

Locational Requirements

156-186: As to PJM's proposed single-node model for DER Aggregations participating in the energy market, PJM did not demonstrate that its proposed locational requirements for DERs to participate in an Aggregation are as geographically broad as technically feasible. PJM did not demonstrate that it is not technically feasible for DERs to aggregate across a broader geographic area than a single node, at least for some nodes or groupings of electrical facilities, for energy market participation. Compliance filing required.

185. However, with respect to PJM's proposed single-node model for DER Aggregation Resources participating in the energy market, we agree with commenters that PJM has not demonstrated that its proposed locational requirements for distributed energy resources to participate in a distributed energy resource aggregation are as geographically broad as technically feasible

197. FERC was not able to evaluate at this time whether PJM's proposal to not require distribution factors complies with the requirement of Order No. 2222 to establish market rules that address distribution factors for distributed energy resource aggregations.

PJM's proposed tariff language requiring the DER Aggregator to provide "associated physical and transmission system electrical location information of the applicable Component DER" is also unclear. While we believe that PJM has generally explained the need for this electrical location information, in that it enables PJM to map the Component DER participating in a DER Aggregation Resource to an individual node, PJM has not identified the specific information that the DER Aggregator is required to provide. Therefore, we find that PJM must identify what specific information it requires related to the physical and transmission system electrical location of the Component DER and explain why the specific information is necessary, consistent with Order No. 2222.

EDC Position and Response:

- We support PJM in their finding that a multi-nodal approach would generate reliability concerns. "PJM found that if DER Aggregation Resources were aggregated multi-nodally for purposes of energy market participation, PJM would not be able to rely on DER Aggregation Resources to effectively manage constraints on the system."
- Requiring PJM to adopt a multi-nodal approach for DER Aggregations in the Energy and Ancillary Services Market from the outset of the program would undoubtedly compromise the ability to maintain reliability. As detailed in the affidavit of Donald Bielak submitted in support of the PJM Compliance Filing, the unique topology of the PJM system requires that the broadest geography for dispatch for a DER Aggregations in the Energy and Ancillary Services Market is a single Pnode. Mr. Bielak goes on to explain that permitting any broader level of DER Aggregations would eliminate PJM's ability to

clearly determine the effects of particular resources on the distribution system, making it impossible to verify congestion prices.

- PJM's IMM has agreed, demonstrating both reliability and pricing issues may result if multi-nodal DER Aggregations were implemented in PJM.
- The Joint Utilities agree with PJM's assessments and emphasizes that implementation of a multi-nodal approach for the initial implementation of the DER Aggregator Participation Model in these two markets would also likely conflict with NERC reliability standards. For example, an individual Component DER of the DER Aggregation responding to the LMP Dispatch signal could create excessive distribution system line congestion that could cause reliability problems or lead to thermal line overloading. Either situation would require the entire DER Aggregation to be curtailed where if established nodally, would require only the smaller DER Aggregation to be curtailed.
- FO-2222 aggregations were intended to allow smaller DERs to aggregate up to 100 kW or more to be able to participate directly in the PJM Markets. DER Aggregation should begin at the customer premise to allow all DER types onsite to participate with focus on DER Aggregations occurring more locally to provide the needed services as this is also the focus of EDC programs and customer priorities.
- DERs are being installed by customers to help them manage their retail bills first and foremost by reducing peak loads, shifting load to take advantage of lower off-peak retail rates. Being able to provide wholesale services is a secondary benefit which can lead to a new wholesale revenue stream for these customers however the objectives and use case of the DERs must be structured to "work together" for retail activities and wholesale activities.
- We must avoid conflicts with DER dispatch for wholesale market participation that directly conflicts with distribution system reliability requirements or system needs.
- Given an EDC's obligation to provide safe and reliable electric service, the EDCs must maintain reliable operations of its distribution system. Beyond the effects on the PJM system that Mr. Bielak appropriately identifies, additional distribution system factors must also be considered. Maintaining the single Pnode structure, for example, reduces the risk of artificial congestion and related charges ultimately borne by customers. As more experience is obtained in the energy market with DER Aggregations, there may be opportunities to aggregate among certain Pnodes, however we believe the opposite would be true if zonal aggregation is permitted where larger aggregations will need to be segregated into smaller aggregations to avoid the issues mentioned above.

- Lastly, there has been no evidence presented by the DER Aggregators to substantiate the statement that nodal aggregation limits for the energy market will be a barrier to entry into the energy market.