



FERC Order 2222

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PJM Interconnection

Allows DER aggregations to participate in PJM wholesale markets, where technically capable, taking into account physical and operational characteristics.

“Distributed energy resource” or **“DER”** is “any resource located on the distribution system, any subsystem thereof or behind a customer meter.” (114)

“[t]hese resources may include, but are not limited to, electric storage resources, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment.” (114)

“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.” (118)

Order 2222 directs changes to allow aggregations of distributed energy resources (DER) to participate in PJM wholesale markets.

Jurisdiction & Interconnection

Addressing state and FERC jurisdiction over DER and DER aggregations for interconnection, operations and market participation

Operations

Ensuring the operational viability of DER aggregations in the wholesale market; taking into account locational, sizing and data requirements to uphold reliability

Market Design

Allowing DER aggregations to participate in the wholesale markets (capacity, Energy & ancillary services), where technically capable

Settlements

Accounting for settlement of DER aggregations providing both retail and wholesale services and preventing any “double counting” activities

Coordination

Defining a coordination framework between PJM, utilities and RERRA; managing distribution and transmission safety & reliability

DERA Jurisdiction & Interconnection	Operations	Market Design	Settlements	Coordination
<ol style="list-style-type: none">1. Interconnection2. Market participation agreements3. Opt-in for small utilities	<ol style="list-style-type: none">1. Locational requirements2. Distribution factors3. Telemetry4. Operational needs	<ol style="list-style-type: none">1. Market participation model2. Type of technology (homogenous / heterogeneous)3. Bidding parameters4. Min./Max. size requirements	<ol style="list-style-type: none">1. Metering configuration2. Settlement requirements3. Double counting services4. Use case development	<ol style="list-style-type: none">1. DER registration2. EDC coordination3. Modification to list of resources

PJM's proposal for the DER aggregation model in response to FERC Order 2222 was guided by the following principles:

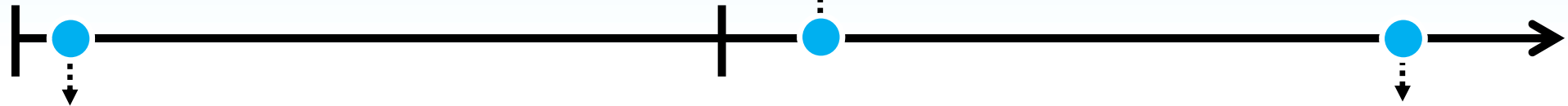
- Removing barriers to market entry for DER
- Maintaining or enhancing system reliability
- Respecting state jurisdiction
- Upholding parity between market participation models where applicable
- Seeking a simple implementation that may evolve over time



Order 2222 Compliance to Date

In September 2020, FERC issued Order 2222 directing all ISOs/RTOs to open their markets to aggregations of DER.

Compliance to Date:



March 1, 2023: FERC responded and sent PJM back to the drawing board on a number of issues.

Feb. 2, 2022: PJM detailed its plan to comply with Order 2222 in a filing to FERC.

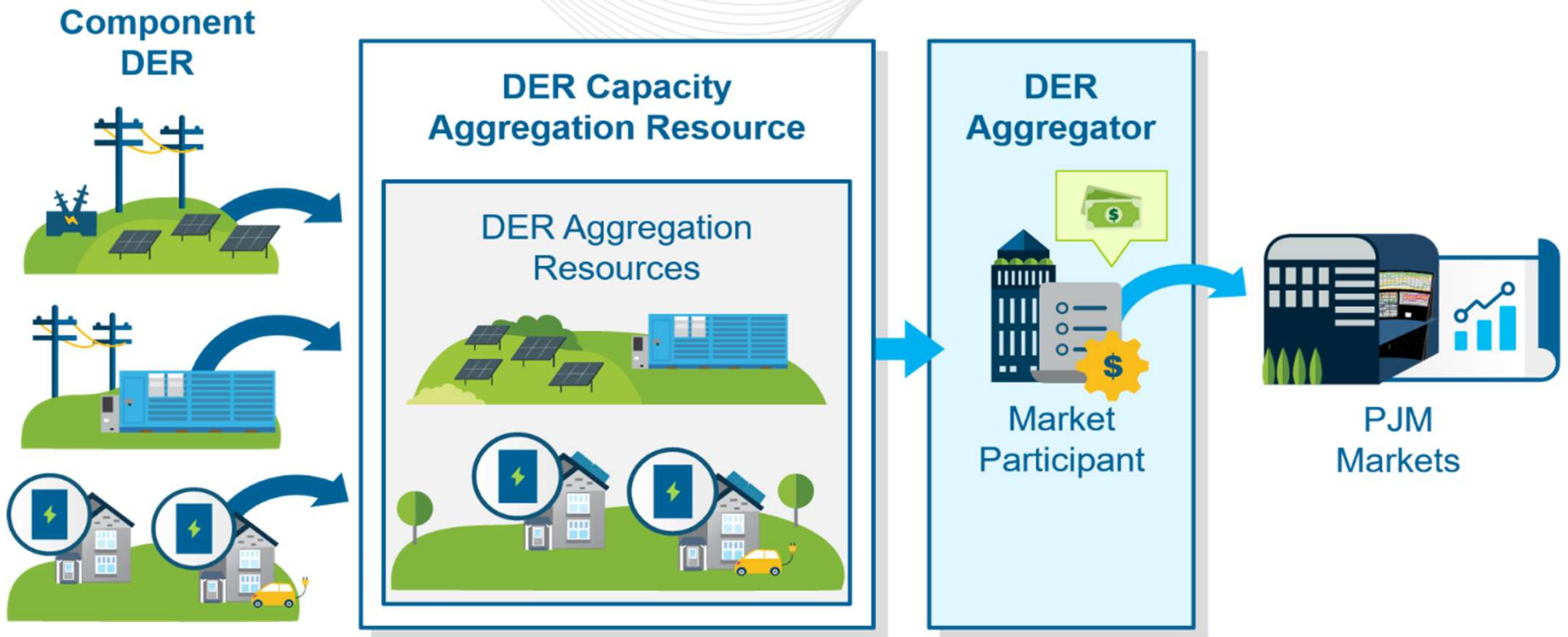
Sept. 1, 2023: PJM filed its revised compliance plan and is waiting for FERC Order.

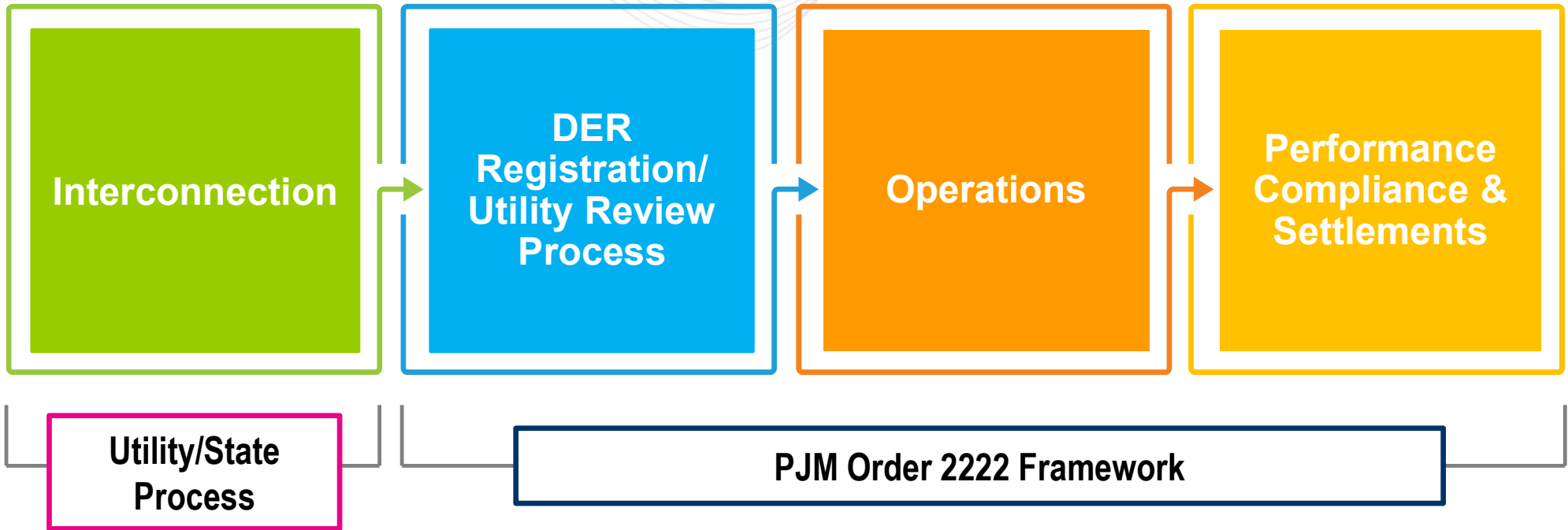
Proposed Implementation Dates:

- **Capacity:** July 1, 2024, for the 2026/2027 BRA
- **Energy/Ancillary Services:** Feb. 2, 2026

Subject to FERC Order approving PJM's compliance filing

PJM DER Aggregation (DERA) Model Framework







Component DER Registration Process

State Initiation

60-Day Registration

PJM Approval Window

DER customers obtain local IA*

15 DAYS

Component DER submitted by DERA

CompDER certification

DERA to submit certified component DER(s) on registration

45 DAYS

EDC reliability review

15 DAYS

PJM approves/denies registration; applies prode

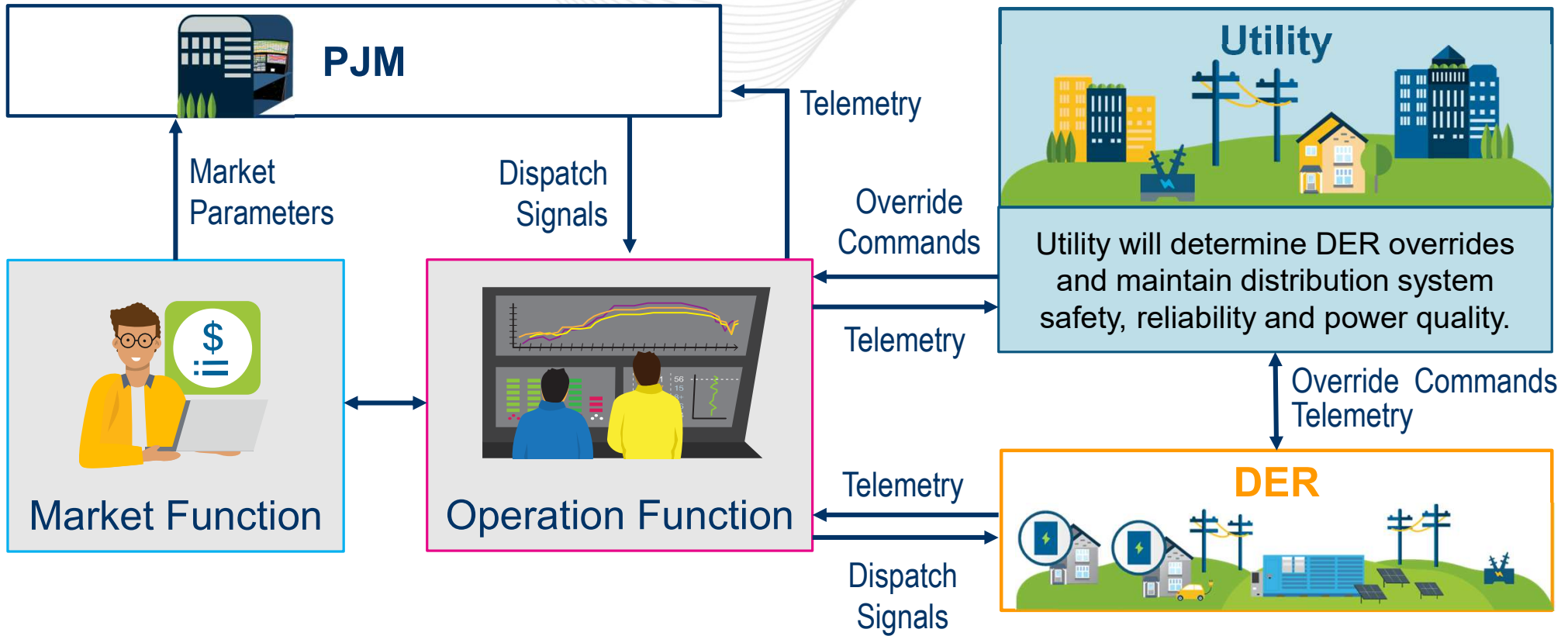
□ PJM and □ EDC notified

□ PJM and □ EDC verify certain data; EDC provides transmission node

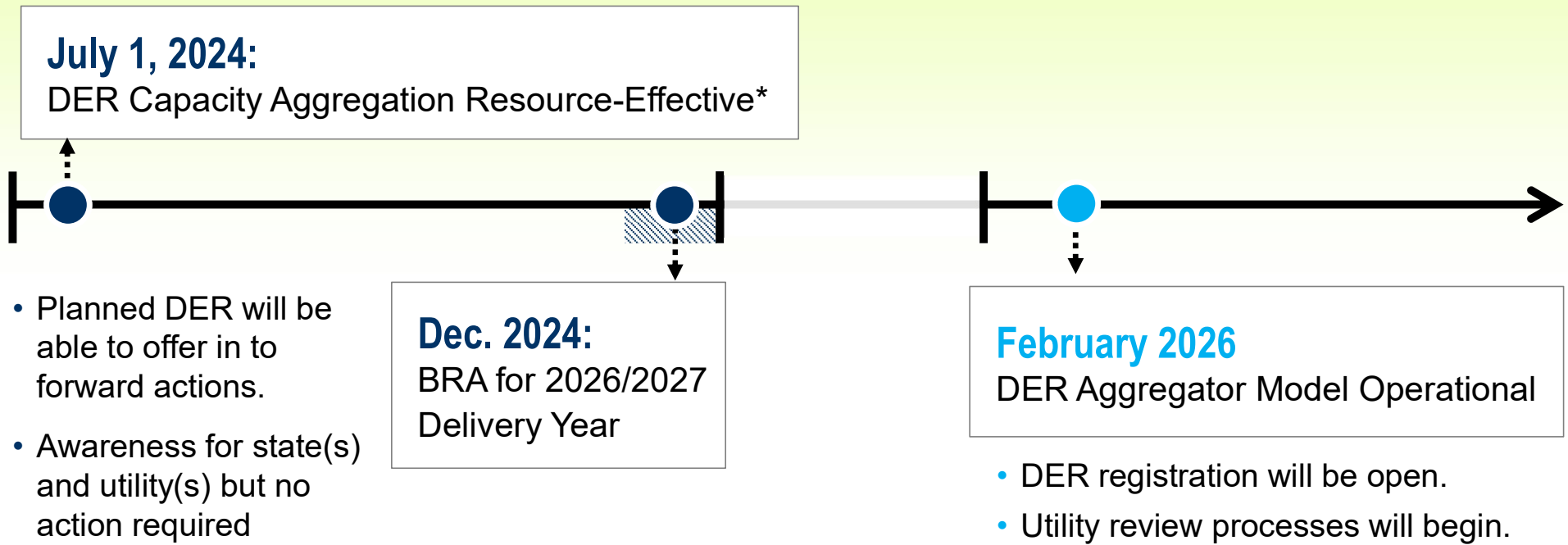
□ EDC to perform any necessary reliability studies for DER aggregation resources' market participation; provides recommendation to PJM

□ PJM □ EDC □ DERA

*if required by state/local utility



Predicated on Timely Order From FERC



*Proposed Effective Date (subject to May 2024 filing)