

Distributed Energy Resources

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Overview

- **FERC issued an order on April 15, 2024 accepting the outstanding components of the NYISO's Distributed Energy Resources (DER) participation model**
 - The DER participation model became effective on April 16, 2024
 - The NYISO currently anticipates that the Day-Ahead Demand Response Program (DADRP) and Demand Side Ancillary Services Program (DSASP) will be sunset approximately 12 months after initial implementation of the DER participation model
- **The initial modeling principles are a set of guidelines for Aggregations in the DER participation model**
 - Thresholds and other specific details will be addressed once data is available for Aggregations.
- **The goal of this presentation is to present a final set of initial modeling principles for Aggregation market participation models (i.e., DER Aggregations and Single Resource Type Aggregations)**
 - The NYISO presented preliminary modeling considerations for Aggregations in the DER participation model at the 4/3/2024 ICS meeting

Aggregations

- **DER Aggregation: Consisting of only Demand Side Resources (DSRs)**
 - Aggregation must consist of 1 or more DSR DER
 - No DER in the aggregation can inject into the grid, load reduction only
- **DER Aggregation: Mix of Generators, Energy Storage Resources (ESRs), and DSRs**
 - Aggregation must consist of 2 or more Resource Types (i.e., Generator, ESR, DSR)
 - Capable of injection and/or load reduction
- **Single Resource Type Aggregation: Consisting of one type of Resource (i.e., Generator, ESR, wind, solar, landfill gas)**
 - Does not include DSR
 - Capable of injection and/or withdrawal

Summary of Proposed Modeling Principles

- **Modeling Principle 1: Combine single resource type aggregations that have energy duration limitations and DER Aggregations (DSR only or mixed generations) into one unit by zone, technology type and duration limitation**
 - Modeled in GE MARS as ‘EL3’ resource type, except for aggregations of ESRs which would be modeled in GE MARS using the existing energy storage (ES) resource type
- **Modeling Principle 2: Combine single resource type aggregations without energy duration limitations by zone and technology type**

Proposed Modeling Principle 1:

For DER “DSR Only Aggregations”

- **Model DSR only aggregations as energy limited resources (ELRs) by zone and duration limitation**
 - Currently, DSRs participating in the Special Case Resource (SCR) program are modeled using the enhanced ELR functionality in the Emergency Operating Procedure (EOP) Steps
 - Certain characteristics of what is modeled currently is specific to the SCR program and will not be available or necessary if these resources become DER, such as:
 - Hourly response rates
 - A 7-hour duration limitation
 - Limit to one call per day
 - The closest modeling technique to how they are modeled now is to model them as an ‘EL3’ resource in GE MARS
- **Example: all DSR only Aggregations located in Load Zone A and subject to a 4-hour duration limit would be modeled as a single ELR with duration limit of 4 hours in Load Zone A**

Proposed Modeling Principle 1:

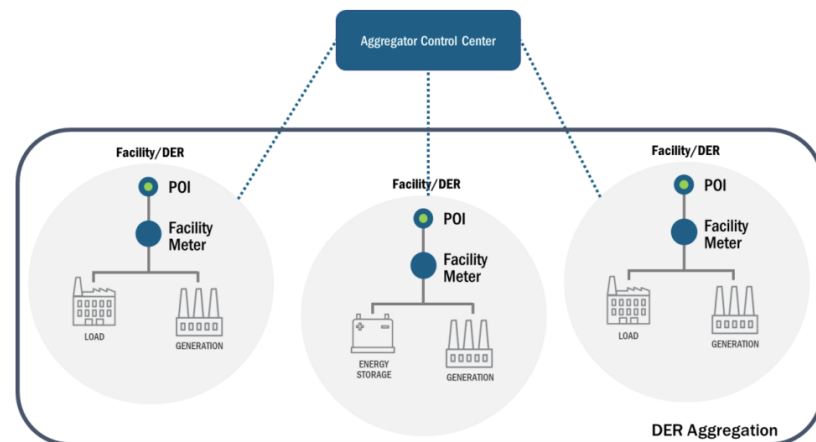
For “Single Resource Type Aggregations”

■ Energy Storage Resources

- Model ESR aggregations by zone and duration limitation
- Example: all ESR Aggregations subject to a 4-hour duration limit located in Load Zone A would be modeled as a single ESR with duration limit of 4 hours in Load Zone A

Proposed Modeling Principle 1:

- For DER “Mixed Generation Aggregations”, model as an ELR
 - There are many possible combinations for this mixed type aggregation.
 - Data will be coming in at an aggregation level and will not be broken down into the different facilities.
 - It is likely that most of these DERs will include a DSR or ESR
 - Therefore, modeling as an ELR is a reasonable approach



An Aggregation that includes more than one Resource type (heterogenous) or only Demand Side Resources is a “DER Aggregation.”

Proposed Modeling Principle 2:

For “Single Resource Type Aggregations”

■ Intermittent Power Resources

- Combine each aggregation by zone and technology type
 - Solar generation,
 - Wind generation, or
 - Landfill gas plants
- Example: all wind Aggregations located in Load Zone A, would be modeled as a single wind unit in Load Zone A

■ Thermal Generators

- Combine generator Aggregations without energy duration limitations by zone as a single unit
- Example: all generator Aggregations, located in Load Zone A, with no duration limitations, would be modeled as a single generator in Load Zone A

2025-2026 Capability Year

- **NYISO proposes to not model any potential enrollments of expected DERs for the 2025-2026 installed reserve margin (IRM) study.**
 - Existing resources transitioning into DER, or new resources enrolling into the DER participation model would not be modeled explicitly as DER in the 2025-2026 IRM study.
 - Given the timing and steps of the DER enrollment process, it is unclear whether sufficient certainty regarding enrollments of DER for next summer will be attained by the time the Final Base Case (FBC) assumptions are finalized for the 2025-2026 IRM study.

2026-2027 Capability Year

- **During the 2026-2027 IRM study cycle, the NYISO proposes that resources enrolled as DER be included within the IRM study based on the ICS approved modeling for DER**
 - Two potential options currently being considered for determining DER to model:
 - Utilize a process similar to SCRs which assumes the same enrollment as the prior summer (i.e., DER enrolled for summer 2024 would establish the resources to model for the 2026-2027 IRM study), or
 - Consider existing DER enrollment at the time of the Preliminary Base Case (PBC) and FBC to inform quantity of DERs to be included in the model
 - It will be necessary to monitor existing SCRs and/or Emergency Demand Response Program (EDRP) resources switching to DER to help avoid any potential for double counting participation in the IRM study model

Beyond the 2026-2027 Capability Year

- As more DERs participate in the capacity market and operational data becomes available, NYISO can review performance data to inform future modeling in the IRM study

Timeline and Deliverables

Milestone	Date
Present Scope to ICS	01/30/2024
Initial research on DER Characteristics and Expected Market Behavior	02/27/2024
Discussion on Modeling Considerations	04/03/2024
Conclusion and Recommendation	05/01/2024

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