Kilpatrick

Insights: Alerts

FERC Proposes Rule to Open Up Wholesale Markets to Energy Storage and Distributed Energy Resource Aggregations

DECEMBER 20, 2016 Written by

On November 30, 2016, the Federal Energy Regulatory Commission (FERC) published a proposed rule in the *Federal Register* that would allow energy storage and distributed energy resource aggregations to participate in organized wholesale markets run by Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs). The rule would break down longstanding barriers to participation due to outdated tariff provisions and technical standards, and would open up new market opportunities for a broad range of energy storage and distributed energy resources.

Background

In addition to wholesale energy and capacity markets, RTOs and ISOs operate markets for a variety of ancillary services, such as frequency control, reactive power and voltage control, and operating reserves. Many energy storage resources are technically capable of providing ancillary services, which can not only secure additional revenue streams for projects, but also enhance the resilience, reliability and efficiency of the electric grid. However, the rules of most RTOs/ISOs permit storage resources to participate in these markets only in limited ways, if at all.

Realizing the need to facilitate storage resources' participation in wholesale markets, FERC has already taken some steps to adapt its rules to allow energy storage integration. In FERC Orders 719 and 745, issued in late 2008 and early 2011 respectively, FERC required wholesale market operators to receive demand response bids from aggregators of electricity consumers and compare the price paid to demand response providers for conserving energy to the price paid to energy producers. Energy storage providers were indirect (but intended) beneficiaries of these rules, offering services that support more competitive and economical demand response services.

Despite these steps taken by FERC, energy storage resources remain disadvantaged relative to energy producers with which they may compete to offer services. This is due in part to RTO/ISO rules that do not fully value the range of services that can be provided by energy storage resources.

The proposed new rule identifies two principal ways in which RTO/ISO rules currently limit storage resources' participation in ancillary services markets. First, their available "participation models"—the tariff provisions that define how different kinds of resources with particular physical and operational characteristics can participate in wholesale markets—do not reflect the actual characteristics of energy storage resources, largely because these tariff provisions predate the development of cost-effective energy storage technologies. Consequently, storage resources may participate in wholesale markets (if at all) under models that do not reflect the full range of their capabilities. For instance, storage resources in some RTOs/ISOs have chosen to participate as demand response

resources, not because those participation models accurately capture the characteristics of storage resources and the services they can provide, but because of the lack of any better alternatives. This severely limits those storage resources' ability to participate in some wholesale markets, including ancillary services markets. Second, RTOs/ISOs' technical requirements for providing particular services (again, developed before the advent of new energy storage technologies) focus primarily on procuring these services from generating assets such as natural gas fired power plants and may disqualify some storage resources from participating in markets in which they are physically and operationally capable of participating.

The Proposed Energy Storage Rule

The proposed rule would require each RTO and each ISO to revise its tariff to establish a participation model for energy storage resources that recognizes the physical and operational characteristics of electric storage resources and accommodates their participation in organized wholesale electric markets. Although RTOs/ISOs would enjoy considerable flexibility to design the new participation models, FERC proposes to establish certain minimum requirements. For example, new participation models would be required to ensure that storage resources are eligible to provide all capacity, energy and ancillary services that they are technically capable of providing, and must incorporate bidding parameters that reflect and account for their physical and operational characteristics. Recognizing that some RTOs/ISOs effectively suppress energy storage participation by imposing relatively high minimum capacity requirements, FERC also proposes to require that minimum size requirements for participation of storage devices be no greater than 100 kW.

The new participation models also must ensure that storage resources are dispatched more efficiently and are capable of setting wholesale market clearing prices as both sellers and buyers. In addition, RTOs/ISOs' models must specify that energy sold to energy storage resources on organized wholesale electric markets and subsequently resold by electric storage resources to the wholesale electric markets (also known as "sale for resale") must be priced at the wholesale locational marginal price (LMP). These last two requirements rely in part on FERC's conclusion that it has supervisory jurisdiction over certain energy sales *to* storage resources (which in some instances could otherwise be considered retail sales and thus outside FERC's jurisdiction). This will allow energy storage resources to buy power at more attractive wholesale rates instead of higher retail rates set by local load serving entities.

Distributed Energy Resource Aggregations

The proposed rule also would require RTOs/ISOs to revise their tariffs to allow distributed energy resource aggregations (DERAs) to more fully participate in wholesale markets. FERC defines a "distributed energy resource" as a source or sink of power that is located on the distribution system or behind a customer meter, such as storage batteries, distributed generation, thermal storage, and electric vehicles and supply equipment.

From a physical and operational standpoint, distributed energy resources are capable of participating in wholesale markets in a variety of ways, including but not limited to generation, storage, and demand response. Distributed energy resources are generally too small to participate directly in the organized wholesale electric markets on a stand-alone basis but, when aggregated, can meet the minimum size and performance requirements for market participation. However, current market participation models generally do not accommodate DERAs' participation in wholesale markets. This change will allow distributed energy resources to attract more value in competitive markets, which will in turn support a faster scaling of behind-the-meter storage systems.

FERC proposes to require RTOs/ISOs to define a new type of market participant, "distributed energy resource aggregators," that can participate in the organized wholesale electric markets under the participation model that best accommodates the physical and operational characteristics of their aggregated resources. RTOs/ISOs would not need to create new participation models, but could modify existing models to allow DERAs to participate.

The proposed rule is not as prescriptive with regard to DERA tariff provisions as it is with new energy storage provisions, but does specify a number of issues that must be addressed in new DERA-related provisions. These include locational requirements, distribution factors and bidding parameters, information and data requirements, metering and telemetry system requirements, and market participation agreements for DERAs.

It will likely be some time before the proposed rule is fully implemented by RTOs and ISOs (comments are due on January 30, 2017). Nevertheless, the proposed rule is a huge milestone in FERC's long-term effort to bring regulatory requirements, including RTO and ISO tariffs, in line with new and emergent energy technologies. When implemented, these rules will be instrumental in opening up significant new market opportunities for energy storage and distributed energy resources, and further promoting the deployment of these new and developing technologies.

Of course, significant deployment of energy storage systems requires more than innovative tariff models. Substantial technology risks associated with most battery systems and accompanying software remain a deterrent to many private-sector funding sources. Facing this reality, further federal and state efforts (such as the energy storage investment tax credit, recently proposed in S. 3159, and state renewable portfolio standards mandating larger energy procurement from energy storage resources) are necessary to position this important industry on a path to wide-scale success.