

DER Market Design –TSO/DSO Coordination Issue Discovery

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Agenda

- **Background & Overview**
- **TSO/DSO Issue Discovery**
- **Next Steps**

TSO/DSO Issue Discovery

Background & Overview

■ M222 Support TSO and DSO Coordination Efforts

- August 27, 2021, BPWG:

- “...the NYISO, the JU, LIPA, and NYPA will continue to coordinate in support of DER participation model topics, including but not limited to Transmission Nodes, Dual Participation, and operational tools.”
- “The NYISO will review the results of those efforts with its stakeholders in 2022 via NYISO market and operational working groups as an issue discovery effort. The 2022 deliverable will be Issue Discovery.”
- “Additionally, the NYISO will contribute to ongoing efforts at the New York Department of Public Service to develop a Distribution System Platform on which a distribution centered marketplace may proliferate. The NYISO will support these efforts by providing background on current and planned wholesale market constructs.”

■ Today’s presentation will summarize key findings from the NYISO’s collaborative effort with the New York Transmission Owners and Joint Utilities of New York throughout 2022.

2022 Workshop Series

- The NYISO coordinated with ICF, the JU, the NYTOs, and the DPS to host semi-monthly workshops to address a range of topics pertaining to DER deployment readiness.
- The Joint Utilities hosted an additional two workshops for direct stakeholder engagement on telemetry coordination and granular DER schedules between Aggregators and Transmission Owner and Distribution Utility control centers.
- All material outcomes either have been discussed or are currently planned for discussion at the SOAS, CDAS, and ICAPWG forums.

Operational Coordination

- **The NYISO identified existing documentation that captured previous discussions on Day Ahead and Real Time coordination among the NYISO, Aggregator, Transmission Owner, and Distribution Utility.**
- **The NYISO coordinated discussions on the following aspects of operational coordination for DER/Aggregations:**
 - Roles and responsibilities of the Aggregator, Transmission Owner, and Distribution Utility
 - Process to manage changes to the transmission and distribution systems and the associated impacts on deliverability of individual DER
 - Granular DER operating plan exchange in Day Ahead from the Aggregator to the applicable Distribution Utility
 - Exchange of operating data (e.g., Day Ahead Operating Plan, Telemetry, Revenue Quality Meter Data)
 - Communication of dispatch signals to Aggregator Control Centers, outage management
- **NYISO reviewed the documented outcomes of these coordination efforts with the stakeholder community and incorporated feedback from Aggregators.**
- **What's next?**
 - The Aggregation Manual Part I draft reflects decisions and content reviewed with the stakeholder community in support of operational coordination – the NYISO will continue to refine this language to support the deployment of DER
 - NYISO discuss any updates throughout Q1 of 2023, as needed, prior to the BIC vote to approve the manual in Q2 2023
 - The NYISO's FERC Order No. 2222 Compliance tariff updates to the MST reflect these outcomes as well

DER & Aggregation Enrollment Process

- **The NYISO worked collaboratively with the JU to design a workflow in support of the 60-day Distribution Utility review of DER, as directed by Order No. 2222.**
 - While the deployment of Order 2222 will not occur in 2023, the NYISO has documented a DU review to support initial deployment of DER and preservation of distribution system safety and reliability
- **The NYISO coordinated discussions on the following aspects of enrollment for DER/Aggregations:**
 - Aggregator provision of physical and operating characteristics of each DER/Aggregation to the NYISO
 - Secure exchange of data and information to the applicable Distribution Utility
 - Distribution Utility review of each DER/Aggregation for distribution system safety and reliability
 - Identification of operational issues and documentation of mitigation strategies to allow DER wholesale market participation on the distribution system
 - Accompanying communications among the Aggregator, Distribution Utility, and NYISO to resolve reliability or safety concerns, as needed
 - Notice to the Distribution Utility of DER/Aggregation participation for each calendar month
- **What's next?**
 - The Aggregation Manual Part II draft will reflect decisions and content reviewed with the stakeholder community in support of the enrollment process – the NYISO will continue to refine this language to support the deployment of DER
 - NYISO discuss any updates throughout Q1 of 2023, as needed, prior to the BIC vote to approve the manual in Q2 2023
 - The NYISO's FERC Order No. 2222 Compliance tariff updates to the MST reflect these outcomes as well

Data Dictionary

- **The NYISO worked collaboratively with the JU to document the necessary physical and operational information about each DER/Aggregation, as directed by Order No. 2222.**
- **The list of informational attributes, referred to as the ‘data dictionary,’ reflects the data that must be provided by the Aggregator to the NYISO.**
 - This list reflects common attributes requested by each Distribution Utility in support of the 60-day review process
 - For example, the Distribution Utilities requested collection of Circuit ID and hourly injection & withdrawal limits for each DER as dictated by the applicable interconnection agreement
- **What’s next?**
 - The NYISO intends to document and describe each required data attribute in its forthcoming Aggregation System User’s Guide
 - The NYISO’s FERC Order No. 2222 Compliance tariff updates to the MST reflect these outcomes as well

Duplicative Compensation

- **The NYISO and the Joint Utilities have collaborated on a framework to prohibit the participation of resources through an Aggregator that are receiving compensation for the same services both in the wholesale and retail markets, as directed by Order No. 2222.**
- **NYISO's Order No. 2222 compliance filing proposed to effectuate this requirement via an Aggregator self-attestation that its DER are not providing the same service(s) in a retail market and/or program.**
 - FERC accepted this design in its June 2022 Order
- **What's next?**
 - NYISO will not enforce a restriction or attestation on initial DER deployment – only when Order No. 2222 is implemented will this be required
 - The draft sample matrix accompanying today's materials reflects progress to date for stakeholder awareness

Transmission Nodes List Updates

- The latest version of the list of Transmission Nodes to be utilized on deployment of DER is posted in the meeting materials for the February 24, 2022, ICAPWG.
- The NYISO documented feedback from the JU throughout 2022 that several additional nodes would be necessary to appropriately reflect certain distribution system configurations
- What's next?
 - These additional nodes will be incorporated through a future iteration of the NYISO's annual review of Transmission Nodes.

Telemetry Communications Testing

- The NYISO requires each Aggregator's control center to establish a telemetry connection to the NYISO via the applicable Transmission Owner.
- The NYISO will conduct an end-to-end test of telemetry communications with the applicable Aggregator and Transmission Owner upon enrollment of each Aggregation.
- The NYISO has collaborated with the JU to document a draft procedure based on existing telemetry testing processes between the NYISO and Transmission Owner.
- **What's next?**
 - The NYISO will use this foundational document to facilitate discussions with stakeholders, leading to a review of updates to the Aggregation Manual to reflect the procedure

DER Metering

- **NYISO's DER market design to be implemented in 2023 requires each Distributed Energy Resource to have a net Revenue Grade Meter.**
 - Depending on the configuration of the DER, additional direct metering may be required if there is a storage device co-located with load
- **The NYISO and JU discussed the implications for wholesale and retail settlement based on retail load co-located with injection assets participating in the wholesale market.**
- **The NYISO reviewed the outcomes of those deliberations at the July 21, 2022, ICAPWG.**
- **What's next?**
 - NYISO will draft updates to the appropriate documentation to provide guidance regarding acceptable DER metering configurations, and will review such updates for approval by stakeholders
 - NYISO will continue to communicate with the JU to evaluate longer-term deployable metering solutions beyond the scope that is viable for 2023 go-live

DER Meter Data, Telemetry, and Baselines

- The NYISO and JU continue to collaborate to better define and document the roles and responsibilities of the Transmission Owner in the meter data, telemetry, baseline calculation processes and corresponding communication to the NYISO.
- The NYISO does not currently anticipate changes to its existing 2019 DER market design tariff language, and will pursue defining these details in its manuals and procedures, namely the Aggregation Manual.
- What's next?
 - Corresponding updates to the Aggregation Manual and other NYISO manuals will be reviewed with stakeholders for approval

Market Design and Integration Working Group (MDIWG) Participation

- The NYISO has been contributing to ongoing efforts at the New York Department of Public Service to consider a Distribution System Platform to help enable a retail DER marketplace.
- The NYISO has supported these efforts by providing background information on current and planned wholesale market rules and advocating for distribution designs consistent with the ISO's core mission of maintaining a reliable grid and efficient markets.
- The NYISO continues to contribute to ongoing discussions focused on DER use cases and applications integrating with wholesale participation of DER

NYISO Manuals Updates

- **NYISO reviewed updates to several manuals with the JU and stakeholders throughout 2022:**
 - Aggregation Manual Part I
 - Ancillary Services Manual
 - Emergency Operations Manual
 - Transmission & Dispatch Operations Manual
 - Day-Ahead Scheduling Manual
 - Control Center Requirements Manual
 - Outage Scheduling Manual
 - Emergency Demand Response Program Manual
- **The NYISO will resume discussions on manual and user guide updates in 2023, leading to a BIC vote on all manual updates (User Guides to be reviewed at Working Groups, but not voted on) for DER prior to deployment.**
 - Remaining for review:
 - Aggregation Manual Parts II, III, IV
 - Grid Operations Coordination Portal User's Guide
 - Direct Communications Procedure
 - Installed Capacity Manual
 - Load Forecasting Manual
 - Reference Level Manual
 - RLS User's Guide
 - Day Ahead Demand Response Program Manual
 - Wind and Solar Plant Data User's Guide
 - Market Participant User's Guide
 - Aggregation System User's Guide
 - Transmission Congestion Contracts Manual
 - Demand Response Information System User's Guide
 - AMS Automated Market User's Guide
 - Revenue Metering Requirements Manual

Next Steps

Next Steps

- **NYISO will continue updating its manuals, user guides, and tariff in preparation for the deployment of DER in Q2 2023.**
 - NYISO tentatively plans on presenting additional manual revisions before the end of 2022, but will resume discussions on all remaining updates in Q1 2023
- **Please send any questions that were not addressed during this presentation to: DER_Feedback@nyiso.com**

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

Questions?