

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

Distributed Energy Resources – Technical  
Considerations for the Bulk Power System

Docket No. AD18-10-000

**POST-TECHNICAL CONFERENCE COMMENTS OF  
THE ORGANIZATION OF MISO STATES**

Pursuant to the Federal Energy Regulatory Commission's ("Commission") Notice Inviting Post-Technical Conference Comments dated April 27, 2018, the Organization of MISO States ("OMS") provides these comments on issues related to distributed energy resource ("DER") aggregations in RTO markets. On April 10 and April 11, 2018, the OMS participated in the Commission's technical conference on panels 2, 4, and 6. The OMS appreciates the opportunity to further address the administrative, jurisdictional, technical hurdles facing DERs participating on the bulk power system.

As explained in the joint statement<sup>1</sup> filed in this docket on June 1<sup>st</sup>, the OMS and MISO are committed to working collaboratively to develop a long-term proposal for how to reliably and efficiently integrate DERs into the bulk power system. This effort was initiated by the OMS in early 2017 as state<sup>2</sup> regulators recognized two important aspects of DERs: (1) the overlapping jurisdictional framework DERs represent within the context of wholesale markets; and (2) the unique position state regulators occupy to facilitate the exchange of information between the RTO, distribution and transmission utilities, and the stakeholder community more broadly. Both of these aspects are especially critical in a multi-state region with predominately vertically-integrated utilities, where the efficient integration of resources located on state-jurisdictional distribution systems into both retail and wholesale markets will be largely determined by effective jurisdictional cooperation.

**Panel 4: Collection and Availability of Data on DER Installations**

*To plan and operate the bulk power system, it is important for transmission planners, transmission operators, and distribution utilities to collect and share validated data across the transmission-distribution interface. In September 2017, the North American Electric Reliability Corporation (NERC) published a Reliability Guideline on DER modeling (Guideline) that specified the minimum DER information needed by transmission planners and planning coordinators to assist in modeling and conducting assessments.<sup>3</sup> The Guideline references the*

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<sup>1</sup> Joint Statement of the Organization of MISO States and Midcontinent Independent System Operator, Inc. (June 1, 2018)

<sup>2</sup> Throughout this document the word "state" should be read to include the Council of the City of New Orleans.

<sup>3</sup> See NERC Distributed Energy Resource Modeling Reliability Guideline, at 5 (Sept. 2017), available at [http://www.nerc.com/comm/PC\\_Reliability\\_Guidelines\\_DL/Reliability\\_Guideline\\_-\\_DER\\_Modeling\\_Parameters\\_-\\_2017-08-18\\_-\\_FINAL.pdf](http://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Reliability_Guideline_-_DER_Modeling_Parameters_-_2017-08-18_-_FINAL.pdf).

*importance of static data (such as the capacity, technical capabilities, and location of a DER installation) for the entities involved in the planning of the bulk power system. The following questions focus on understanding the need for bulk power system planners and operators to have access to accurate data to plan and operate the bulk power system, explore the types of data that are needed, and assess the current state of DER data collection. The following questions also address regional DER penetration levels and any potential effects of inaccurate long-term DER forecasting. The Commission Staff DER Technical Report,<sup>4</sup> issued on February 15, 2018, provides a common foundation for the topics raised in this panel.*

**Question 1: What type of information do bulk power system planners and operators need regarding DER installations within their footprint to plan and operate the bulk power system? Would it be sufficient for distribution utilities to provide aggregate information about the penetration of DERs below certain points on the transmission-distribution interface? If greater granularity is needed, what level of detail would be sufficient? Is validation of the submitted data possible using data available?**

The level of information that is needed is not yet fully understood. The impacts to the bulk electric system will be varied depending on the ability of the distribution system to monitor and manage DER installations. That said, aggregate information (i.e., resource type and capacity) appears to be a necessary baseline of information.

From an operations perspective, there is less clarity. This stems from the uncertainty around DER use cases at the wholesale-level, which will largely be determined by state regulators, wholesale market rules, and market prices. There is focus on getting more detailed information on load shapes, contingencies for DER (when penetrations are large), communication standards for metering and dispatch, as well as understanding the amount of variation that DER can introduce onto the transmission system.

From a planning perspective, bottom-up information on the expectations of DER growth and deployment patterns is needed. A review of state and local policies that influence DER deployment is needed at a minimum. This could be built up from state-level planning efforts or a coordination effort between the RTO and state and local regulators.

Validation of data is not currently possible. OMS recently undertook a DER survey to assemble a footprint-wide view of DER throughout the MISO footprint. This process highlighted the steps involved in requesting data through commission action as well as internal utility processes required to collect information related to the many different aspects of DER. The ability to access data varies widely throughout the footprint, with some consistency coming from EIA reporting requirements and annual state-level commission filing requirements.

**Question 2: What, if any, data on DER installations is currently collected, and by whom is it collected? Do procedures and appropriate agreements exist to share this data with affected bulk power system entities (i.e., those entities responsible**

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<sup>4</sup> The report is available at <https://www.ferc.gov/legal/staff-reports/2018/der-report.pdf>.

**for the reliable operation of the bulk power system or for modeling and planning for a reliable bulk power system)? Is there variation by entity or region?**

States within MISO often collect DER data for their own purposes, including mandated reporting requirements, IRP processes, and retail rate considerations. These requirements vary throughout the MISO footprint. The majority of utilities within MISO have some level of reporting requirements for net-metered DER related to EIA form 861.

Currently, MISO has engaged a consultant to conduct data gathering on demand response, energy efficiency, and DER in order to produce long-term forecast, which **may** be used for transmission planning purposes in the future. Through this process the consultant collected data directly from utilities and public sources. The latest effort of this data collection had mixed results with responses from 50% of those surveyed, representing 70% of MISO load. Of those that responded, the consultant noted that many failed to provide information on DER. Data is not shared on individual utilities as it is only presented at a zonal-level.

The OMS also collects DER data, building on individual state data collection, but this process is new and evolving. The data collection is focused on type, number of installations, and total size. The appropriate agreements to share this data with bulk power system operator (i.e., MISO) are not in place.

**Question 4: How are long-term projections for DER penetrations developed? Are these projections currently included in related forecasting efforts? Do system operators study the potential effects of future DER growth to assess changing infrastructure and planning needs at different penetration levels?**

MISO utilizes a third-party study, which includes a mix of secondary data collection, utility surveys, and projections based on economics. The study relies heavily on EIA, DOE, and NREL data, as very few utilities provided information. The study also incorporates known state policies related to DER and energy efficiency targets.

MISO's transmission planning process includes varying assumptions on DER deployment under different future scenarios to assess potential needs of the transmission system. DER is considered a load modifier in MISO's long-term economic planning processes.

From a state and local-level, a recent OMS DER survey revealed that many utilities do not incorporate DER into their resource or distribution system planning processes. DER is considered as part of resource planning when required within state integrated resource planning processes.

**Question 5: What are the effects on the bulk power system if long-term forecasts of DER growth are inaccurate? Are these effects within current planning horizons? Are changes in the expected growth of DERs incorporated into ongoing planning efforts? Can these uncertainties be treated similarly to other uncertainties in the planning process?**

Impacts from DER deployment are very location specific, making it harder to incorporate the impacts of uncertainty around DER. Very granular impacts can be observed that vary by DER type.

If long term forecasts are inaccurate, there can be stranded assets (both generation and transmission). There can also be unexpected impacts at the T-D interface, where the appropriate infrastructure may not be in place to address observed issues.

MISO attempts to incorporate changes into their planning efforts by using futures that bookend the range of possibilities of DER deployment.

**Question 7: Noting that participation in the RTO/ISO markets by DER aggregators may provide more information to the RTOs/ISOs about DERs than would otherwise be available, should any specific information about DER aggregations or the individual DERs in them be required from aggregators to ensure proper planning and operation of the bulk power system?**

The amount of information should be limited to what is truly needed to operate the system reliably, which would depend on the services provided by the aggregation. Maintaining a simple view of DER aggregation from the BPS perspective should remain a goal. As little information as needed, communicated as efficiently as possible.

Excessive amount of data on DER is of no use to an RTO and serves only to add costs to consumers. Management of the Transmission-Distribution interface is what matters for RTOs.

**Question 8: Do the RTOs/ISOs need any directly metered data about the operations of DER aggregations to ensure proper planning and operation of the bulk power system?**

In vertically integrated states, the transmission owner can be the same party as the DSO. The appropriate planning for DER can occur without RTO involvement in these instances.

**Question 11: Is a formal development of a grid architecture that includes distribution and transmission systems necessary to facilitate planning efforts to incorporate DERs?**

The roles related to planning processes need to work under both vertically integrated and deregulated contexts, recognizing the availability of information will be determined by both regulatory structure and deployments of physical infrastructure and software. The ability to fulfill various roles may be shaped by the fact that states are investing in their distribution systems at different speeds and for different purposes. States will also have varying perspectives on cost allocation methodology for advanced technologies required to interconnect DERs.

The OMS cautions the Commission from defining overly-restrictive roles that may not be able to adapt to a changing technological or regulatory landscape of the distribution system. This topic is also addressed in our response to Panel 6, questions 9 and 10.

**Question 13: What challenges exist for DER developers and owners to provide DER real-time data? Please give examples.**

States may have ability to restrict data sharing from jurisdictional utilities. Some utilities may not have the technology in place to provide this data, and in some cases DER resources may have been deployed with different metering and communication requirements depending on when the

resource was installed and under what retail program. In many cases distribution utilities do not collect hourly production, only historical monthly production.

In order to integrate DERs into wholesale markets, more advanced and costly meters and communication infrastructure would most likely need to be installed. How this cost is shared amongst retail customers, the specific DER resource, and an aggregator will need to be determined by retail regulators.

The OMS files these comments because a majority of its members are in support. The Montana Public Service Commission and Manitoba Public Utilities Board did not participate in the vote. The Illinois Commerce Commission does not join these comments.

Respectfully Submitted,

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