

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

Electric Storage Participation	)	
in Markets Operated by	)	Docket No. RM16-23-000
Regional Transmission	)	Docket No. AD16-20-000
Organizations and Independent	)	
System Operators	)	

**COMMENTS OF THE ISO-RTO COUNCIL ON  
NOTICE OF PROPOSED RULEMAKING REGARDING  
ELECTRIC STORAGE RESOURCES AND  
DISTRIBUTED ENERGY RESOURCE AGGREGATIONS  
IN ORGANIZED WHOLESALE ELECTRIC MARKETS**

Pursuant to the Federal Energy Regulatory Commission’s (the “Commission” or “FERC”) Notice of Proposed Rulemaking issued on November 17, 2016,<sup>1</sup> the ISO-RTO Council (“IRC”)<sup>2</sup> respectfully submits these comments in response to the Commission’s proposal regarding electric storage resources and distributed energy resource (“DER”) aggregations in the capacity, energy, and ancillary service markets operated by regional transmission organizations (“RTO”) and independent system operators (“ISO”).<sup>3</sup>

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<sup>1</sup> *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice of Proposed Rulemaking, 157 FERC ¶ 61,121 (Nov. 17, 2016) (“NOPR”).

<sup>2</sup> The IRC comprises the Alberta Electric System Operator (“AESO”), California Independent System Operator Corp. (“CAISO”), Electric Reliability Council of Texas, Inc. (“ERCOT”), the Independent Electricity System Operator of Ontario, Inc. (“IESO”), ISO New England, Inc. (“ISO-NE”), Midcontinent Independent System Operator, Inc. (“MISO”), New York Independent System Operator, Inc. (“NYISO”), PJM Interconnection, L.L.C. (“PJM”), and Southwest Power Pool, Inc. (“SPP”). The AESO, IESO, and ERCOT are not subject to the Commission’s jurisdiction with respect to the matters addressed in this rulemaking and, therefore, do not join these comments.

<sup>3</sup> NOPR at P 1.

## **I. INTRODUCTION**

Members of IRC generally support the NOPR to remove barriers and better accommodate electric storage resources and DER aggregations in the wholesale electricity markets. These goals are a worthwhile endeavor. Allowing different types of resources of varying size and capabilities to participate in wholesale electricity markets, either directly or by aggregation, could create a more diverse, resilient, and competitive electric market.

As the IRC is made up of RTOs and ISOs that will be required to implement the many provisions of the NOPR, the IRC proposes below certain key modifications and revisions to be included in the Final Rule. The IRC has long recognized the important balance between deference to stakeholder processes versus obtaining enough clear guidance from the regulator to ensure those processes are appropriately oriented, can prove successful, and—at the end of the day—receive regulatory approval. The IRC’s comments contained herein reflect that balance, including the need to respect regional processes and timelines, while still seeking overall Commission guidance in certain key areas that should be incorporated into the Final Rule.

## **II. JURISDICTIONAL CONSIDERATIONS**

Jurisdiction is, by its nature, a fundamental legal issue that must be addressed as ISOs and RTOs establish programs to integrate electric storage resources and DERs into the wholesale markets. The IRC requests that FERC clarify where possible the boundary between state (retail) and federal (wholesale) jurisdiction. Doing so will provide necessary guidance to ISOs and RTOs as they develop the details of individual programs and help avoid conflicting approaches.

As part of this clarification, the IRC requests that FERC, working with the states, address the jurisdictional issues surrounding injection and charging functions of certain storage facilities. For example, one issue to be addressed is whether energy used to charge a battery (including energy lost to the efficiency of the battery) and that is drawn for the essential operation of the battery (such as the thermal regulation of the battery) should be considered a sale for resale and, therefore, a wholesale transaction. For the same reason, the Commission, working with the states, should clarify whether energy drawn for consumption (such as traditional station power usage) is more appropriately deemed not a sale for resale and, therefore, subject to a retail rate pursuant to state jurisdiction.

Moreover, clear rules will need to be established in circumstances where the use of the stored energy is unclear at the time of charging (e.g., an electric vehicle that may use the electricity for fuel or sell the electricity back into the wholesale markets). Outlining these jurisdictional lines early in coordination with the states can help parties avoid the jurisdictional issues that have resulted in litigation in the past, as the industry has witnessed with litigation over station power protocols for conventional generators.<sup>4</sup>

Additionally, the Commission should refrain from attempting, in the Final Rule, to make generic determinations on whether particular net metering programs fall on one side or the other side of the jurisdictional line. These are issues that must be examined in the context of individual state programs with both federal and state regulators using their respective authority in a coordinated manner to avoid double compensation based on the details of the particular retail program. The IRC urges the Commission, working with the

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<sup>4</sup> *Southern California Edison Co. v. FERC*, 603 F.3d 996 (2010).

states, to address these threshold jurisdictional and rate issues and set forth clear processes for resolution among regulators. This approach will avoid forcing RTOs and ISOs, already challenged with implementation issues, to make decisions on legal jurisdictional issues under the Federal Power Act or rate issues that are grounded in individual state laws and regulations.

The Commission states that “to ensure that there is no duplication of compensation, we propose that distributed energy resources that are participating in one or more retail compensation programs such as net metering or another wholesale market participation program will not be eligible to participate in the organized wholesale electric markets as part of a distributed energy resource aggregation.”<sup>5</sup> To the extent that a DER is capable of, and seeks to, provide a retail service at times when it is not providing a wholesale service, the Commission should permit multiple use applications. The IRC believes that the legitimate concerns about double compensation can be addressed under most conditions through metering and other real-time tools rather than the imposition of inflexible rules requiring the resource to dedicate itself to one use versus another; however, the IRC also recognizes the some of these scenarios may be very complicated to differentiate between wholesale and retail activity.

By extension, in order to provide guidance to the marketplace and to assist in the operation and administration of the final rule, the Commission should clarify that the RTOs and ISOs are not responsible for determining in what retail transactions each DER is engaged. Each RTO’s and ISO’s ability to prevent dual participation and double compensation is limited by the information provided by the distribution utility, DER, and

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<sup>5</sup> NOPR at P 134.

metering. As a result, it would not be feasible to expect an RTO or ISO to determine, let alone manage, a resource's participation in one market versus another in real-time operations.

### **III. PROPOSED RULES FOR ELECTRIC STORAGE RESOURCES AND METERING ISSUES**

#### *A. State of Charge Issues*

The IRC agrees with FERC's proposal requiring information about a battery's State of Charge ("SOC"). The IRC concurs the SOC must be telemetered to the ISO or RTO in real-time if required by telemetry rules that apply to other resources. The Final Rule should clarify, however, that storage resource owner should manage the resource's SOC. Under some expansive readings, the NOPR could be interpreted as requiring RTOs or ISOs to dispatch the electric storage resource hour-by-hour based on its specific SOC. The ISO's or RTOs' responsibility in this area should be limited to following reasonable operating parameters provided to it by the owner or aggregator of the electric storage resource, but not necessarily managing the resource for that owner or aggregator.

#### *B. Minimum Bid Parameters*

The IRC agrees with FERC's proposal to require that RTOs and ISOs incorporate bidding parameters, to be provided by the resources' owners, which account for the physical and operational characteristics of electric storage resources. In addition, the IRC agrees with the preliminary finding that the minimum parameters necessary for RTOs and ISOs to effectively dispatch electric storage resources are the maximum energy charge rate and maximum energy discharge rate. Those minimum parameters provide the ISOs and RTOs with information about the physical and operational characteristics of electric storage resources that establish their technical capability to provide the services they are

offering to provide. In some cases, however, the bidding parameters should be static and not subject to change through resource bids.

*C. Metering Requirements*

The IRC shares FERC's interest in delineating the rules for wholesale market transaction versus retail transactions. The IRC believes that metering arrangements and accounting practices under most conditions can adequately track transactions to determine whether they are wholesale or retail based on pre-defined criteria for making this distinction, especially where the necessary retail metering infrastructure exists. When a storage device or distributed energy resource that participates in the wholesale markets is located behind the meter of a retail customer, special metering arrangements and accounting practices are needed to separate wholesale from retail activities. But retail metering infrastructure, which is subject to state jurisdiction, may be insufficient to support the needed accounting practices to separate wholesale from retail activities. The Commission should acknowledge that ISOs and RTOs have no jurisdiction to compel state-regulated utilities to implement specific retail metering infrastructure.

The IRC also notes that wholesale metering rules for DERs must in all cases be met. Metering hardware that meets retail metering requirements may not meet wholesale requirements. For example, a lack of interval metering may be acceptable in certain instances at the retail level but would frustrate the appropriate netting of power for purposes of billing wholesale versus retail charges for resources that are participating in the wholesale markets. For these reasons, wholesale and retail metering requirements need to be harmonized so as to prevent impediments to the federal participation model or, on the other hand, to avoid setting metering policy across the board in a manner that may

potentially put the Commission in the anomalous position of setting metering requirements for service that is predominantly retail in nature. This harmonization should recognize that the metering requirements and costs for participation in the wholesale market are voluntary in nature and therefore should be borne only by those DER providers who choose to participate in the wholesale market. In this way, DER owners would bear the metering costs they are causing while they benefit from the revenue streams available to them in the wholesale market.

#### **IV. PROPOSED RULES FOR DER AGGREGATION**

##### *A. Relationship of DER Rules to Demand Response Rules*

FERC has required that ISOs and RTOs establish rules for the participation of demand response in wholesale markets. The IRC requests that FERC clarify that the NOPR does not contemplate or imply any proposed changes to existing demand response rules, although ISOs and RTOs are free to propose revisions to their existing demand response rules to comply with the Final Rule.

##### *B. Aggregation*

The proposed rule requires ISOs and RTOs to allow the participation of aggregated storage and DERs, which consist of multiple resources within a specified regional or electrical distance. The amount of megawatts to meet an individual minimum and maximum resource capacity requirement should not be mandated by FERC, but instead left to the requirements of the individual RTO or ISO that is managing congestion on its system.

C. *Locational Limitations on Aggregation*

FERC proposes to require ISOs and RTOs “to establish locational requirements for DERs to participate in a DER aggregation that are as geographically broad as technically feasible.”<sup>6</sup> This requirement strikes the appropriate balance between stating an important market principle for the accommodation of smaller DERs, and providing the necessary flexibility to ISOs and RTOs to implement feasible solutions given the physical and business constraints that are particular to each. The IRC supports allowing each ISO and RTO to establish reasonable, nondiscriminatory locational limitations that take into account disparate impacts of injections given its market design and the particular location and size of each of the aggregated resources. The IRC specifically suggests that the Commission not impose a requirement that ISOs and RTOs must accommodate an individual DER aggregation at more than one pricing node or interconnection point (or spanning multiple distribution utilities). In the NOPR, the Commission recognizes important reasons that RTOs and ISOs may limit aggregations to a single node or interconnection point, such as concerns about transmission constraints and price formation.<sup>7</sup> The IRC urges the Commission to carry this provision forward to the Final Rule by allowing each RTO and ISO to determine how best to apply geographic limitations on aggregation. Of course, these limitations can be reviewed in the future once further experience is gained with DER aggregations, but represent an appropriate starting point as RTOs and ISOs wrestle with the growth of behind the meter aggregated resources coming onto the grid and charging and discharging at an ever growing pace.

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<sup>6</sup> *Id.* at P 139.

<sup>7</sup> *See* NOPR at P 138.

*D. Coordination with Distribution Utilities*

The IRC supports coordination and communication between the ISOs and RTOs and the distribution utilities to review all resources in the DER aggregation portfolio to ensure safe and reliable interconnection and dispatch. This coordination could include an upfront review of resource specifications and requirements and how the resource operates individually and as part of an aggregated set of resources, and also could include the sharing of information on day-ahead schedules, real-time dispatch, and real-time constraints on the distribution system.

In establishing requirements, FERC should be mindful that distribution systems have a diversity of physical configurations, regulatory frameworks, and existing operational processes and infrastructure. Distribution utilities may or may not have distribution management systems that can assess the impact of DER dispatch on distribution system reliability, safety, and power quality, which may require restricting DER dispatch to protect the system. Such differences in system capabilities may require different types of coordination processes. FERC requirements in this regard should therefore be at a high-level only, in the domain of general principles, rather than specific details.<sup>8</sup>

The IRC requests the Commission to provide, as part of any Final Rule, more guidance as to the role of the Electric Distribution Company (“EDC”) in reviewing interconnection and coordination requests, and specific direction as to where and how disputes are to be resolved. The ISOs and RTOs should not be put in the middle of disputes between DER or energy storage resources and EDCs over whether or not to

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<sup>8</sup> See NOPR at PP 153-155.

accept a given interconnection, the impact of a given DER on the distribution grid, or both. Rather than simply requiring “coordination,” FERC should clearly define the respective roles of the ISOs and RTOs versus the EDCs, and include a framework for dispute resolution (including specification of who has authority to resolve such disputes as between the Commission and the states) to prevent unnecessary litigation. Finally, distribution interconnection studies should generally remain the responsibility of the distribution utility and not become the province of the RTOs and ISOs.

*E. Metering, Telemetry, and Settlements*

The IRC is supportive of defined metering and accounting practices for DER aggregations, which should be noted in accordance with each ISO’s or RTO’s tariff and other applicable governing documents as appropriate. Each ISO and RTO should be given the flexibility to determine where this information is defined, instead of uniformly requiring them to be defined in each ISO’s and RTO’s tariff. FERC should not be overly prescriptive with metering and telemetry requirements and should let each ISO and RTO develop reasonable and nondiscriminatory metering and telemetry requirements consistent with the requirements on generation of comparable size and location on the grid.

The IRC supports tariff revisions to require DER aggregators to retain individual resource performance aggregated settlement data for ISO and RTO settlement and audit purposes. To the extent that the NOPR is effectively creating a “right” of DERs to buy and sell power at wholesale, the Final Rule should specify the right of ISOs and RTOs to require metering and telemetry of similar quality to generation of a comparable size to avoid later disputes and problems with, inconsistent industry roll-out across the nation.

*F. Proposed Implementation Deadlines*

The IRC believes that the suggested deadline to develop and implement the proposed reforms within twelve months of the date of the ISOs' and RTOs' compliance filings is overly aggressive given the broad and far reaching scope of this NOPR, and the complexity and impacts of electric storage resources and DER aggregations, especially as applied to behind the meter distributed energy resources participating in the wholesale market other than as demand response. The implementation and the integration of DER aggregations will require extensive market rule revisions in the ISOs' and RTOs' tariff and manuals, internal procedures and software changes, which cannot feasibly be completed within a twelve-month period.

Additionally, each ISO and RTO is in varying stages of development and deployment of storage and DER resources. These efforts require significant time to complete technical feasibility assessments to successfully support changes and enhancements to the RTOs' and ISOs' respective market systems. Further, the capabilities of distribution utilities to assess the impact of DER dispatch on distribution system reliability, safety, and power quality vary widely throughout the country. For many distribution utilities, it will take some time to develop these capabilities. The IRC requests the FERC allow each ISO or RTO enough time and flexibility for the design, stakeholder discussion, and implementation of the proposed reforms.

The IRC recommends that, to provide some specificity and order to the process, the Final Rule should require that within 180 days from its promulgation, each ISO and RTO vet with its stakeholders and file with the Commission a proposed implementation plan and schedule—not necessarily limited to a twelve-month period, and explanation

thereof, which would then be the subject of notice and comment. Each RTO and ISO would be required to justify its particular proposed timelines and work plans.

This kind of transparent but flexible compliance process, which each RTO and ISO can tailor for its own context in consultation with its stakeholders, is preferable to a single compliance date given the multitude of issues, competing priorities and differing levels of work undertaken to date on these issues within each RTO and ISO across the country.

## V. CONCLUSION

The IRC stands ready to work with all stakeholders to support the broader goals of integrating DERs and energy storage resources into ISO and RTO markets. The IRC respectfully requests that the Commission consider these comments in response to the NOPR.

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## CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Norristown, PA, this 13th day of February, 2017.

A handwritten signature in black ink, appearing to read "James M. Burlew". The signature is written in a cursive style with a long, sweeping underline.

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Document Content(s)

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