New York ISO
Independent System Operator

DER 205 Filing – Feedback & Additional Language

Harris Eisenhardt

Market Design Specialist, New Resource Integration

ICAPWG

January 26, 2023

Agenda

- Background & Overview
- Draft Tariff Language – Feedback & Responses
- SCR Transition Information
- DSASP Transition Information
- DER Deployment and Next Steps

New York ISO

Background & Overview

- The NYISO filed its DER Market Design on June 27, 2019.
- FERC accepted the NYISO's proposed DER Market Design in January 2020.
- The NYISO has since worked towards deployment of the market design, in tandem with its FERC Order No. 2222 compliance initiative.
- Throughout the implementation process, the NYISO has identified areas in its previously accepted tariff where revisions are necessary to:
  - Clarify previously accepted concepts
  - Align the tariff with the NYISO's software implementation
- NYISO will submit a FPA 205 filing to FERC containing these revisions to become effective simultaneously with the scheduled deployment of DER in 2023.
- Today's presentation will review responses and accompanying updates to the draft tariff language that will be included in an upcoming FPA Sec. 205 filing.
  - The NYISO initially presented these concepts at the October 7, 2022, ICAPWG and November 8, 2022, ICAPWG
  - The NYISO reviewed the draft tariff language at the December 6, 2022, ICAPWG and December 13, 2022, ICAPWG
  - The NYISO responded to feedback at the January 6, 2023, ICAPWG

New York ISO

Draft Tariff Language – Feedback & Responses

NYISO Provision of DER Data to the Distribution Utility

- **The NYISO proposed to add language to Services Tariff Section 4.1.10 to describe the Distribution Utility review process.**
- **Stakeholders provided two comments:**
  - 1) The NYISO should clarify types of changes to an existing DER or group of DER that will result in supplemental review by the Distribution Utility
    - The NYISO proposes to include a non-comprehensive list of modifications to a DER's physical or operating parameters that necessitate a supplemental review by the applicable Distribution Utility in the forthcoming Aggregation Manual
      - *e.g.*, Upper/Lower Operating Limits; Nameplate Ratings; Metering & Telemetry Infrastructure
  - 2) The clause 'or propose to connect to' should be removed from the draft language explaining which DER are subject to DU review – a prerequisite to enrollment is a successfully completed interconnection agreement
    - The NYISO agrees and proposes to remove the clause from the draft redlines

New York ISO

DER Inverter Standards

- Stakeholders requested that NYISO verify that its tariff language appropriately subjects Distributed Energy Resources to compliance with the latest applicable inverter and equipment standards.
- The pro forma Small Generator Interconnection Agreement in OATT Sec. 32.5, Appendix 7 states the following:
  - "The Interconnection Customer agrees to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Small Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of the Connecting Transmission Owner or Affected Systems"
- The New York State Standardized Interconnection Requirements (NYS SIR) contain requirements addressing inverter and equipment standards applicable to DER that interconnect via the NYS SIR, rather than the NYISO's Small Generator Interconnection Procedures (SGIP), and elect to participate in the wholesale market.

New York ISO

Application of TSC/NTAC to Aggregations Containing Energy Storage Resources

- **At the January 6, 2023, ICAPWG stakeholders requested updates to clarify that the TSC/NTAC shall be applied to the Aggregation's net Actual Energy Withdrawals when the Aggregation is not providing a service:**
  - The NYISO proposes updates throughout OATT Sections 2.7.2.1.5 and 2.7.2.4.4 to reinforce this concept
  - "(ii) the sum of the Aggregations Energy injections~~,~~ and Demand Reductions, less the Aggregation's ~~and~~ Energy withdrawals, is negative…"

New York ISO

Removal of DER and Aggregations from the NYISO-Administered Markets

- **At the January 6, 2023, ICAPWG stakeholders requested additional language to reference the applicable supplemental documentation where procedural details regarding notification and timing of removal, and administrative tasks associated with the removal of a DER or Aggregation will be described.**
  - The NYISO proposes to add a reference to the Aggregation Manual in MST Sec. 4.1.10 that provides additional explanation

New York ISO

Cost-Based References for Aggregations

- **Stakeholders requested additional explanation of the following:**
  - How will a reference level for a Demand Side Resource in an Aggregation be calculated?
  - Why is a cost-based approach preferred over an LBMP-based approach?
- **As discussed at the January 6, 2023, ICAPWG:**
  - LBMP and Bid-based Reference levels are computed based on 90-day historical data reflecting a Resource's bids or applicable LBMPs
    - Aggregations may change in composition within a 90-day period – the reference level applied to an Aggregation may inappropriately reflect a different historical composition of technology types
  - Cost-based references enable an Aggregator to dynamically reflect different technology types within an Aggregation and inform the NYISO of which resource technologies are available on an hourly basis to inform the final reference level determination

New York ISO

Cost-Based References – Overview

- **Reference level calculated using approved cost data from the Reference Level Software.**
- **Reference level = heat rate * fuel and emissions costs + variable operating costs + risk and opportunity costs.**
  - Please take note of the components of this formula – different types of DER technologies are listed on the following slide
    - Each reference level calculated for DER will leverage the expressions in this equation differently:
      - *e.g.*, conventional fossil generation units participating as DER shall have reference levels computed largely based on heat rate and fuel costs, while Demand Side Resources participating as DER will have reference levels computed based more so on risk and opportunity costs rather than fuel or heat rate
- **MST Section 23.3.1.4.1.3 contains additional details.**

New York ISO

Cost-Based References for DER

- For DER, it will not be known exactly what resource(s) within the aggregation are providing MWs in a given hour.
- Mitigation References will create a list of average marginal costs for different resource types:
  - Thermal, hydro, solar, battery, demand response, etc.
  - Additional filtering criteria such as location or fuel type can be added as necessary
- Aggregation-level offers will include a resource type from this list for each hour to indicate the highest cost resource that is available to produce energy in the Aggregation.
- The NYISO-estimated marginal cost of that resource type will serve as the reference level for the entire Aggregation for that hour.

New York ISO

ECBL Proxy Load Calculation

- **Stakeholders provided the following feedback at the December 13, 2022, ICAPWG:**
  - The NYISO should consider permitting uneconomic Demand Reduction (i.e., Demand Reduction that occurred at a Real-Time LBMP that is less than the Monthly Net Benefits Threshold price) to be included in the calculation of ECBL
- **The NYISO reiterates the following:**
  - Each month for the coming month, the NYISO publishes the Monthly Net Benefits Threshold, with which the monthly net benefits test is administered based on Real-Time LBMP. Demand Reduction by a Demand Side Resource when the Real-Time LBMP is less than the threshold is considered 'uneconomic,' and not compensable
  - An Aggregator may elect to structure its offers to utilize Demand Side Resources in an Aggregation's performance such that Demand Reductions are not dispatched should the LBMP be less than the Monthly Net Benefits Threshold price
    - The ECBL Proxy Load is calculated using a rolling lookback period – erosion of the DER's baseline will not persist if offers are structured so that Demand Side Resources in an Aggregation are dispatched only when the Real-Time LBMP exceeds the Monthly Net Benefits Threshold price
  - The ECBL Proxy Load should reflect compensable performance, including injections, withdrawals, and Demand Reductions – uneconomic demand response, like day-to-day ebb and flow of Load, should be reflected in the ECBL, and does not represent the compensable performance of the Aggregation

New York ISO

BPCG and DAMAP Equations

- At the January 6, 2023, ICAPWG Stakeholders reiterated the recommendation that the NYISO review its proposed modifications to the tariff equations to ensure that the sign convention applied to each tariff-defined term does not conflict with the formulation of the 'net' Actual Energy.
- The NYISO has reviewed the proposed modifications in conjunction with its tariff definitions for Actual Energy Injection, Actual Energy Withdrawal, and Actual Demand Reduction.
  - The NYISO proposes clarifying modifications to MST 18.4.2 and MST 25.3.3 to address stakeholder feedback:
    - "…average Energy injections plus average Demand Reductions minus average Energy withdrawals…"

New York ISO

Telemetry Data Clarification

- **The NYISO received feedback from the Joint Utilities regarding terminology used in OATT Sec. 24 to describe 6-second data transmitted to NYISO reflecting the load of a Demand Side Resource.**
  - The NYISO has included ministerial updates to improve the clarity of the language

New York ISO

SCR Transition Information

Performance Data

- **NYISO proposes to add the following concepts to Services Tariff Sec. 5.12.11.1 Responsible Interface Parties:**
  - When a Special Case Resource is enrolled in a Capability Period and transitions to become a Distributed Energy Resource within that same Capability Period, it may demonstrate its maximum enrolled megawatt value via performance in a mandatory event or in a performance test, provided, however, that if no such mandatory event occurred prior to the Special Case Resource becoming a Distributed Energy Resource, the Distributed Energy Resource shall participate in a performance test in accordance with the Aggregation Manual
  - Responsible Interface Parties are not eligible to receive Energy payments, as described in Services Tariff Section 5.12.11.1, for Demand Reductions caused by Distributed Energy Resources performing in a performance test
  - When a Demand Side Resource that is participating, or has participated, in a DER Aggregation and seeks to become a Special Case Resource, the Resource's Average Coincident Load shall be calculated in accordance with the provisions of Services Tariff Section 5.12.11.1 and its subparts

New York ISO

Transition and Maximum ICAP as a DER

- **NYISO proposes to add the following concepts to Services Tariff Sec. 5.12.13.1 Resources Entering and Changing Aggregations:**
  - When a Special Case Resource enters an Aggregation to become a Distributed Energy Resource within a Capability Period, the maximum Installed Capacity that an Aggregator can declare for the Distributed Energy Resource shall be the upper limit of Installed Capacity calculated in accordance with Services Tariff Section 5.12.11.1.1
  - When a Special Case Resource enters an Aggregation and becomes a Distributed Energy Resource at the beginning of a Capability Period (i.e., begins participating as a Distributed Energy Resource on May 1 or November 1), the maximum installed Capacity that an Aggregator can declare for that Distributed Energy Resource shall be the upper limit of Installed Capacity for the immediately prior like Capability Period, calculated in accordance with Services Tariff Section 5.12.11.1.1, if such value was calculated
  - When a Generator with an approved in-period DMNC rating enters an Aggregation to become a Distributed Energy Resource, the maximum Installed Capacity that an Aggregator can declare for the Distributed Energy Resource shall be the minimum of the Generator's approved in-period DMNC rating and the Generator's CRIS

New York ISO

DSASP Transition Information

DSASP Transition → DER Participation

- Consistent with market rules accepted by the Federal Energy Regulatory Commission ("Commission") on January 23, 2020, in Docket No. ER19-2276, the NYISO will retire the Demand Side Ancillary Services Program ("DSASP") when DSASP Resources become eligible to utilize the Distributed Energy Resource ("DER") and Aggregation market rules. In preparation for the retirement of the DSASP, the NYISO will stop accepting DSASP Resource applications upon go-live of the DER participation model.
  - Completed DSASP Registration Packets submitted prior to this deadline will be processed in accordance with the existing DSASP registration processes.
- A similar process as outlined on this slide will be applied to Day-Ahead Demand Response Program Resources.

New York ISO

Slide presented at the 4/28/22 ICAPWG

Transmission Owner Telemetry

- **Transmission Owner communications are a prerequisite to participation in the NYISO's DER program.**
- **The NYISO is committed to providing for the continued participation of DSASP Providers and their Resources in the NYISO markets after implementation of the DER model.**
  - However, DSASP Resources will ultimately be required to transition to the DER Participation Model.
- **NYISO acknowledges the potential that one or more TOs may not be able to establish appropriate communication infrastructure with DSASP Resources by the time the DER model is deployed.**
  - Consistent with this concern, the NYISO will align the period for existing DSASP Resources to transition to DER with the time it takes to establish the TO communications connection.
  - NYISO expects TOs and Market Participants to cooperate to establish required communications

New York ISO

DSASP → DER Transition Period

- **Effective upon the deployment date of the DER participation model in 2023, the NYISO will begin a 12-month transition period during which all DSASP and DADRP Resources may continue participating in their respective programs while establishing telemetry with the applicable TO that is required for DER participation.**
  - The NYISO has assessed available information from various utilities and has determined that the 12-month transition period is a reasonable duration to support the anticipated volume of transitioning DSASP Resources
  - Please refer to the Joint Utilities' August 30, 2022, presentation DER Real-Time Telemetry: Distribution Utility Solutions for additional supporting technical information

New York ISO

DSASP & DADRP Transition Next Steps

- The NYISO will continue to address inquiries pertaining to telemetry communication connection and will continue to support end-to-end telemetry communication testing with Aggregator control centers and the applicable TOs as needed.
- Telemetry connection between the Aggregator control center and applicable TO is a prerequisite to Aggregation participation in the NYISO markets.

New York ISO

DER Deployment & Next Steps

2023 DER Deployment Milestones

- Mid April: NYISO expects to begin accepting Customer Registration for Aggregators.
- June/July: Tariff is expected to become effective; NYISO Aggregation System is anticipated to open for enrollment of DER and Aggregations.
  - Tentative 'Day 1' of the DSASP 12-month transition period
- Date of Enrollment + Workflow Reviews: Distribution Utility review and NYISO workflow begins upon submission of Aggregation and DER enrollment data to the Aggregation System; expected to take approximately 90 days.

New York ISO

Manuals and Guides

- **The NYISO will return to present the following remaining manuals throughout Q1 and Q2 in preparation for DER deployment:**
  - Aggregation Manual – remaining Parts
  - Reference Level Manual
  - Accounting and Billing Manual
  - Revenue Metering Requirements Manual
  - ICAP Manual
  - Load Forecasting Manual
  - DADRP Manual – Not to be updated until retirement of DSASP and DADRP
- **User's Guides are not typically reviewed in Working Groups and are instead published for a stakeholder review period prior to final publication.**
  - The NYISO intends to publish the following User's Guides throughout Q1-Q2:
    - Aggregation System User's Guide
    - Market Participant User's Guide
    - GOCP User's Guide
    - Wind and Solar Plant Data User's Guide
    - RLS User's Guide
    - AMS Automated Market User's Guide
    - DRIS User's Guide – Not to be updated until retirement of DSASP and DADRP
- **The Direct Communications Procedure (CEII) will be updated and made available for stakeholder request via stakeholder services online form request:**
  - https://nyiso.tfaforms.net/187

New York ISO

DER Training

- **NYISO Training Opportunities:**
  - Market Training
    - Comprehensive training programs for both DER Onboarding and DER Market Participation are currently under development and will be administered across late Q1 and into mid-Q2 2023
  - Operations Training
    - The Spring System Operator Training Seminar will include an overview of the DER participation model and operation of the Grid Operations Communication Portal (GOCP).

New York ISO

Next Steps

- **The NYISO will seek stakeholder approval of all concepts and language at the February 15 BIC and February 22 MC.**
  - Language included in the following meeting materials:
    - December 6, 2022, ICAPWG
    - December 13, 2022, ICAPWG
    - January 6, 2023, ICAPWG
    - January 26, 2023, ICAPWG
- **NYISO will submit the proposed tariff revisions to FERC after approval by stakeholders and the NYISO Board, with a proposed effective date that is consistent with the effective date for the 2019 Aggregation model.**
  - The NYISO will seek an effective date for the tariff changes that is consistent with the implementation schedule for the 2019 market design, except for the tariff revisions related to DADRP and DSASP, which changes will align with the planned retirement of those programs.
- **Please send any questions that were not addressed during this presentation to: DER_Feedback@nyiso.com**

New York ISO

Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

New York ISO

Questions?