

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

Electric Storage Participation in Markets :  
Operated by Regional Transmission : Docket No. RM16-23-000  
Organizations and Independent System :  
Operators :

Electric Storage Participation in Regions : Docket No. AD16-20-000  
with Organized Wholesale Electric Markets :

---

**COMMENTS  
SUBMITTED ON BEHALF OF  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

---

February 13, 2017

# TABLE OF CONTENTS

## Page

INTRODUCTION AND BACKGROUND .....	1
DISCUSSION.....	2
A.    General Remarks .....	2
B.    Wholesale Market Participation Models .....	4
C.    Jurisdiction .....	5
D.    Compensation Eligibility and Bidding Parameters .....	7
E.    Implementation.....	9
CONCLUSION .....	11
CERTIFICATE OF SERVICE.....	12

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

Electric Storage Participation in Markets :  
Operated by Regional Transmission : Docket No. RM16-23-000  
Organizations and Independent System :  
Operators :

Electric Storage Participation in Regions : Docket No. AD16-20-000  
with Organized Wholesale Electric Markets :

---

**COMMENTS  
SUBMITTED ON BEHALF OF  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

---

**INTRODUCTION AND BACKGROUND**

On November 17, 2016, the Federal Energy Regulatory Commission (the Commission) issued a Notice of Proposed Rulemaking (NOPR) to amend its regulations under the Federal Power Act to remove barriers to the participation of electric storage resources and distributed energy resource (DER) aggregators in the capacity, energy and ancillary service markets operated by regional transmission organizations (RTOs) and independent system operators (ISOs). Among other things, the NOPR recognizes the need to enable storage resources to participate in the organized wholesale electric markets to the extent that they are technically capable of doing so, based on rules that take into account their unique characteristics. Current tariffs based on market rules designed for other types of resources limit participation of electric storage resources and lead to ineffi-

cient use of resources. Similarly, the NOPR points out that DER aggregators may be able to offer a fuller spectrum of products and services in wholesale electric markets than tariffs currently allow.

The Commission proposes to require RTOs/ISOs to revise their tariffs to establish participation models for electric storage resources and DER aggregators that recognize and accommodate their physical and operational characteristics with appropriate tariff revisions in the wholesale electric market.

The Public Utilities Commission of Ohio (PUCO) respectfully submits the following comments in support of efforts to remove barriers to wholesale market participation for electric storage resources and DER aggregators.

## **DISCUSSION**

### **A. General Remarks**

The PUCO applauds the Commission's initiative to remove barriers in the RTO/ISO organized wholesale markets to participation by electric storage resources and DER aggregators. The Commission's recognition that emerging technologies can contribute more fully to a competitive and fully functioning marketplace is timely. We agree with the Commission that "effective integration of electric storage resources into the organized wholesale electric markets would enhance competition and, in turn, help to

ensure that these markets produce just and reasonable rates.”<sup>1</sup> For DER aggregators, current restrictions can exclude resources as too small to participate in the market, constrain resources to participate solely as demand response resources and/or impose “prohibitively expensive or otherwise burdensome requirements.”<sup>2</sup>

The PUCO agrees that current tariffs in some RTO/ISOs do not fully contemplate the operational characteristics of storage and DER aggregators and limit the way those resources might participate in the organized wholesale market. As the Commission contemplates changes to facilitate the full participation of storage and DER aggregators in the wholesale market, the PUCO appreciates the Commission’s recognition of state authority over retail markets. Our federal system admirably takes into account state law, regulation and tariff oversight of all the elements of the distribution system. The PUCO notes the ways in which the Commission proposes to honor differences among states and to preserve the authority of states in matters pertaining to retail markets. Such prudence contributes to a well-functioning energy market that is at once complementary and interrelated.

---

<sup>1</sup> Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, Docket Nos. RM16-23-000, *et al.* (Notice of Proposed Rulemaking at ¶ 13) (Nov. 16, 2016).

<sup>2</sup> NOPR at ¶ 14.

## **B. Wholesale Market Participation Models**

The PUCO supports the Commission's efforts to require participation models for electric storage and DER aggregators in the organized wholesale market under RTO/ISO tariffs and market rules. Products provided by these resources will offer supply and demand options that are not widely available. RTO/ISOs will have a greater ability to manage the operations of the bulk power system with a diverse set of resources operating under the same tariff requirements. The PUCO agrees with the Commission's statement that newer technologies like electric storage resources are "...capable of faster start up times and higher ramp rates than traditional synchronous generators and are therefore able to provide ramping, spinning, and regulating reserve services without already being online and running."<sup>3</sup>

The PUCO believes that customers, in turn, will have a greater opportunity to manage their demand for electricity while realizing economic benefits. Electric storage resources and DER aggregators will likely develop new and innovative ways to incent customer participation in wholesale markets for potential economic benefits. On the retail level, the PUCO has begun a grid modernization inquiry that will consider the reliability, environmental, economic and other benefits for the consumers in our state.

---

<sup>3</sup>

NOPR at ¶ 50.

### C. Jurisdiction

As stated previously, the PUCO appreciates the NOPR's delineation between wholesale and retail activities, especially in instances where a customer uses a behind-the-meter generator in conjunction with a storage device.<sup>4</sup> Furthermore, we strongly agree with FERC's proposal "...to limit the participation of resources in the organized wholesale electric markets through a distributed energy resource aggregator that are receiving compensation for the same services as part of another program."<sup>5</sup> These proposals are appropriate and essential to maintaining the current jurisdictional boundaries between state and federal authority over wholesale and retail competitive markets.<sup>6</sup>

Accordingly, the PUCO has authority to review and approve tariffs regarding electric storage and DERs pursuant to Ohio law. The PUCO reviews net-metering tariffs from Ohio's electric distribution utilities (EDUs) pursuant to Ohio Revised Code 4928 and Ohio Administrative Code 4901:1-10-28. The Ohio net-metering requirements allow electric utility customers to utilize interconnected generating equipment that is sized primarily to offset part or all of their electricity requirements through kilowatt-hour

---

<sup>4</sup> NOPR at ¶ 102.

<sup>5</sup> *Id.* at ¶ 134.

<sup>6</sup> Ohio is a retail choice state for electricity pursuant to Ohio Revised Code § 4928.03.

(kWh) credits. Currently, net metering customers in Ohio are not reimbursed for distribution, transmission, or ancillary services.<sup>7</sup>

Furthermore, the PUCO generally has jurisdiction over distribution-level interconnection processes both in front of and behind the meter pursuant to 4901:1-22 of the Ohio Administrative Code. Each EDU in the state of Ohio is required to maintain PUCO-approved tariffs that include the contractual guidelines, administrative procedures and technical requirements for distribution-level interconnection service on a first-come, first-served basis.<sup>8</sup>

In compliance with the Public Utilities Regulatory Policies Act (PURPA),<sup>9</sup> the PUCO has ratemaking authority over the purchase and sale of energy and/or capacity between a Qualifying Facility (QF) and an EDU. Chapter 4901:1-10-34 of the Ohio Administrative Code establishes a market-based rate for the EDUs' QF purchase obligation under PURPA. PURPA establishes that the state regulatory authority is to review rates for sales provided to QF.<sup>10</sup>

The net metering, QF, and distribution level interconnection rules and tariffs are properly under the jurisdiction of the state of Ohio and the PUCO. The requirements set

---

<sup>7</sup> Ohio's net metering rules are currently under review in PUCO Case No. 12-2050-EL-ORD, *In the Matter of the Commission's Review of Chapter 4901:1-10 Ohio Administrative Code Regarding Electric Companies*.

<sup>8</sup> Ohio Adm. Code 4901:1-22-02(B).

<sup>9</sup> Public Utility Regulatory Policies Act of 1978, as amended by the Energy Policy Act of 2005 (PURPA), at 16 U.S.C.S. Section 824a-3.

<sup>10</sup> PURPA, Subpart C, § 292.305.



the standards for the participation of these resources by retail customers in Ohio. The PUCO will continue to review and approve the retail tariffs consistent with Ohio laws and regulation regardless of the Commission's initiatives in the organized wholesale market.

#### **D. Compensation Eligibility and Bidding Parameters**

The PUCO concurs that all energy and capacity sales that are transacted for the purpose of wholesale (i.e. sales-for-resale) should be compensated at the appropriate wholesale market price.<sup>11</sup> The PUCO supports the NOPR's requirement to ensure that electric storage and DER aggregators can set the wholesale market clearing price as both a wholesale seller and wholesale buyer. We also agree with the NOPR that an electric storage resource or a DER aggregator should be allowed to set the clearing price in the organized wholesale electric market if, and only if, its resource is available to the RTO/ISO as a dispatchable resource.

The PUCO agrees with the NOPR that each RTO/ISO should revise its tariff to include the various bidding parameters that would account for the different physical and operational characteristics of electric storage resources and DER aggregations. This would include a state-of-charge bidding parameter as well as the maximum energy charge and discharge rates. Of course, any resource that deviates from an agreed upon dispatch schedule should be subject to the same penalties as any other resource providing that same wholesale service.

---

<sup>11</sup> NOPR at ¶ 100.

The NOPR seeks comments on whether there should be a mechanism that identifies bids and offers coming from the same resource, and ensures that the price for the offer to sell is not lower than the price for the bid to buy during the same market interval.<sup>12</sup> The PUCO recommends that the Independent Market Monitor or Market Monitoring Unit in each RTO/ISO review all buy bids and sell offers in its organized wholesale market. This review would include a market power review to confirm that a resource is appropriately providing a marginal cost-based bid into the markets consistent with current requirements.

Finally, the PUCO posits there is an exception to the NOPR's requirement not to pay twice for the same energy. An electric storage battery providing frequency regulation service may be called by the RTO/ISO to take withdrawals, as well as provide injections, depending on the correction needed to maintain the desired frequency on the bulk power system. A customer may be compensated for taking withdrawals and subsequently receive compensation for injecting energy the next day from energy stored the previous day. Under this scenario, it could be perceived that the customer would be paid twice for the same energy in the organized wholesale market. The PUCO believes that it would be acceptable for the customer to be paid the appropriate wholesale rate twice, because the customer is essentially providing two different wholesale services at two different times.

---

<sup>12</sup>

NOPR at ¶ 83.

## **E. Implementation**

The NOPR acknowledges that ongoing coordination among the RTO/ISO, DER aggregators, electric storage resources, and the relevant distribution utilities may be necessary to ensure that RTO/ISO dispatch of individual resources is consistent with the limitations of the distribution system.<sup>13</sup> The PUCO strongly agrees that implementation of proposals in this NOPR will require close planning and coordination of these parties with input from the Commission and state commissions.

The PUCO concurs with the NOPR that RTO/ISO tariffs must clearly outline the parameters for operating as a DER aggregator or an electric storage resource consistent with the NOPR's proposals.<sup>14</sup> Specifically, among other items, the NOPR proposes that the tariff set forth metering and telemetry system requirements. Additionally, the NOPR recommends that the tariff should allow participation that is as geographically broad as technically feasible.<sup>15</sup> In order to accommodate this requirement, the PUCO concurs that the relevant EDUs and the RTO/ISO need visibility into the location as well as the output, or distribution factor, at each pricing node where one or more aggregated resources is located.

Furthermore, the PUCO avers that retail customers would need to have the necessary metering capability for the RTO/ISOs and EDUs to be able to distinguish when a customer is providing generation for their own consumption versus when they are

---

<sup>13</sup> NOPR at ¶¶ 154, 155.

<sup>14</sup> *Id.* at ¶ 132.

<sup>15</sup> *Id.* at ¶ 139.

providing some type of service to the organized wholesale market. The PUCO recommends that Ohio's EDUs should continue to maintain the right to settle transactions that are retail in nature at the appropriate retail rate. Ohio's retail customers should not be given the ability to circumvent retail pricing when the end use consumption terminates with the customer. Additionally, Ohio's retail customers should not bear the costs of electric storage and DER aggregators' participation in organized wholesale market activities in other states through federally socialized costs.

The PUCO anticipates that an RTO/ISO, during its tariff development, will examine issues regarding standards for metering, telemetry and cybersecurity through its stakeholder process. The stakeholders and the RTO/ISO should also examine the resources' impact on the reliability of the bulk power system and the reliability of the distribution grid.<sup>16</sup>

Finally, the PUCO strongly supports the NOPR's proposed Market Participation Agreements between an RTO/ISO and a DER aggregator that defines the DER aggregator's roles and responsibilities. Importantly, FERC requires that the agreements include an attestation from the DER aggregator that its aggregation "is compliant with the tariffs and operating procedure of the distribution utilities and the rules and regulations of any other regulatory authority."<sup>17</sup> The PUCO believes that such an agreement is necessary and essential to maintaining state laws and tariffs. The PUCO appreciates the

---

<sup>16</sup> Ohio Adm. Code 4901:1-22-03, Industry Standards for Safety and Performance.

<sup>17</sup> NOPR at ¶ 157.

NOPR for recognizing the importance of this item as a prerequisite to participation by these resources.

## **CONCLUSION**

The PUCO thanks the Commission for its efforts to remove barriers in the organized wholesale electric markets and to enhance the competitiveness of the markets. We recognize the reciprocal relationship between the Commission and the states as we respectively oversee wholesale and retail markets, and appreciate the Commission's deference to states in matters pertaining to retail tariffs and the distribution system requirements for electric storage resources and DER aggregators. Likewise, we see the benefit of the Commission's initiative to adjust wholesale market conditions to enhance the competitive opportunities for emerging technologies. Together, the Commission and the states will recognize the benefits of grid modernization by removing barriers to new and innovative services and ensuring a robust wholesale electric marketplace.

Respectfully submitted,

/s/ Thomas W. McNamee

**Thomas W. McNamee**  
Public Utilities Section  
30 East Broad Street, 16th Floor  
Columbus, OH 43215  
614.466.4396 (telephone)  
614.644.8764 (fax)  
[thomas.mcnamee@ohioattorneygeneral.gov](mailto:thomas.mcnamee@ohioattorneygeneral.gov)

**Attorney for the  
The Public Utilities Commission of Ohio**

## **CERTIFICATE OF SERVICE**

I hereby certify that the foregoing have been served in accordance with 18 C.F.R. Sec. 385.2010 upon each person designated on the official service list compiled by the Secretary in this proceeding.

*/s/ Thomas W. McNamee*

**Thomas W. McNamee**

Dated at Columbus, Ohio this February 13, 2017

Submission ID 742703

Submission Description Comments submitted on behalf of the Public Utilities Commission of Ohio under RM16-23-000, et. al..

Submission Date 2/13/2017 9:34:14 AM

Filed Date 2/13/2017 9:34:14 AM

Current Status Pending

Dockets

Docket	Description	Applicant/Filer
RM16-23-000	Notice of proposed rulemaking	Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators
AD16-20-000	Electric Storage Participation in Regions with Organized Wholesale Electric Markets	Electric Storage Participation in Regions with Organized Wholesale Electric Markets

Files

Security Level	Filename
Public	Comments 021317.pdf

Filing Party/Contacts

Filing Party	Signer (Representative)	Other Contacts (Principal)
Public Utilities Commission of Ohio	thomas.mcnamee@ohioattorneygeneral.gov	lori.sternisha@puco.ohio.gov

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**2/13/2017 10:00:15 AM**

**in**

**Case No(s). 93-7000-EL-FAD**

Summary: Comments Comments submitted to the Federal Energy Regulatory Commission on February 13, 2017 by Thomas McNamee on behalf of the Public Utilities Commission of Ohio to be submitted in FERC Docket Nos. RM16-23-000 and AD16-20-000, In re Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators. electronically filed by Kimberly L Keeton on behalf of Public Utilities Commission of Ohio