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# FERC Issues Final Rule on Electric Storage Participation in Organized Markets

On Thursday, February 15, the Federal Energy Regulatory Commission (FERC or the Commission) issued a final rule on electric storage participation in markets operated by Regional Transmission Organizations (RTO) and Independent System Operators (ISO) (Order No. 841), designed to facilitate participation by energy storage resources in RTO/ISO markets. Order No. 841 adopts, in part, reforms first introduced in a Notice of Proposed Rulemaking (NOPR) released in November 2016. Notably, the Order does not adopt the NOPR's proposed reforms related to distributed energy resource (DER) aggregations, instead instituting a new rulemaking proceeding and technical conference (Docket No. RM18-9) to gather additional information to help the Commission determine what action to take with respect to DER aggregation.

Recognizing that market rules that fail to appropriately compensate storage resources for their unique market contributions represent a barrier to broader energy storage development, Order No. 841 requires each RTO/ISO to revise its tariff to establish a participation model consisting of market rules that appropriately incentivize development of electric storage resources. The new regulations require RTO/ISO tariffs to:

1. ensure that electric storage resources are eligible to provide all capacity, energy and ancillary services that they are technically capable of providing;
2. ensure that electric storage resources can be dispatched and can set the wholesale market clearing price as both wholesale sellers and wholesale buyers, consistent with rules that govern the conditions under which a resource can set the wholesale price;
3. account for the physical and operational characteristics of electric storage resources through bidding parameters or other means; and
4. establish a minimum size requirement for participation of no more than 100 kW.

**Electric Storage Resource Definition**

The definition of "Electric Storage Resource" in Order No. 841 is reasonably broad: "a resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid." According to the Commission, this definition is intended to cover electric storage resources capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid, regardless of the storage medium (e.g., batteries, flywheels, compressed air, pumped hydro). Furthermore, the definition includes resources located on the interstate transmission system, on a distribution system or behind the meter. Notably, this definition excludes behind-the-meter resources that do not inject electricity back onto the grid, such as certain demand response resources used only for load reduction.

**Tariff Reforms**

The new regulations set forth in Order No. 841 establish minimum requirements for new market rules but do not impose a one-size-fits-all approach. Those minimum requirements include:

- Each RTO/ISO's tariff must define the criteria that a resource must meet to use the participation model for electric storage resources. Those criteria must be based on the physical and operational characteristics of electric storage resources and must not limit participation to any particular type of electric storage resource or other technology.

- Each RTO/ISO must propose any necessary additions or modifications to its existing tariff provisions to specify (1) whether resources that qualify to use the participation model for electric storage resources will participate in the RTO/ISO markets through existing or new market participation agreements and (2) whether particular existing market rules apply to resources participating under the electric storage resource participation model.

The requirement that each RTO/ISO establish market rules to ensure that electric storage resources are eligible to provide all capacity, energy and ancillary services that they are capable of providing is in addition to, and not in lieu of, any pre-existing RTO/ISO standard set of technical requirements that all resources must meet to provide a given service; those requirements would also apply to a resource using the electric storage resource participation model if it wants to provide that service. New tariff changes must also allow electric storage resources to de-rate their capacity to meet minimum run-time requirements (e.g., a 10 MW/20 MWh electric storage resource may de-rate to offer 5 MW of capacity into a capacity market with a four-hour minimum run time).

The new regulations' requirement that tariffs ensure that electric storage resources can be dispatched and can set the wholesale market clearing price as both wholesale sellers and wholesale buyers is an effort to improve opportunities for electric storage resources to participate as both wholesale sellers of services and wholesale buyers of energy. The new regulations therefore require that each RTO/ISO allow electric storage resources to be dispatched as supply and demand. Furthermore, Order No. 841 requires that (1) resources using the participation model for electric storage resources must be able to set the price in the capacity markets, where applicable; (2) RTOs/ISOs must accept wholesale bids from resources using the participation model for electric storage resources to buy energy; and (3) resources using the participation model for electric storage resources must be allowed to participate in the RTO/ISO markets as price takers, consistent with the existing rules for self-scheduled resources. In order to avoid any operational uncertainties or reliability concerns, the new rules require each RTO/ISO to implement market rules that prevent conflicting dispatch signals in the same market interval.

Overall, these new rules are designed to remove barriers to entry for electric storage resources. Resource owners/operators using the participation model for electric storage resources must be able to self-manage the state of charge of their resources, thereby allowing those resources to optimize their operations. The obligation that tariffs also have a minimum size requirement of *no more* than 100 kW is designed to broaden eligibility for more electric storage resources, which are often relatively small.

**Compliance Timeline**

Recognizing the significant work required of RTOs/ISOs to implement these rules, the Commission provides 270 days for each RTO/ISO to file any necessary tariff changes and an additional 365 days beyond that for implementation of the tariff provisions.

**DER Aggregation Rulemaking**

Separate from the reforms set forth in Order No. 841, the Commission announced that it will hold a technical conference on April 10-11, 2018 (Docket No. RM18-9). That technical conference will gather additional information to help the Commission determine what action to take on DER aggregation reforms and will explore issues related to the potential effects of DERs on the bulk power system. Panel topics include:

- Economic Dispatch, Pricing and Settlement of DER Aggregations
- Discussion of Operational Implications of DER Aggregation with State and Local Regulators
- Participation of DERs in RTO/ISO Markets
- Collection and Availability of Data on DER Installations
- Incorporating DERs in Modeling, Planning and Operations Studies
- Coordination of DER Aggregations Participating in RTO/ISO Markets
- Ongoing Operational Coordination

**Conclusion**

Order No. 841 represents an important step in the integration of electric storage resources into the markets administered by the RTOs/ISOs. While the Final Rule provides general direction to RTOs/ISOs on how to modify their respective tariffs, significant work must be done to develop appropriate tariff provisions that afford electric storage resources comparable access to the capacity, energy and ancillary services markets. If you need further assistance in interpreting or shaping these rules or would like to be involved in either ongoing proceeding, please reach out to any of us.

Additional resources:

Press release

Staff presentation

Statement from LaFleur

Statement from Chatterjee

Statement from Powelson

Statement from Glick

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