNA would be Monday, July 6, 2020. The conclusion remains a November Board approval and publishing of the final report.
The post RNA preliminary schedule was provided as:

- December 1 and December 11, 2021:
    - ESPWG/TPAS, as needed:
        - Stakeholders' presentations of project updates that may reduce or eliminate the final Reliability Needs
            - Must meet the inclusion rules
- January 2021:
    - NYISO issues solicitation of solutions to remaining Reliability Needs, if any left
- 60 calendar days after solicitation (*e.g.* April, 2021):
    - Start the Comprehensive Reliability Plan (CRP) process, such as:
        - Developers intending to submit solutions must be qualified (see Manual 26, Attachment B)

To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/06-2020RNA-PrelimSchedule.pdf/83cc019e-1f30-3eca-e358-619a1958fb2a

2020 RNA: Base Case Modeling Assumptions Matrix
Michael Welch of the NYISO presented the assumption matrix for the 2020 Reliability Needs Assessment (RNA)**.** Mr. Welch led a review of the assumption matrix and explained where differences may exist compared to the 2018 assumption matrix.
Allison Stewart of the NYISO continued the presentation with the transmission security study assumptions. Ms. Stewart reviewed the assumptions and identified the source of the respective data.
To see the complete assumption matrix, please go to:
https://www.nyiso.com/documents/20142/11030182/07%202020_RNA_BaseCaseModelAssumptions.pdf/8a22b5c0-d7f5-2c8c-6eaa-2f752ec6f027

2019 CARIS 70x30 Scenario: Review of Assumptions and Resource Mix
Benjamin Cohen of the NYISO led a review of the assumptions and resource mix used in the 70x30 scenario for the 2019 CARIS study. Mr. Cohen began by reviewing the approach to the study, which was introduced in prior ESPWG meetings.
Mr. Cohen highlighted the key policy drivers for the study assumptions:

- 70% of end-use energy shall be generated by renewable energy systems by 2030
- 6,000 MW of distributed solar by 2025
- 185 trillion Btu of end-use energy savings below the 2025 energy-use forecast
- 3,000 MW of energy storage resources (ESR) by 2030
- 9,000 MW of offshore wind (OSW) by 2035

The study will utilize the 2019 CARIS 1 base case 2028 model year with the following adjustments:

- **Load Forecast/Shape**
- **Renewable Energy (RE) Modeling, Locations and Amounts**

- **Neighboring system assumptions**
- **NY Fossil Fleet Operations**
- **70x30 Scenario Load Forecast Assumptions**

Mr. Cohen detailed the load forecast assumptions which incorporate the impacts from Electric Vehicles, Space Heating Electrification, Solar PV and Energy Efficiency.
The renewable energy additions were adjusted to achieve the policy goal of 70% renewable energy. Injection points are assumed to be the closest existing substations based on interconnection points from the NYISO Interconnection Queue. Several charts were provided to illustrate the hourly input profile calculation used to establish the renewable energy capacity levels.
Mr. Cohen explained that initially, the NYISO will run GE MAPS using a "relaxed" case, meaning that no transmission constraints will be modeled inside of the NYCA system. Examples using sample comparisons were provided to provide clarity to the anticipated outputs.
The NYISO will return for stakeholder review and discussion on the transmission system constraint modeling and production results reflecting NYCA transmission constraints. Future discussions with stakeholders include:

- *Review sensitivity analysis of nuclear retirements and energy storage*
- *Review model results for fossil fuel-fired fleet*
- *Identifying transmission constraints that cause renewable curtailments (i.e., renewable generation pockets)*
- *For each pocket, quantify the magnitude and frequency of the curtailments for each assumed resource mix*

To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/05_2019CARIS1-70x30Scenario.pdf/0f1eb9db-8aae-03d0-9b16-b04bc2330872

2020 Update of Economic Forecast

Arthur Maniaci of the NYISO updated the economic forecast provided by Moody's Analytics each year and utilized in the NYISO long term forecast. In December 2018, the US Bureau of the Census reduced recent historical years of population in NY State. Moody's current forecasts of population and households reflects this revision. In June 2019, Moody's Analytics changed their population forecast model. It is now more responsive to differential performance relative to peer states, based on comparative unemployment rates and housing affordability. The population forecast will impact the state GDP, employment, housing forecasts and other economic indexes. These data points are critical to the NYISO long term load forecasts.
NYISO has revised the long term forecast using data back to 2010 for trending purposes. Mr. Maniaci provided updated forecast data and compared the changes to the prior forecast.
To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/09-Economic-Forecast.pdf/772f4ee1-4c24-3a76-9258-6c940bd52f62

2020 Long Term Forecast Assumptions

Arthur Maniaci of the NYISO presented the assumptions for the 2020 long term load forecast. Mr. Maniaci began the presentation with a review of the components that make up the forecast. Load reducing modifiers such as energy efficiency, solar PV, distributed energy resources and energy storage are analyzed and compared against load increasing modifiers, such as electric vehicle adoption, space heating electrification and energy storage losses.

Mr. Maniaci explained the calculations used to develop the long term load forecast and detailed the scenarios that will be used to identify potential variations from the forecast.
To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/11030182/09-2020-Energy-Forecast.pdf/7ad0ce49-2826-bbb8-221c-d0443c8ff535

FERC Filings

February 27, 2020
NYISO 205 filing of tariff revisions to better integrate generator deactivation and reliability planning processes through a comprehensive Short Term Reliability Process

February 27, 2020
Joint 205 filing by NYISO and New York State Electric & Gas Corporation ("NYSEG") of a large generator interconnection agreement (SA 2487) between NYISO, NYSEG and Baron Winds, LLC

February 24, 2020
NYISO report regarding the results of the New Capacity Zone (NCZ") study that did not identify any constrained Highway interfaces and thus no need to establish a NCZ at this time

February 24, 2020
Compliance filing in response to January 23, 2020 Order directives to establish an effective date, incorporate minor revisions, and revise certain buyer-side mitigation tariff records

FERC Orders

February 27, 2020
FERC deficiency letter requesting responses to questions regarding the December 31, 2019 filing of a proposed transmission formula rate

February 25, 2020
FERC deficiency letter requesting additional information regarding Central Hudson's proposed rate schedule for highway system deliverability upgrades under Schedule 12 of the NYISO OATT

February 25, 2020
FERC Letter Order accepted Engineering and Procurement Agreement (SA 2501) between NYSEG and Canisteo Wind Energy LLC

Filings and Orders:

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