

**UNITED STATES OF AMERICA  
BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION**

Electric Storage Participation in Markets  
Operated by Regional Transmission  
Organizations and Independent System  
Operators

Docket Nos. RM16-23-000  
AD 16-20-000

**COMMENTS OF THE INDEPENDENT ENERGY PRODUCERS ASSOCIATION ON  
ELECTRIC STORAGE PARTICIPATION IN MARKETS OPERATED BY REGIONAL  
TRANSMISSION ORGANIZATIONS AND INDEPENDENT SYSTEM OPERATORS**

The Independent Energy Producers Association (IEP) is pleased to provide comments on the Commission's Notice of Proposed Rulemaking (NOPR), issued on November 17, 2016, regarding Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators.<sup>1</sup>

**I. COMMUNICATIONS**

Communications in connection with this filing should be addressed to:

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<sup>1</sup> 157 FERC ¶ 61,121 (2016).

## **II. OVERVIEW OF IEP**

The Independent Energy Producers Association (IEP) is a nonprofit public benefit corporation formed under the laws of the State of California to encourage the development and use of independent electric supply resources. Its members own and operate roughly 20,000 megawatts of electric generation capacity in California. IEP has been representing the interests of the developers and operators of renewable and other independent electricity generation resources before the Commission, other agencies, the California Legislature, and the courts since 1982.

## **III. BACKGROUND**

On June 6, 2016, IEP submitted comments to the Commission in Docket No. AD 16-20-000 related to Electric Storage Participation in Regions with Organized Wholesale Electric Markets.<sup>2</sup>

On November 17, 2016, the Commission indicated its intent to amend its regulations under the Federal Power Act (FPA) to remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the capacity, energy, and ancillary services markets operated by regional transmission organizations (RTO) and independent system operators (ISO) associated with organized wholesale markets. The Commission proposes to (1) establish a participation model consisting of market rules that, recognizing the physical and operational characteristics of electric storage resources, accommodates their participation in organized wholesale markets and (2) define distributed energy resource aggregators as a type of market participant that can participate in the organized wholesale markets under the participation

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<sup>2</sup> Electric Storage Participation in Regions with Organized Wholesale Electric Markets, Docket No. AD16-20-000, Comments of the Independent Energy Producers Association, June 6, 2016.

model that best accommodates the physical and operational characteristics of its distributed resource aggregation.

In response to the NOPR, IEP provides these comments related to storage resources and their integration into organized RTO/ISO markets, to supplement our comments previously filed in AD16-20-000.

#### **IV. COMMENTS OF IEP**

The Commission has established a goal of ensuring that electric storage resource are eligible to provide all capacity, energy, and ancillary services that they are technically capable of providing in the organized wholesale markets.<sup>3</sup> Recognizing the unique operating characteristics of electric storage resources, the NOPR proposes to develop a participation model for electric storage resources in organized wholesale electric markets that accommodates the unique operating characteristics of this resource. Moreover, the NOPR proposes to define distributed energy resource aggregators as a type of market participant that can participate in organized wholesale markets under a participation model that best accommodates the physical and operating characteristics of distributed energy resource aggregation. The NOPR defines an electric storage resource as a resource capable of receiving electric energy from the grid and storing it for later injection back to the grid.<sup>4</sup> The NOPR defines distributed energy resources as a source or sink of power that is located on the distribution system, any substation thereof, or behind the meter.<sup>5</sup> The NOPR would impose wholesale Locational Marginal Pricing (LMP) on a

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<sup>3</sup> 157 FERC ¶ 61,121 at P 4.

<sup>4</sup> 157 FERC ¶ 61,121 at P 1, n.1.

<sup>5</sup> 157 FERC ¶ 61,121 at P 1, n.2.

sale for resale.<sup>6</sup> Moreover, any participation agreement should enable electric storage resources to self-manage their state of charge and upper and lower charge limits.<sup>7</sup> Importantly, in an effort to ensure that there is no duplication of compensation, distributed resources participating in any retail compensation program, *e.g.*, Net Energy Metering, would not be eligible to participate in the organized wholesale electric markets as part of a distributed energy resource aggregation.<sup>8</sup>

IEP concurs with these goals. We view the overall proposed approach as similar to that afforded intermittent resources (*e.g.*, wind, solar) in organized wholesale markets, which have unique operating characteristics as well. On the other hand, we note that storage resources are different from intermittent resources and pose some compelling issues that must be addressed as part of finalizing a participation model. Fundamentally, because of the unique behind-the-meter and disaggregated qualities associated with storage, the storage participation model (and associated RTO/ISO Participation Agreements) should impose reasonable performance obligations comparable to those imposed on other resources participating in organized markets. A comparable performance obligation would include, for example, ensuring that storage and aggregated resources are subject to similar penalties for non-performance, schedule deviations, and replacement obligations, etc., as faced by other resources participating in organized wholesale markets.

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<sup>6</sup> 157 FERC ¶ 61,121 at P 28.

<sup>7</sup> 157 FERC ¶ 61,121 at P 69.

<sup>8</sup> 157 FERC ¶ 61,121 at P 134.

IEP concurs that the participation model should enable RTOs/ISOs to establish locational boundaries within which aggregated distributed energy resources must be confined.<sup>9</sup> The locational boundary, however, should be a single pricing node such as developed by the California ISO (*e.g.*, the sub-LAP) in order to ensure integrity in market outcomes and create a barrier to “gaming” of market prices by resources that are uniquely able to aggregate their presence across a broad geographic area. This approach will help ensure that aggregated distributed resources are not able to “cherry-pick” pricing points in organized wholesale markets.

IEP supports the Commission’s efforts to focus the participation model on those services that storage resources are capable of providing in organized wholesale markets. However, as discussed more fully below, integrating storage resources, particularly storage resources located behind the meter (BTM), raises a number of issues and concerns. The jurisdictional boundaries between wholesale and retail activities increasingly are blurred in the context of BTM storage resources, which are positioned to simultaneously consume power (retail activity) while in the same scheduling interval deliver power for resale (wholesale activity). The blurring of boundaries across these functions and activities risks a host of unintended consequences in policies and programs (*e.g.*, double-counting, double-compensation), and this blurring of functions and activities risks adverse impacts on wholesale markets. Because of this reality and risk, the Commission must use the NOPR to establish minimum metering and/or telemetry standards for RTO/ISO tariffs.

Each of these issues is discussed more fully below.

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<sup>9</sup> 157 FERC ¶ 61,121 at P 139.

### **A. Retail and Wholesale Boundaries**

The Commission must address the boundary lines between retail and wholesale in order to provide a measure of transparency and regulatory certainty to market participants. Fundamentally, at what point does the Commission's jurisdiction over wholesale markets terminate and the states' jurisdiction over retail sales (*e.g.*, station service) commence? What will be the form of participation in wholesale markets for storage and aggregated distributed resources? Historically, resources participating in organized wholesale markets have been categorized as electrical corporations, electric wholesale generators (EWGs), and/or Qualifying Facilities (QFs). Do these models apply and, if not, what model will apply? The Commission should use the NOPR to clarify the boundary between retail consumption and wholesale sales with regard to storage resources and aggregated resources. This clarity is needed to ensure transparency in markets and create the conditions for storage and aggregated resources to participate in those markets to their fullest technical capability consistent with governing tariffs.

### **B. BTM Storage and Distributed Resources**

The NOPR defines an electric storage resource as a resource capable of receiving electric energy from the grid and storing it for later injection back to the grid.<sup>10</sup> The NOPR defines distributed energy resources as a source or sink of power that is located on the distribution system, any substation thereof, or *behind the meter*.<sup>11</sup> Storage resources located in front of the meters are easily identified; they have operated in wholesale markets for a long time, and their interaction with organized markets can be readily metered. On the other hand, resources located

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<sup>10</sup> 157 FERC ¶ 61,121 at P 1, n.1.

<sup>11</sup> 157 FERC ¶ 61,121 at P 1, n.2. Emphasis added.

behind the meter are positioned to seamlessly participate across the boundary between retail and wholesale at will, yet these resources typically are opaque to grid operators.

The fact that BTM resources can essentially “toggle” across the retail and wholesale jurisdictional divide raises a number of questions regarding market transparency and comparable treatment. For example, if a BTM storage device is charging from the electric grid, how can the Commission determine whether the discharge is essentially retail in nature, *i.e.*, it is consumed for the purpose of running the air conditioning of the dwelling, or it is essentially wholesale, *i.e.*, a sale for resale? Similarly, if the storage device is charging for multiple use applications, including the charging of an electric vehicle for purposes of transportation, how will the grid operators, policymakers, and market participants appreciate the multiple uses and allocate their costs and benefits appropriately?

The NOPR must address how the Commission will distinguish (and measure) retail vs. wholesale activities with regard to BTM resources. This task is essential in order to ensure transparency in both the retail and wholesale markets. Moreover, it is critical to ensuring that resources are not double-counted for purposes of compensation, meeting resource adequacy requirements, and comparability.

### **C. Metering/Telemetry Standards**

The Commission has recognized the importance of establishing market rules related to information and data requirements as well as establishing metering and telemetry requirements for distributed energy resource aggregations.<sup>12</sup> While the Commission is not proposing to prescribe specific metering and telemetry systems for distributed aggregated resources, the

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<sup>12</sup> 157 FERC ¶ 61,121 at P 5.

Commission does propose to require each RTO/ISO to revise its tariff to identify any necessary metering and telemetry requirements.<sup>13</sup>

IEP urges the Commission to adopt minimum standards for metering and telemetry of storage resources and aggregated distributed resources, particularly for those located behind the meter. In this regard, revenue quality “dual-metering” should be required to ensure overall market integrity and grid reliability and to minimize the risk of double-counting and double-compensation. Alternative techniques, (*e.g.*, estimation, sampling, etc.) are inaccurate by definition and, therefore, insufficient. Without proper metering of retail (consumption,) and wholesale (sale for resale), station service netting protocols become difficult if not impossible to police, and the principle of comparable treatment of competitive wholesale resources becomes opaque.

Overall, minimum dual-metering requirements and telemetry standards will help meet broader objectives of the Commission, including minimizing cost shifting, maintaining grid reliability, affording comparable treatment, and ensuring open, fair, wholesale markets. Dual metering minimum standards will not interfere with the primary goal of enabling storage and aggregated distributed resources to provide all the products they are technically capable of providing in organized wholesale electric markets.<sup>14</sup> Moreover, to the extent that imposing a dual-metering standard increases the transaction costs of BTM resources seeking to engage in both retail and wholesale activities, the burden on commercial viability should not stand in the way of the necessity of developing standards that reinforce the reliability of the electric grid and the efficient and transparent operation of organized wholesale markets.

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<sup>13</sup> 157 FERC ¶ 61,121 at P 151.

<sup>14</sup> 157 FERC ¶ 61,121 at P 48.

V. **CONCLUSION**

The Commission properly is moving forward on a path to enable the participation of storage and aggregated distributed resources in wholesale markets. IEP applauds this path. We are concerned that this path can lead to unintended, negative consequences given the technical ability of these resources, particularly behind-the-meter resources, to operate simultaneously across retail and wholesale domains. Accordingly, the Commission should use the participation model to impose minimum metering and telemetry standards on RTO/ISO tariffs that will ensure accurate and reliable data associated with the activities of behind-the-meter storage resources and aggregated distributed resources.

Respectfully submitted,

A handwritten signature in black ink that reads "Steven Kelly". The signature is written in a cursive style with a large, looping flourish at the end.

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February 13, 2017

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of the *Comments of the Independent Energy Producers Association on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators* on the official service list compiled by the Secretary in Docket Nos. RE16-23-000 and AD16-20-000.

Executed on February 13, 2017, at San Francisco, California.

  
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Brian Cragg