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FERC Amends Regulations to Remedy Barriers to Energy Storage Participation in Wholesale Electricity Markets; Saves Distributed Energy Reform for a Later Date

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Although similar reforms for distributed energy resources (DERs) were proposed in FERC's November 17, 2016, Notice of Proposed Rulemaking (NOPR)—which we outlined here—FERC declined to initiate those reforms now in order to develop a more comprehensive record. As such, the Commission initiated two separate proceedings[2] focusing on DER aggregations and "technical considerations of the bulk power system" (i.e., issues relating to resilience and reliability), which kicks off with a two-day technical conference on April 10-11, 2018.

Four of five FERC commissioners issued separate statements supporting the Final Rule, all of whom cited the critical role that energy storage can play in ensuring a more flexible, reliable, and low-cost grid.[3] With a clear path for participation in the wholesale markets, FERC's reforms are a win for not only energy storage providers, but also for renewable developers, since storage plus renewable projects can help to mitigate the oversupply of renewable capacity in certain RTO/ISO markets.

Background

The Commission's attention to energy storage follows the evolving market for and recognition of the critical role that energy storage will play in "accommodat[ing] the ever-increasing demand for clean, renewable resources," as Commissioner Richard Glick explains. States such as California, Massachusetts, and New York, for example, have set storage targets to assist with the rapid deployment of renewable resources under their decarbonization plans.[4] However, the wholesale markets, with the exception of the California Independent

System Operator (CAISO) and PJM Interconnection (PJM), have largely remained on the sidelines in addressing this trend. As such, FERC's energy storage reforms are, in part, an effort to cement into place the "remarkable trajectory" of energy storage deployment.[5]

At its core, though, the Final Rule is an effort by the Commission to ensure just and reasonable rates. As the Commission explains, current RTO/ISO market rules were designed long before the advent of advanced energy storage resources, such as batteries and flywheels. In certain markets, for example, narrowly defined participation models force storage resources to participate as only demand response, which restricts these resources from "employ[ing] their full operational range, prohibit[s] them from injecting power onto the grid, and preclude[s] them from providing certain services that they are technically capable of providing (such as operating reserves)." As a result, FERC notes, energy storage has been unable to compete with existing resources in the market, thereby reducing market efficiency and "potentially leading an RTO/ISO to dispatch more expensive resources to meet its system needs." By removing these barriers to participation in the Final Rule, the Commission thus seeks to enhance competition and "help to ensure that the RTO/ISO markets produce just and reasonable rates."

Energy Storage Participation Model

The Final Rule requires that each RTO/ISO revise its tariff to establish a participation model for energy storage. Although deference is provided to each RTO/ISO to implement the technical considerations given the distinct differences between their markets, such as minimum qualification criteria, the Final Rule specifies that each RTO/ISO participation model must demonstrate the following:

- Eligibility to Provide All Capacity, Energy, and Ancillary Services – The Commission requires each regional participation model to include market rules that ensure that energy storage is eligible to provide any energy, capacity, or ancillary services it is "technically capable of providing"(i.e., meeting the RTO/ISO's technical, operational and/or performance requirements for such services). Importantly, by establishing a distinct participation model for energy storage, the Commission specifies that energy storage resources should not be precluded from participating in existing models (e.g., demand response) for which they qualify.
- Ability to Set Wholesale Prices as Both a Buyer and a Seller – To ensure that market prices better reflect the value of energy storage when it is the marginal resource, each participation model is required to include rules that ensure that energy storage will set

the market clearing price both when it is a buyer (charging) and a seller (discharging). To set wholesale prices, the Commission requires that energy storage resources be available as a "dispatchable" resource by the RTO/ISO in accordance with "their most economically efficient use."

- Account for Physical and Operational Characteristics – In the NOPR, the Commission proposed to require that each participation model include certain mandatory bidding parameters specific to energy storage. In the Final Rule, however, FERC states that a uniform set of bidding parameters may not serve as the best means for accounting for the physical and operational characteristics of energy storage, given the unique differences between RTO/ISO markets. Instead, the Commission provides RTOs/ISOs with the flexibility to account for the following characteristics, whether through bidding parameters or other means: (i) state of charge, (ii) maximum state of charge, (iii) minimum state of charge, (iv) maximum charge limit, (v) maximum discharge limit, (vi) minimum charge time, (vii) maximum charge time, (viii) minimum run time, (ix) maximum run time, (x) minimum discharge limit, (xi) minimum charge limit, (xii) discharge ramp rate, and (xiii) charge ramp rate.
- Minimum Size Requirements – Participation models are required to establish a minimum size requirement that does not exceed 100 kW.
- Pricing of Sales to Energy Storage – The Final Rule requires each RTO/ISO to revise its tariff to specify that sales of energy from the RTO/ISO market to energy storage, which are then resold to the market, must be at the wholesale locational marginal price.

DER Aggregations and Bulk Power System Resiliency

While the Commission recognizes the importance of removing barriers to DER aggregations in the wholesale markets, it finds that more information is needed. This inquiry begins with a two-day technical conference in April, which, as Commissioner Cheryl LaFleur details, will explore a broad set issues falling into two categories: (i) an understanding of just and reasonable payment options for DERs that operate at both the wholesale and retail levels, and (ii) operational coordination between transmission and distribution control centers in deploying DERs.

The latter set of issues falls into the Commission's ongoing conversation on grid resiliency. As FERC staff highlights in a report issued concurrently with the Final Rule, "increasing DER capacity, if not properly accounted for, could cause reliability concerns for the bulk power

system." The technical conference's second day will thus focus on issues related to DER installation data, system modeling and planning, and coordination.

What's Next?

The Final Rule is effective June 4, 2018; please insert this citation as a footnote after the semicolon: Elec. Storage Participation in Mkts. Operated by RTOs and ISOs, 83 Fed. Reg. 9,580 (Mar. 6, 2018); RTO/ISO compliance filings amending their market rules are due 270 days after the effective date, with implementation of those rules to take place within one year of their compliance filings. Given such a lengthy implementation period, energy storage providers and stakeholders should closely follow the RTO/ISO forums seeking to implement the Final Rule, as each grid operator will approach its revisions with attention to its distinct market operations.

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[1] As amended by the Final Rule, FERC's regulations at 18 C.F.R. § 35.38(b) will define an "electric storage resource" as "a resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid."

[2] *See* Docket Nos. RM18-9 and AD18-10.

[3] *See* Statements of Commissioners Cheryl A. LaFleur, Robert F. Powelson, Richard Glick and Neil Chatterjee.

[4] *See* Peter Maloney, *FERC order opens "floodgates" for energy storage in wholesale markets*, Utility Dive (Feb. 20, 2018), https://www.utilitydive.com/news/ferc-order-opens-floodgates-for-energy-storage-in-wholesale-markets/517326/.

[5] *See* Statement of Commissioner Richard Glick.

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