

# FERC Order No. 2222



## Participation of Distributed Energy Resource (DER) Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators

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Federal Energy Regulatory Commission



# What is Order No. 2222?

Order No. 2222 enables distributed energy resources (DERs) to participate alongside traditional generation resources in the regional organized wholesale markets through aggregations.

Impact of DER participation in wholesale markets:

- **Enhance competition by** opening markets to new sources of energy and grid services
- **Lower cost by reducing** congestion and congestion costs during peak load conditions
- Provide increased **grid flexibility and reliability**

172 FERC ¶ 61,247  
DEPARTMENT OF ENERGY  
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 35

[Docket No. RM18-9-000; Order No. 2222]

Participation of Distributed Energy Resource  
Aggregations in Markets Operated by Regional  
Transmission Organizations and Independent System  
Operators

(Issued September 17, 2020)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Federal Energy Regulatory Commission (Commission) is amending its regulations to remove barriers to the participation of distributed energy resource aggregations in the capacity, energy, and ancillary service markets operated by Regional Transmission Organizations and Independent System Operators (RTO/ISO).

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# Why is Order No. 2222 Needed?

- Barriers to new emerging technologies like DERs can emerge when the rules governing participation in wholesale markets are designed for traditional resources and in effect limit the services that emerging technologies can provide.
- Order No. 2222 found existing market rules are unjust and unreasonable in light of barriers that they present to the participation of DERs in the RTO/ISO markets.

DERs tend to be **too small** to meet the minimum size requirements to participate in the RTO/ISO markets on a stand-alone basis, and may be unable to meet certain qualification and performance requirements.

Existing wholesale market rules that do allow for DER participation often require those resources to **participate as demand response**, which limits their operations and the services that they are eligible to provide.

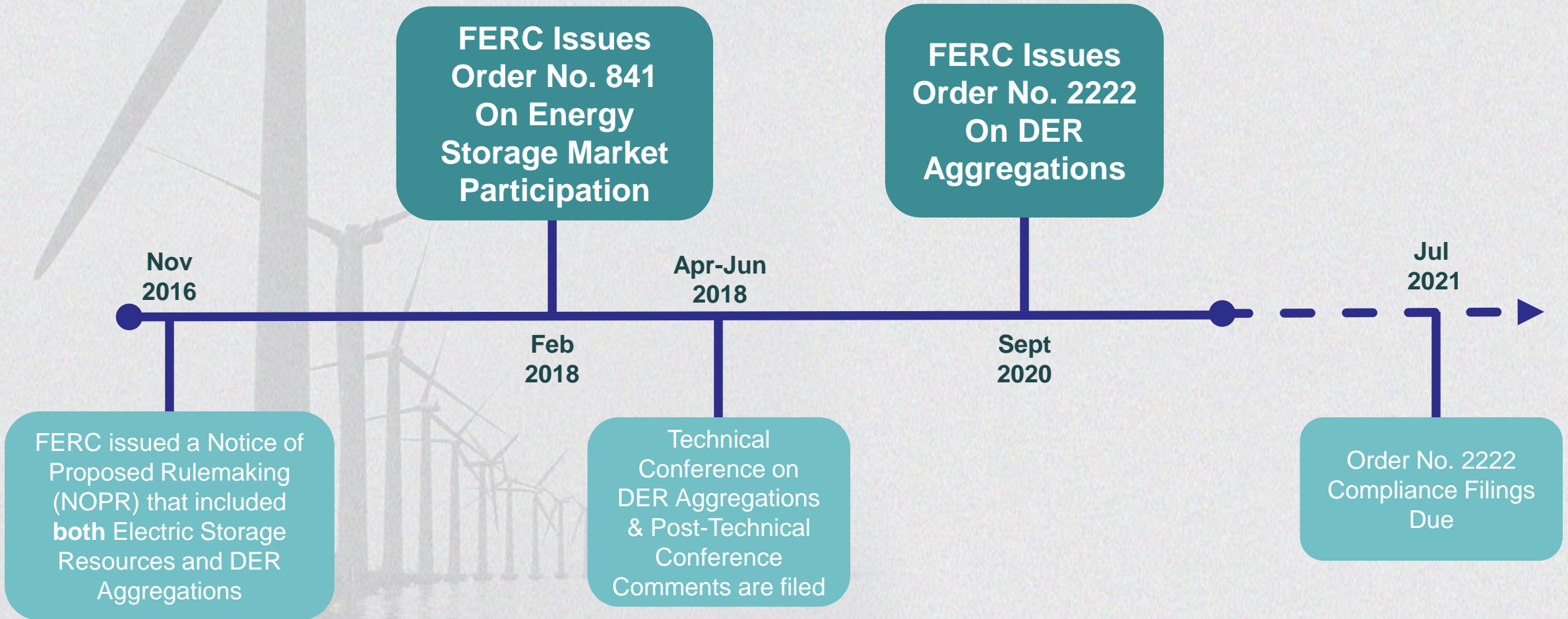


# How did Order No. 2222 Eliminate Barriers?

- Finds that DERs that are **technically capable** of providing some services in the wholesale market are precluded from competing with resources that are already participating in the RTO/ISO markets
- Allows several individual DERs to **aggregate** in order to satisfy minimum size and performance requirements that each may not be able to meet individually
- Requires each RTO/ISO to revise its tariff to ensure that its market rules **facilitate the participation of DER aggregations**



# How Did We Get Here?





# Order No. 2222's Definition of DERs

- DERs are small-scale power generation or storage technologies (typically from 1 kW to 10,000 kW) that can provide an alternative to or an enhancement of the traditional electric power system.
- The DERs may include electric storage, distributed and intermittent generation, demand response, energy efficiency, thermal storage, or electric vehicles and their charging equipment.
- DERs can be located on an electric utility's distribution system, a subsystem of the utility's distribution system, or behind a customer meter.
- DER aggregator is "the entity that aggregates one or more DERs for purposes of participation in the capacity, energy and/or ancillary service markets" of the RTOs/ISOs.

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**The DER aggregator is the RTO/ISO market participant, not the individual DER**



# FERC Jurisdiction

- Commission exercises jurisdiction over the **sales by DER aggregators** into the RTO/ISO markets.
  - Individual DER participation in a DER aggregation would not cause that **individual resource** to become subject to requirements applicable to Commission-jurisdictional public utilities.
- The Final Rule declines to include a mechanism for all state and local regulators to prohibit all DERs from participating in the RTO/ISO markets through DER aggregations, otherwise known as an opt-out.
  - Nothing in Order No. 2222 preempts the right of states and local authorities to regulate the **safety and reliability** of the distribution system.
- The Final Rule establishes an opt-in mechanism for small utilities (4 million MWh or less).



# DER Interconnection Jurisdiction

- **State or local law** will govern distribution-level interconnections for individual DERs participating in RTO/ISO markets exclusively through an aggregation.
  - The Commission declines to exercise jurisdiction over the interconnection of a DER to a distribution facility when that resource interconnects for the purpose of participating in RTO/ISO markets **exclusively through a DER aggregation.**



# Rules for the RTO/ISOs

- For each RTO/ISO, tariff provisions addressing DER aggregations must:
  - Allow **DER aggregations to participate directly** in RTO/ISO markets and establish DER aggregators as a type of market participant;
  - Allow DER aggregators to register DER aggregations under one or more participation models that **accommodate the physical and operational characteristics** of the DER aggregations;
  - Establish a **minimum size requirement** for DER aggregations that does not exceed 100 kW.



# Rules for Size, Type, and Location of DERs

- **Aggregation size:** Minimum size requirement for DER aggregations can be no more than 100 kW. Rule does not adopt a maximum size for a DER aggregation.
- **Individual DER size:** Rule does not adopt a minimum or maximum size of an individual DER that can participate in an aggregation, but each RTO/ISO must propose a maximum size for individual DERs.
- **Type of DERs:** Heterogeneous aggregations (aggregations containing different DER types) must be allowed. Single resource aggregations will be allowed.
- **Location of DERs:** To address whether DERs in an aggregation can be located at different pricing nodes, the rule required each RTO/ISO to propose locational requirements that are "as geographically broad as technically feasible."



# Rules for Participating in Retail Programs

- RTOs/ISOs must allow **dual participation** in retail programs.
  - RTOs/ISOs must allow DERs to provide **multiple** wholesale services.
  - RTOs/ISOs must include any appropriate restrictions on the DERs' participation in RTO/ISO markets through aggregations, if narrowly designed to **avoid double-counting the services** provided by DERs in RTO/ISO markets.
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- **State and local regulators** are able to condition a DER's participation in a retail DER program on that resource not also participating in the RTO/ISO markets.



# Rules for DER Aggregators

- The DER aggregator **must register** with the RTO/ISO as the market participant, and is the single point of contact for the RTO/ISO.
- The DER aggregator is responsible for **managing, dispatching, metering, and settling** the individual resources in their aggregation.
- The DER aggregator must include a **list of the individually participating DERs** to the RTO/ISO, as well as other information deemed necessary by the RTO/ISO.



# Open Requirements for RTOs/ISOs

On compliance, RTOs/ISOs must address:

- **Distribution factors and bidding parameters** for DER aggregations;
- **Information and data requirements** for DER aggregations;
- **Metering and telemetry requirements** for DER aggregations;
- **Coordination** with the DER aggregator, the distribution utility, and the relevant electric retail regulatory authorities;
- **Modifications** to the list of resources in a DER aggregation; and
- **Market participation agreements** for DER aggregators.



# Thank You

Q&A