# NYISO Consumer Interest Liaison Weekly Summary

## February 4 – February 8, 2019

### *Notices*

- *The Transmission Congestion Contracts Manual **Attachment E** (Points of Injection and Withdrawal) and **Attachment F** (Prohibited Groups of Points of Injection and Withdrawal) for the Spring 2019 Centralized TCC Auction and Summer 2019 Reconfiguration Auctions are now posted to the **Manuals, Technical Bulletins & Guides webpage** under Manuals, Operations.*

- *The **clean** and **redline** versions of NYISO TB-064, "**Changing from Daylight Savings to Standard Time**", and the **clean** and **redline** versions of NYISO TB-088, "**Changing from Eastern Standard Time to Daylight Saving Time**", have been posted to the **Manuals, Technical Bulletins & Guides webpage** under Technical Bulletins, Under Review. The technical bulletins have been updated to reflect 2019 dates*

- *The **final** version of the **NYISO TB-246, "TCC Market: PJM-NYISO Interconnection Scheduling Protocol"**, has been posted to the **NYISO Manuals, Guides, and Technical Bulletins webpage** under the Technical Bulletins folder. This Technical Bulletin describes how the expected flows over the ABC, JK and Hopatcong-Ramapo Interconnections with the PJM Control Area are established in the Transmission Congestion Contracts (TCC) market.*

## Meeting Summaries:

**Monday, February 4, 2019**

**Joint Installed Capacity/Market Issues/Price Responsive Load Working Groups**

Carbon Pricing – Carbon Residual Allocation

Ethan Avallone of the NYISO presented the updated proposal for the proportional allocation methodology for carbon residuals. The bulk of this presentation was scheduled for a January 24, 2019 MIWG presentation but was postponed due to lack of meeting time on that date. The proposal describes the methodology for determining the Load Serving Entities (LSEs) allocation of the carbon residual that results from charging energy suppliers for their carbon emissions.

At the June 4, 2018 IPPTF meeting, the NYISO recommended the Cost Levelizing Approach among the different options presented. At the September 24, 2018 IPPTF meeting, the Brattle Group provided a comparison of the carbon residual allocation options as part of the carbon pricing consumer impact analysis. At the October 29, 2018 IPPTF meeting, the NYISO revised its recommendation from the carbon residual allocation to the proportional allocation methodology after consideration of the Brattle Group's findings.[1]

The carbon residual allocated to LSEs results from carbon charges to suppliers, Imports and Wheels Through minus payments to Exports and Wheels Through. The proportional Carbon Residual Allocation avoids major cost shifts among customers by providing an equal percentage of carbon charges back to each LSE. Mr. Avallone noted that, although rare, there could be circumstances where the carbon residual is negative, and if so, the NYISO proposes that a carbon residual shortfall be allocated according to load ratio share in a similar way to how other residual shortfalls are allocated. The carbon residual allocation will use the LBMPc from the binding real-time interval to calculate the time-weighted integrated (TWI) LBMPc. An example of a carbon residual allocation was provided to illustrate the methodology for the allocation to LSEs. The example also illustrated the flow of residuals to LSEs that serve load across different load zones.

An updated timeline was provided to guide stakeholders to future carbon pricing presentation topics. To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4815989/Carbon%20Pricing%20Residual%20Allocation%20FINAL.pdf/16101736-138a-e7ed-ad77-cbbef3141f16

Distributed Energy Resource Participation Model: Consumer Impact Analysis

Tariq Niazi of the NYISO presented the consumer impact analysis for the Distributed Energy Resource (DER) participation model. Mr. Niazi started his presentation by emphasizing the NYISO's goal to develop a dispatchable DER participation model for the NYISO-administered wholesale markets. Due to a lack of experience with actual DERs in operation, sensitivities were run on the amount of DER penetration, the impact of DERs on LBMPs and the availability of DERs in the real-time market. Mr. Niazi led a detailed review of the assumptions for the analysis for stakeholder clarity, including:

- ***Use of all 2017 Energy Price Intervals***
  - *Hourly Day-Ahead load*
  - *Real-time 5-minute level prices*
- ***Pricing Data from two Generator buses***
  - *Upstate Node: 9-Mile 2*
  - *Downstate node: Ravenswood 3*
- ***DER Injection Window***
  - *Summer (May to October) from HB12:00 to HB19:00*
  - *Winter (November to April) from HB14:00 to HB21:00*
- ***Duration of resource run times***
  - *4, 6 and 8 hour*
- ***Resource availability***
  - *Availability factor of 20%, 50% and 80%*
- ***Level of DER penetration***
  - *600 MW, 1200 MW and 2000 MW*
- ***Price impact***

[1] For further information, please see the presentation at the following link: https://www.nyiso.com/documents/20142/3716686/10.29.2018%20IPPTF%20-%20Carbon%20Residual%20Allocation%20FINAL.pdf/35b5eb94-e885-82e3-796cbd20a8e25f5d

- *6% for 600 MW penetration, 9% for 1200 MW penetration, 11% for 2000 MW penetration*

Mr. Niazi provided the results of the energy market analysis for Upstate (Zones A to F), Downstate (Zones G to K) and Statewide, which were depicted in tables and charts. The statewide impacts ranged from $15M for the scenario of 600 MW penetration with a 4 hour duration and a 20% availability factor to $180M for the scenario of 2000 MW penetration with an 8 hour duration and 80% availability factor.

The NYISO also conducted consumer impact analysis for the Installed Capacity (ICAP) market. Mr. Niazi again led a detailed review of the assumptions used and the sensitivities analyzed. Assumptions for the ICAP market analysis included:

- ***Level of DER penetration***
  - *600 MW, 1200 MW and 2000 MW*
- ***Location of resources***
  - *70% in Zone J, 30% in ROS*
- ***Effect of SCR program departure***
  - *20% of SCRs relocate to DER model, 15% of SCRs leave the ICAP market*
- ***A 10% Derate Factor was assumed for all DER***
- ***Sensitivities were run with DER having a 50% and 100% impact on capacity requirements***
  - *To illustrate potential impact on LCRs and IRM*
- ***The IRM/LCR values from as found system were assumed***
- ***DERs were modeled consistent with the capacity supplier payment structure proposed in the DER project as part of the stakeholder process***
  - *75% payment for 4 hour duration, 90% payment for 6 hour duration, 100% payment for 8 hour duration*
- ***Assumed that all DER will participate in the wholesale market as capacity providers***
  - *No offer floor was assumed for DER*

Mr. Niazi presented the results of the analysis for the ICAP market, providing Short-Term and Long-Term estimated impacts. The Short-Term impact resulted in a range from an increase of $278M to a decrease of $1,572M based on Comparability, Duration and Penetration assumptions. The Long-Term impact was provided with the same assumptions as the Short-Term and the additional assumption that the market would react to the increase in eligible resources and return to an historical Level of Excess. As requested at the October 9, 2018 joint ICAP/MIWG/PRLWG meeting, an additional analysis was conducted with the premise that all SCR participants would leave the ICAP market. The results of this analysis show an immediate increase of $217M, with costs falling as the ICAP market adjusts. As resources are added to return to the historic excess value, a cost decrease of $27M is realized.

Mr. Niazi noted additional impacts to Reliability, Environmental and Transparency aspects of the market to complete the analysis. In response to stakeholder suggestions, the NYISO is considering reposting the presentation with additional references on charts and graphs for stakeholder clarity.

To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4815989/CIA%20-%20DER%20Participation%20Model.pdf/af4f4be7-01cc-5879-64e1-1753a9d93268

External ICAP Rights for the 2019/2020 Capability Year

Hoël Wiesner of the NYISO presented the results of the annual study to determine the amount of capacity that can be imported without violating the LOLE criterion from neighboring Control Areas for the 2019/2020 Capability Period. MARS simulations were performed on the LCR MARS database to determine capacity that can be imported without violating the LOLE criterion. Mr. Wiesner led a

review of the methodology and assumptions used in the determination. Some stakeholders requested that the NYISO provide additional information to the MIWG on the status (inclusion v exclusion) of specific transmission lines in the base case. The results of the study were provided in tabular format as shown below:

| Four-Control-Area Participation | PJM | ISO-NE | HQ | IESO | Row Totals |
|---|---|---|---|---|---|
| | | | | | |
| Initial Values (TTC Summer Ratings) | 1450 | 1400 | 1500 | 1850 | 6200 |
| | | | | | |
| Grandfathered Rights (GF)* | 1080 | 0 | 1110 | 0 | 2190 |
| | | | | | |
| Individual Limints (above GF) | 97 | 847 | 13 | 389 | 1346 |
| | | | | | |
| Simultaneous Limits (above GF) | 32 | 279 | 4 | 128 | 443 |
| | | | | | |
| Final Values** | 1112 | 279 | 1114 | 128 | 2633 |
| * Includes ETCNL for these purposes<br>** Subject to Deliverability Study | | | | | |

The vote for approval of the External ICAP Rights will be conducted at the February 13, 2019 BIC meeting and, if approved, become effective for the 2019 Summer Capability Period. Comments can be sent to jboles@nyiso.com and/or hwiesner@nyiso.com. To see the complete presentation, please go to: https://www.nyiso.com/documents/20142/4815989/ICAPWG_2-4-19_import-rights-final.pdf/f9419fab-c9ec-47fd-7326-8221754ed2fd

Proposal for the Annual ICAP, Annual Demand Response, and Semi-Annual Demand Response Reports

Amanda Carney of the NYISO provided updates to the proposal to revise the reporting requirements for the Annual ICAP, Annual Demand Response and the Semi-Annual Demand Response reports to FERC. Prior presentations on this subject were provided for reference.

Ms. Carney led a review of the updates to existing reports to demonstrate to stakeholders that the information contained in the reports is now available on the NYISO web site.

Given the information provided elsewhere, the NYISO proposes to discontinue the annual reporting obligation for the ICAP Annual Report and Annual and Semi-Annual Demand Response Reports.

To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4815989/ICAP%20Annual%20Report.pdf/7b7fbb3f-339c-f857-5879-79570765f0ed

DER Energy Market Design

Michael Lavillotti of the NYISO presented the proposed market design for the Distributed Energy Resource (DER) participation model. Mr. Lavillotti provided the formal DER definition as follows:

- ***DER: A Generator, Energy Storage Resource, Intermittent Power Resource, Energy Limited Resource, or Capacity Limited Resource participating in an Aggregation whose maximum physical injection is 20 MW or less and Demand Side Resources (including facilities that can reduce Load and inject Energy) that respond to the ISO's instructions.***

Mr. Lavillotti proceeded to outline the program construct for DER participation, highlighting:

- *Aggregations*
  - *Aggregations & Dispatch*
  - *NYISO's Approach to Aggregations*

- *Transmission Nodes*
- *DER Registration*
    - *NYISO's Registration Approach*
    - *Dispatchable DER Registration*
    - *Aggregator & Aggregations*
- *Aggregation Metering*
- *Aggregation Registration*
- *Scheduling and Pricing*
- *Energy Bids by Suppliers*

Mr. Lavillotti's presentation provided references for each major topic of the design to assist stakeholders in reviewing the complete information. In response to a stakeholder question, Mr. Lavillotti noted that there will be a period prior to the deployment of the DER participation model to allow resources to complete the registration process.
Comments can be sent to DER_Feedback@nyiso.com.
To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4815989/DER%20Overall%20Energy%20Market%20Design%20Review%20-%20Part%20I.pdf/67ec9d6d-f15c-1e35-de35-5163a890b13d

**Wednesday, February 6, 2019**

**Joint Installed Capacity/Market Issues/Price Responsive Load Working Groups**

DER: Capacity market Final Design & Tariff Review

Zachary T. Smith of the NYISO led a review of the Market Services Tariff (MST) sections requiring revision to accommodate the Distributed Energy Resource (DER) participation model in the Installed Capacity (Capacity) market. Mr. Smith highlighted the specific sections and provided an overview of the concepts that will be addressed for revision.
Revisions were made throughout MST Section 5 to clean up the existing language to accommodate DER and Aggregations while documenting the obligations DER will acquire for participation. Mr. Smith noted required tariff changes such as:

- Specifying that all ICAP Suppliers must coordinate outage schedules within the NYCA
- DERs, Aggregations and Resources with Energy Limitations not located within the NYCA are excluded from participation in the NYISO Capacity Market.
- Communication and metering requirements for Control Area Services
    - Revisions to allow units to aggregate at a single location for purposes of bidding
- Revisions to the Minimum Unforced Capacity Requirement calculation to account for Resource's Adjusted ICAP value
- Revisions to the LSE Locational Minimum Unforced Capacity Requirement calculation to account for Resource's Adjusted ICAP value

Mr. Smith identified several areas of Section 5.12 that will require revision and introduced new sections that will be added to the tariff. New sections include:

- MST 5.12.13
    - This section describes requirements for Aggregations that are Installed Capacity Suppliers
- MST 5.12.14
    - This section pertains to the Energy Duration Limitations and Adjustment Factors for Installed Capacity Suppliers
        - 5.12.14.1

        - This section describes the Adjusted Installed Capacity applicable to Capacity Suppliers with an Energy Duration Limitation
    - 5.12.14.2
        - This section describes the process for the periodic review of the Capacity Value Study Tariff revisions by Section

The NYISO will continue to discuss tariff revisions with stakeholders throughout the process to develop complete proposed tariff language to accommodate the DER participation model in the Capacity market.
Comments are encouraged and can be sent to ztsmith@nyiso.com. To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4841804/MST%205%20DER%20revisions.pdf/c8d92916-b9b1-c6a2-077c-61f447e08799

DERs: Interconnection and CRIS Requirements

Thinh Nguyen of the NYISO led a review of the proposed revisions regarding how a Distributed Energy Resource (DER) may obtain interconnection service and/or Capacity Resource Interconnection Service (CRIS). As part of the DER project, NYISO proposes to allow energy market and capacity market participation by individual resources with a minimum of 100kW, together with varying duration limitations. To date, resources evaluated in the NYISO's interconnection process for Energy Resource Interconnection Service (ERIS) must have a minimum of one MW without varying duration limitations.
Mr. Nguyen explained the circumstances where DERs will or will not be subject to the NYISO Interconnection Procedures:

- *NYISO's interconnection procedures govern the interconnection of the facility if:*
    - *Developer intends to make wholesale sales and*
    - *Developer proposes to interconnect to (i) transmission or (ii) distribution facilities on which there is already a generator making wholesale sales (i.e., "FERC-jurisdictional distribution")*
- *NY Standardized Interconnection Requirements (SIR) govern the interconnection of the facility if:*
    - *Developer is interconnecting to portions of the distribution system other than "FERC-jurisdictional distribution" and the resource is less than or equal to 5 MW*
- *Utility interconnection procedures govern the interconnection of resources if the interconnection is not subject to the NYISO or SIR processes*
    - *Interconnection Service for SIR or Utility-level interconnection is based on the applicable interconnection agreement*
    - *Facilities that proceed through the SIR or utility interconnection processes must have an interconnection agreement that allows wholesale sales*

Mr. Nguyen noted that any facility over two MW requesting CRIS will be subject to a Deliverability Study whereas, facilities two MW and under will not be subject to a Deliverability Study. Also, a facility will be evaluated using the maximum capacity that the facility is capable of injecting into the electric system. However, if the maximum capacity that the facility is capable of injecting into the electric system is limited (e.g., through the use of a control system, power relay(s), or other similar device settings or adjustments), then the developer must obtain both the NYISO's and Connecting Transmission Owner's agreement that the developer's implementation of the limit will not adversely affect the safety and reliability of the electric system. Such agreement cannot be unreasonably withheld from approval.

Mr. Nguyen explained the process DERs will be subject to for obtaining CRIS through the Interconnection Procedures. It was noted that CRIS will be awarded at the facility level, and not awarded to individual assets within a facility. CRIS will only be applicable to injection capability of resources (not withdrawal or load reduction portion).
The Deliverability Methodology was detailed to inform stakeholders that the Deliverability Study uses derated generator capacity incorporating availability; UCAP Deration Factor (UCDF), with the UCDF value applied to the requested CRIS level. The derating factor was defined for both intermittent and non-intermittent resources. Mr. Nguyen highlighted an example of the Derating Factor and UCAP used for Duration Limited Resources in the Deliverability Study for stakeholder clarity.
Mr. Nguyen led an overview of the Open Access Transmission Tariff (OATT) sections that will require revision to accommodate the DER interconnection rules.
Comments can be sent to tnguyen@nyiso.com. There will be additional opportunities for stakeholder discussion on the Interconnection Procedures for DER in future ICAPWG presentations. To see the complete presentation, please go to:
https://www.nyiso.com/documents/20142/4841804/020619%20MIWG%20DER%20CRIS%20and%20Interconnection.pdf/001de6c7-8bab-7b6a-0f6a-aaf21f768b26

DER: Energy Market Final Design & Tariff Review

Michael Lavillotti of the NYISO presented the second installment of an overview of the market design for the Distributed Energy Resource (DER) participation model. Mr. Lavillotti presented a large portion of the overall market design at the February 4, 2019 ICAP/MIWG/PRLWG meeting. Both presentations took the opportunity to review topics discussed previously with stakeholders to enable and enhance the participation of DER in the NYISO Wholesale Energy & Ancillary Services Market.
Mr. Lavillotti explained that, as in the February 4, 2019 presentation, the topics in the presentation were noted with dates referencing prior detailed stakeholder presentations.
Mr. Lavillotti highlighted the topics below while responding to stakeholder questions and comments.

- Overview & Purpose
- Aggregations
  - Aggregations & Dispatch
  - NYISO's Approach to Aggregations
- Transmission Nodes
  - NYISO's Approach to Transmission Nodes
- DER Registration
  - NYISO's Registration Approach
  - Dispatchable DER Registration, Aggregator & Aggregations
- Aggregation Metering
- Aggregation Registration
- Scheduling and Pricing
- Energy Bids by Suppliers

Mr. Lavillotti did not cover rules for the accommodation of Dual Participation for DER in this presentation, as that topic is currently scheduled for the February 15, 2019 ICAP/MIWG/PRLWG meeting.
An appendix was included providing the process for the identification of Transmission Nodes and a review of Load Nodes for stakeholder reference.
Feedback can be submitted to DER_Feedback@nyiso.com for consideration. To see the complete presentation, please go to:

https://www.nyiso.com/documents/20142/4815989/DER%20Overall%20Energy%20Market%20Design%20Review%20-%20Part%20I.pdf/67ec9d6d-f15c-1e35-de35-5163a890b13d

**Thursday, February 7, 2019**

**System Operations Advisory Subcommittee**

NYISO Operations Report – January 2019

Peak Load:

The peak load for the month 24,728 MW occurred on Monday, January 21, 2019 at HB18. The Operating Reserve requirement during the peak was 1,965MW resulting in a minimum total Operating Capacity requirement of 26,693 MW.

Reserve Requirements:

| Reserve | 10 Min Sync | Non Sync | 30 Min |
|---|---|---|---|
| Requirement | 655 | 1,310 | 1,965 |
| For Hour | 939 | 2,697 | 5,183 |
| DSASP Cont. | 54 | 0 | 54 |

Major Emergencies: None

Alert States: 22

1 Shortage of 10 Minute Synchronized Reserve
15 Emergency Transfer Declared
6 Exceeding Central East Voltage Contingency Limit

The Alert State was declared 12 times during January 2018

Thunderstorm Alerts: 0

Reserve Activations: 9

Emergency Actions: None

Purchases: None

Sales: None

TLR 3 Declared: 5 for a total of 36.23 hours

## FERC Filings

**February 5, 2019**

NYISO eFiled a notice to the Commission that, on January 27, 2019, the NYISO successfully deployed a fix to the software that it developed to implement Order No. 831.

**February 4, 2019**

NYISO filing of an initial brief in response to the December 20, 2018 FERC order denying the NRG tariff waiver request and establishing a paper hearing regarding NYISO's current metering requirements

## FERC Orders

**February 8, 2019**

FERC order accepting revisions to the Public Policy Transmission Planning Process portion of its Comprehensive System Planning Process effective February 10, 2019, as requested

**February 8, 2019**

Order accepted the NYSRC filing of an Installed Reserve Margin of 17.0% for the NYCA for the 2019-2020 Capability Year

## Filings and Orders:

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