

Distributed Energy Resources (DER) in the NYISO Markets

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DISTRIBUTED RESOURCES OPERATIONS

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Operations & Markets Overview

Delivering the #gridofthefuture

We are engineers, operators, analysts, economists, and technologists dedicated to a reliable and sustainable power grid

600+

Dedicated employees

700

Power generating units

33,956 MW

Record peak demand in 2013

450

Wholesale energy market participants

11,200

Circuit miles of transmission managed and monitored

151,556 GWh

Delivered to New York consumers in 2024

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NYISO-administered Wholesale Markets

- **Wholesale Energy Markets - meet demand in New York**
 - Offers in Day-Ahead Market (supply to meet the forecasted load), and the Real-Time (RT) Market (balance the Market to meet any differences in forecasted and RT demand)
- **Ancillary Services- maintain reliable operation of the NYS power system**
 - Provide Operating Reserves for real-time power system contingency, or Regulation Service providing 6-sec balancing of load and generation to maintain system frequency at 60 Hz
- **Installed Capacity Market - procure sufficient resource capability, meet expected maximum energy needs plus a margin**
 - Resources that participate as suppliers offer to sell capacity:
 - For ensuring the availability of their energy to meet NYCA demand, suppliers are awarded regular capacity payments
 - Offer to sell capacity through NYISO-administered auctions, or engage in Bilateral Capacity Transactions

NYISO DER and FERC Order No. 2222

Key Dates

NYISO DER Market
Design Concept
Proposal

First DER
Enrollments

Over 350 MW
Enrolled

December
2017

April 16,
2024

Summer/
Fall 2025

October
2025

March
2026

Early
2027

DER &
Aggregation
Participation
Model Go-Live

DSASP/DADRP
Sunset

Targeted Order
No. 2222
Implementation

Benefits and goals of DER participation

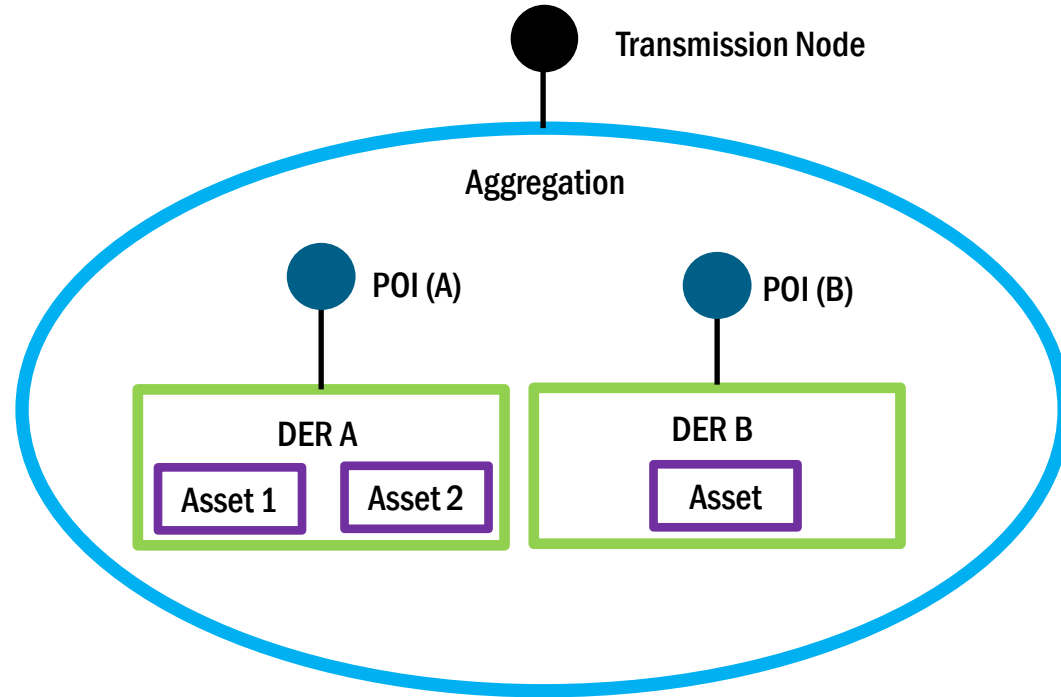
- **Permit DER participation alongside traditional resources in the wholesale markets**
 - DER that are not currently eligible to participate or that cannot fully participate may have the opportunity to do so by joining an Aggregation
 - For example, small facilities not individually capable of satisfying minimum participation requirements, facilities seeking to provide both wholesale and retail services simultaneously, and run-time-limited facilities
- **Enables DER that employ different technologies to enter into an Aggregation, where the facilities may combine their capabilities to satisfy requirements**
 - Enhances opportunities for DER to fully participate in the NYISO-administered markets, reduces barriers to entry, and permits such facilities to provide all services for which they are technically capable

DER & Aggregation Participation Model Overview

DER Overview

- **A Market Participant (“Aggregator”) may combine individual DER facilities, located on the transmission or distribution system as a single unit (an “Aggregation”) to participate in the NYISO-administered markets**
 - An Aggregator may prudently combine Resource types and sizes to participate in the NYISO markets as an Aggregation

DER Overview Cont.



Requirements

- **Size: DER minimum: 10 kW, Aggregation minimum: 100 kW in Energy, Operating Reserve, and/or Installed Capacity**
 - If an Aggregation offers a combination of Energy injections, Energy withdrawals, and/or Demand Reductions, the Aggregation must offer the minimum offer level of 100 kW for each DER type
- **Metering: Revenue Grade Meter at the POI**
 - Wholesale metering and/or meter data services from a Meter Authority (MA)
 - Aggregator responsible for settlement data provided to the NYISO on its behalf by the Meter Authority
- **Telemetry requirements: 6 second telemetry basepoints and real time aggregated operational data**

DER Real-Time Operations



Bid/Schedule/Notify Obligation (Only for Capacity): Aggregations must bid energy, schedule bilateral transactions, or notify outages.



Energy Market: Aggregations are dispatch-only and respond to 6-sec basepoint signals



Ancillary Services: If qualified, provide Regulation &/or Operating Reserves.



Outage Reporting: Aggregators report planned outages before Day-Ahead Market and forced outages in Real-Time.

Aggregation System

- **The NYISO Aggregation System is a secure online platform used for administration of the NYISO's DER & Aggregation Participation Model**
- **It is used by:**
 - DER Aggregators – enroll and manage Aggregations on behalf of customers
 - NYISO – reviews enrollments and administers market participation
 - Distribution Utilities – review DER enrollments to ensure safety and reliability, as applicable

Order No. 2222 Compliance

Order 2222 Compliance

- **The NYISO is targeting Order 2222 implementation in early 2027**
- **Outstanding compliance obligations include:**
 - Duplicative service compensation prohibition
 - 60-day requirement for DU Review
 - Ancillary Services Flexibility for Aggregations, including implementation of an Operating Reserve Limit (“ORL”)
 - Allowing Aggregations of one injecting facility

Useful Resources

- **NYISO Services Tariff**
- **Aggregation Manual**
- **ICAP Manual**
- **Aggregation System User Guide**
- **Online Learning – NYISO**

Questions? Contact: stakeholder_services@nyiso.com & DER@nyiso.com

Our Mission and 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?