

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF ENERGY MARKET REGULATION

In Reply Refer To:
PJM Interconnection, L.L.C.
Docket No. ER22-962-000
Issued: 5/18/2022

PJM Interconnection, L.L.C.
Attn: Thomas S. DeVita
Assistant General Counsel
2750 Monroe Blvd.
Audubon, PA 19403

Reference: Compliance Filing for Order No. 2222

Dear Mr. DeVita:

On February 1, 2022, PJM Interconnection, L.L.C. (PJM) filed tariff revisions¹ to comply with Commission Order No. 2222.² Please be advised that additional information is necessary to process the filing. Please provide complete responses to the following and include citations to any relevant existing or proposed tariff provisions:³

¹ PJM submitted revisions to its Open Access Transmission Tariff (Tariff), Amended and Restated Operating Agreement (Operating Agreement), and Reliability Assurance Agreement Among Load Serving Entities in the PJM Region (RAA). Unless otherwise noted, capitalized terms not defined herein have the meanings set forth in the Tariff, Operating Agreement, or RAA.

² *Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 2222, 172 FERC ¶ 61,247 (2020) (Order No. 2222), *order on reh'g*, Order No. 2222-A, 174 FERC ¶ 61,197 (Order No. 2222-A), *order on reh'g*, Order No. 2222-B, 175 FERC ¶ 61,227 (2021) (Order No. 2222-B).

³ PJM may file revised tariff records where appropriate.

I. Small Utility Opt-In

In Order No. 2222, the Commission added section 35.28(g)(12)(iv) to the Commission's regulations to provide that RTOs/ISOs may not accept bids from distributed energy resource aggregators aggregating customers of small utilities unless the Relevant Electric Retail Regulatory Authority (RERRA) allows such customers of small utilities to participate in distributed energy resource aggregations (i.e., to opt in).⁴ Specifically, the Commission directed each RTO/ISO to amend its market rules as necessary to (1) accept bids from a distributed energy resource aggregator if its aggregation includes distributed energy resources that are customers of utilities that distributed more than 4 million MWh in the previous fiscal year, and (2) not accept bids from distributed energy resource aggregators if its aggregation includes distributed energy resources that are customers of utilities that distributed 4 million MWh or less in the previous fiscal year, unless the RERRA permits such customers to be bid into RTO/ISO markets by a distributed energy resource aggregator (small utility opt-in).⁵ The Commission also required each RTO/ISO to explain how it will implement this small utility opt-in, noting that an RTO/ISO may choose to implement this requirement in a similar manner as it currently implements the small utility opt-in provision under Order No. 719-A.⁶

1. PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(g) and Operating Agreement, Schedule 1, section 1.4B(g) state, in part, that the Office of the Interconnection will not permit a DER Aggregator to participate in the DER Aggregation Participation Model if an aggregation includes Component DER that are end-use customers of a small utility "unless the electric distribution company determines that the [RERRA] permits such end-use customers to participate."⁷ PJM states that it is implementing the Commission's directive in accordance with its provisions related to demand response.⁸

⁴ Order No. 2222, 172 FERC ¶ 61,247 at P 56.

⁵ *Id.* P 65; *see* Order No. 2222-A, 174 FERC ¶ 61,197 at PP 34-35 (dismissing arguments on rehearing about the small utility opt-in).

⁶ Order No. 2222, 172 FERC ¶ 61,247 at P 66.

⁷ Transmittal at 87.

⁸ *Id.* at 88.

- a. Please explain what type of “determination” an electric distribution company would make with respect to the RERRA’s decision to permit such customers to participate, how the electric distribution company would make that determination, and the extent to which its role in making that determination complies with the requirement that bids be accepted if the RERRA so permits.
 - b. In circumstances where a RERRA and an electric distribution company are the same entity, such as a municipally owned utility or electric cooperative, please explain how PJM’s proposal does not create barriers to entry for DER Aggregations and is not unjust, unreasonable, or unduly discriminatory with respect to conflicts of interest between the RERRA and such electric distribution company that may arise in the context of coordination, implementation, and dispute resolution.
 - c. Please explain whether and to what extent PJM is aware of disputes, concerns, or difficulties in the context of its implementation of Order No. 719-A related to situations where the RERRA and the electric distribution company are the same entity.
2. PJM’s proposed Tariff, Attachment K-Appendix, section 1.4B(g) and Operating Agreement, Schedule 1, section 1.4B(g) state, in part, that the Office of the Interconnection will permit a DER Aggregator to participate in the DER Aggregation Participation Model if an aggregation includes Component DERs that are end-use customers of a small utility “if, during the course of the registration process ... the electric distribution company presents...” certain evidence of a RERRA’s decision “permitting or conditionally permitting the end-use customer’s participation.”⁹
- a. Please explain why PJM proposes that only the electric distribution company can present such evidence to PJM regarding whether the RERRA permits small-utility

⁹ Transmittal at 88.

customer participation. Could the DER Aggregator or RERRA provide this information to PJM?

- b. Please explain the purpose of accepting evidence of a RERRA's "conditional" permission of small-utility customer participation and how this complies with the Commission's decision to allow such customers to participate if the RERRA so permits.

II. Demand Response Opt-Out

In Order No. 2222-B, the Commission stated, "the participation of demand response in distributed energy resource aggregations is subject to the opt-out and opt-in requirements of Order Nos. 719 and 719-A. Therefore, if the relevant electric retail regulatory authority where a demand response resource is located has either chosen to opt out or has not opted in [pursuant to Order Nos. 719 and 719-A], then the demand response resource may not participate in a distributed energy resource aggregation."¹⁰

1. PJM's currently effective Tariff, Attachment K-Appendix, section 1.5A.3 (1)(a)(i) and Operating Agreement, Schedule 1, section 1.5A.3 (1)(a)(i) states that if an electric distribution company or load serving entity seeks to assert that the laws or regulations of a RERRA prohibit or condition an end-use customer's participation in a demand response program, it must provide certain enumerated evidence to PJM in accordance with the process set forth in the Tariff and Operating Agreement. Similarly, PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(g) and Operating Agreement, Schedule 1, section 1.4B(g) identifies specific evidence that must be provided to PJM and a corresponding process to demonstrate that a RERRA permits small utility customers to participate in the DER Aggregator Participation Model. However, PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(g) and Operating Agreement, Schedule 1, section 1.4B(g) state, in part, that "[t]he Office of the Interconnection shall permit a DER Aggregator to participate in the PJM energy, capacity, and/or ancillary services markets through the DER Aggregator Participation Model if the applicable DER Aggregation Resource includes Component DER that are end-use customers of an electric distribution company that distributed more than 4 million MWh in the previous fiscal year, as identified by the electric distribution company, unless the DER Aggregation Resource

¹⁰ Order No. 2222-B, 175 FERC ¶ 61,227 at P 29 (citing Order No. 2222, 172 FERC ¶ 61,247 at P 145) (internal quotation marks omitted).

includes one or more Component DER that are demand response and the Relevant Electric Retail Regulatory Authority has prohibited the participation of demand response in the DER Aggregator Participation Model.”¹¹

- a. Please explain why PJM’s proposed Tariff, Attachment K-Appendix, section 1.4B(g) and Operating Agreement, Schedule 1, section 1.4B(g) do not identify specific evidence that must be provided to PJM and a corresponding process to demonstrate that a RERRA has prohibited the participation of demand response by large utility customers in the DER Aggregator Participation Model.
- b. Please explain whether and to what extent the process set forth in Tariff, Attachment K-Appendix, section 1.5A.3 (1)(a)(i) and Operating Agreement, Schedule 1, section 1.5A.3 (1)(a)(i) should be utilized to demonstrate that a RERRA has prohibited the participation of demand response in the DER Aggregator Participation Model.

III. Eligibility to Participate

A. Participation Model

In Order No. 2222, the Commission added section 35.28(g)(12)(i) to the Commission’s regulations to require each RTO/ISO to establish distributed energy resource aggregators as a type of market participant and to allow distributed energy resource aggregators to register distributed energy resource aggregations under one or more participation models in the RTO’s/ISO’s tariff that accommodate the physical and operational characteristics of the distributed energy resource aggregation.¹² The Commission stated that it would evaluate each proposal submitted on compliance to determine whether it meets the goals of Order No. 2222 to allow distributed energy resources to provide all services that they are technically capable of providing through aggregation.

1. PJM states that the DER Aggregator Participation Model is structurally designed to account for the physical and operational characteristics of the DER Aggregation Resource through the

¹¹ Transmittal at 89.

¹² Order No. 2222, 172 FERC ¶ 61,247 at P 130.

identification of the underlying capabilities of the Component DER in the registration process, and through the definition of DER Aggregation Resource.¹³ PJM highlights that the definition of DER Aggregation Resource specifically notes that “[t]he market participation eligibility of a DER Aggregation Resource shall be determined in accordance with the physical and operational characteristics of the underlying Component DER that comprise the DER Aggregation Resource,” and also that a DER Aggregation Resource “shall be comprised of one or more Component DER,” thereby ensuring the accommodation of heterogeneous DER aggregations in PJM. PJM states that resources may continue to participate in PJM’s energy, capacity, and ancillary services markets via existing participation models, including demand response, the energy storage resource participation model, or the generator model, so long as those resources meet the associated requirements and criteria.

- a. Please clarify whether and to what extent homogeneous DER Aggregations, including homogeneous aggregations of generators, electric storage resources, and demand response resources, will be able to use either existing participation models for which they qualify and/or the new DER Aggregation Participation Model? Can such aggregations choose to participate under existing models or the new DER Aggregation Participation Model?
2. PJM explains in its Answer that a single DER Aggregation Resource can reflect both demand capability and injection capability, including reflecting both attributes at a single Component DER site. PJM explains that the only separation of capability from the demand side and injection side in a DER Aggregation Resource is in the *settlement* of these resources, whereby PJM will settle demand activities under Order No. 745 business rules, as directed by the Commission.¹⁴ PJM explains that DER Aggregation Resources will be able to simultaneously offer demand reduction and injection capability into the PJM market under the DER Aggregator Participation Model with the following approach: (1) all reduction MW capability in the capacity market will be evaluated against a

¹³ Transmittal at 38.

¹⁴ Answer at 21 (citing Order No. 2222, 172 FERC ¶ 61,247 at P 145).

site's Peak Load Contribution (PLC), and all reduction MW capability in the energy market will be evaluated against the Customer Baseline Load (CBL); and (2) all injection MW capability in the capacity market will be evaluated against a site's [PLC] based on the characteristics of a customer's load, and all injection MW capability in the energy market will be evaluated against real-time injections.¹⁵

- a. Please indicate whether these provisions are included in PJM's Tariff, Operating Agreement or RAA and, if so, where they are located.
 - b. Please explain whether and the extent to which a non-net metered Component DER can participate in all markets where they are combined with net metered technologies at the same site.
3. PJM states that DER Aggregators will be required to submit both price and cost-based offers for DER Aggregation Resources and will follow applicable cost development requirements and guidelines currently enforced in PJM.¹⁶ PJM explains that DER Aggregators wanting to reflect a non-zero cost into the PJM energy market will need to have an approved Fuel Cost Policy on file with PJM. For homogenous DER Aggregation Resources consisting of Component DER that have the technology type documented in PJM Manual 15 (*e.g.*, CT, battery, etc.), PJM explains that DER Aggregators should follow the documented cost development guidelines for submitting Fuel Cost Policies. PJM states that heterogeneous DER Aggregation Resources, or homogenous DER Aggregation Resources that consist of Component DER that do not have the technology type documented in PJM Manual 15 (*e.g.*, demand response), will have a default cost-based offer of \$0.

PJM explains that any DER Aggregator seeking to submit a non-zero cost-based offer would be able to utilize PJM's Manual 15, section 1.8 cost methodology and approval process to obtain an exception to its cost methodology calculation. PJM states that it recognizes that a \$0 cost-based offer may not always accurately represent the DER Aggregation Resources' costs and encourages

¹⁵ *Id.* at 22.

¹⁶ Transmittal at 36.

DER Aggregators or other PJM stakeholders to bring a problem statement to the PJM Cost Development Subcommittee to further develop cost methodology for these types of aggregations.¹⁷

- a. Please identify which specific technology types are not documented in PJM Manual 15 and would have a \$0/MWh default cost-based offer.
 - b. Please explain whether and the extent to which DER Aggregations containing technology types that have a default \$0/MWh cost-based offer may be disadvantaged with regard to participation in PJM markets.
 - c. Please describe the process by which a DER Aggregation Resource that includes technology types that submit a \$0/MWh default cost-based offer could utilize PJM's Manual 15, section 1.8 cost methodology and approval process to obtain an exception to its cost methodology calculation.
4. PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(k) and Operating Agreement, Schedule 1, section 1.4B(k) provides that: "A DER Capacity Aggregation Resource containing DER Aggregation Resource(s) with a Component DER directly connected to distribution facilities not co-located with retail end-use load other than Station Power may be subject to a Minimum Offer Price Rule Floor Offer Price, in accordance with the provisions applicable to MOPR Floor Offer Price for Generation Capacity Resources, as described in Tariff, Attachment DD, section 5.14(h-2)." Tariff section 1.4B(l) provides that: "A DER Capacity Aggregation Resource containing DER Aggregation Resource(s) with a Component DER directly connected to distribution facilities not co-located with retail end-use load other than Station Power may be subject to a Market Seller Offer Cap, in a manner consistent with the provisions applicable to Market Seller Offer Cap for Generation Capacity Resources, as described in Tariff, Attachment DD, section 6 and Tariff, Attachment M – Appendix, section II.E."
- a. Please explain whether DER Aggregation Resources that include Component DER that inject to the grid and are

¹⁷ *Id.* at 36 n.28.

co-located with retail load would be subject to the Minimum Offer Price Rule and Market Seller Offer Cap.

- b. Please explain whether these proposed requirements are consistent with PJM's existing performance requirements for participation in the capacity market.

Capacity and Deliverability

5. PJM explains that the capacity value of a DER Capacity Aggregation Resource will be determined as a summation based on the underlying Component DER within the DER Aggregation Resources linked to the DER Capacity Aggregation Resource.¹⁸ PJM states that it will set the maximum MW value that can be offered into the Base Residual Auction (BRA), Incremental Auction, or used in a Fixed Resource Requirement (FRR) plan. PJM states that the DER Capacity Aggregation Resource capacity value will be calculated based on the technology type and site configuration of the underlying Component DER within the underlying DER Aggregation Resources using PJM's Effective Load Carrying Capability (ELCC) methodology. PJM states that DER Aggregators will be able to offer up to the maximum DER Capacity Aggregation Resource calculated capability into the capacity market.

PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(o) and Operating Agreement, Schedule 1, section 1.4B(o) state that "[C]omponent DER interconnecting to distribution facilities for purposes of participating in the energy, capacity, and/or ancillary services markets of PJM exclusively through the DER Aggregator Participation Model shall not be subject to the Part IV of the Tariff relating to interconnections with the Transmission System, and shall exclusively interconnect to distribution facilities pursuant to applicable state or local law."

- a. Please explain whether and how the requirements of OATT Part VI (Administration and Study of New Service Requests; Rights Associated with Customer-Funded Upgrades) apply to DER Aggregation Resources and/or Component DER. Please provide an overview of how PJM will evaluate new service requests for Component DER and/or DER Aggregation Resources

¹⁸ Transmittal at 32-33. See RAA, Schedule 9.1.

and whether that process is the same as for other resources.

- b. Please explain if PJM will evaluate a DER Aggregation Resource seeking to provide capacity in order to award Capacity Injection Rights (CIRs). If so, please explain the evaluation process and studies performed and how does that evaluation compare to the evaluation process for other resources?
- c. Please provide an overview of how PJM will evaluate Component DER and DER Aggregation Resources for deliverability and whether that process is the same as for other resources.
- d. Are there any studies that Component DER and/or DER Aggregation Resources must undergo to be eligible to participate in PJM markets? Please include cites to any applicable section(s) of the Tariff and/or PJM Manuals.

Ancillary Services

6. PJM states that under the DER Aggregation Participation Model, DER Aggregators will be able to aggregate Component DER to form DER Aggregation Resources to participate in the PJM regulation or reserves markets as “ancillary service only” resources, participating exclusively in regulation or reserves.¹⁹ However, Tariff section 1.4B(c) only specifies that for a “DER Aggregation Resource that only provides ancillary services and is less than or equal to 5 MW, the Component DER within the DER Aggregation Resource may interface with multiple primary pricing nodes, so long as those primary pricing nodes are in the same state and service territory of a single electric distribution company.” PJM states that all DER Aggregation Resources will need to meet existing capacity and performance requirements for the ancillary service markets.
 - a. While PJM states that DER Aggregators will be able to provide ancillary services, the proposed Tariff revisions do not appear to include specific requirements governing such participation. Please identify the provision(s) in the Tariff, Operating Agreement, or the RAA establishing a

¹⁹ Transmittal at 37.

DER Aggregator's ability to participate in PJM's ancillary service markets, including the provision(s) establishing rules for ancillary service-only DER Aggregation Resources.

- b. Please explain whether and to what extent DER Aggregation Resources that choose to participate in the PJM regulation or reserves markets would be able to provide other ancillary services, such as voltage support, under existing rules in PJM. In your response, please identify the relevant Tariff, Operating Agreement, or RAA provisions that memorialize the technical, performance or operational requirements for DER Aggregation Resources' provision of ancillary services.
- c. Please explain whether and to what extent a DER Aggregation Resource will only qualify to offer the ancillary services that all Component DER in the DER Aggregation are qualified to provide.

B. Types of Technologies

To implement section 35.28(g)(12)(ii)(a) of the Commission's regulations, the Commission required in Order No. 2222 that each RTO's/ISO's rules not prohibit any particular type of distributed energy resource technology from participating in distributed energy resource aggregations.²⁰ In Order No. 2222, the Commission stated that the requirements in Order No. 745 would apply to demand response resources participating in heterogeneous aggregations.²¹

1. Tariff section 1.4B(n) states: "A DER Aggregator's DER Aggregation Resource that contains Component DER that are also load reduction resources shall be accounted for and settled in accordance with Tariff, Attachment K-Appendix, section 3.3A and Operating Agreement, Schedule 1, section 3.3A." Tariff section 3.3A.5 addresses Market Settlements in Real-time Energy Market. PJM proposes revisions to subsection (b), which states that, "[i]n cases where the demand reduction follows dispatch, as defined in Tariff, Attachment K-Appendix, section 3.2.3(o-1), as instructed by the Office of the Interconnection, and the demand reduction offer

²⁰ Order No. 2222, 172 FERC ¶ 61,247 at P 141.

²¹ *Id.* P 145; Order No. 2222-B, 175 FERC ¶ 61,227 at P 43.

price is equal to or greater than the threshold price established under the Net Benefits Test, *and demand reduction is not a Component DER operating as part of a DER Aggregation Resource*, payment will not be less than the total value of the demand reduction bid.” (emphasis added). PJM also proposes revisions to Tariff section 3.3A.6(b), which states that, “Total payments to Economic Load Response Participants for accepted day-ahead demand reduction bids with an offer price equal to or greater than the threshold price established under the Net Benefits Test that follow the dispatch instructions of the Office of the Interconnection, *and the demand reduction is not dispatched as part of a DER Aggregation Resource*, will not be less than the total value of the demand reduction bid.” (emphasis added).

- a. Please explain whether and how PJM applies the requirements in Order No. 745 to demand response resources participating in PJM’s energy market as part of heterogeneous aggregations. Please indicate where in the Tariff any applicable requirements are located.
 - b. Please explain the purpose of the revisions proposed to Tariff sections 3.3A.5 and 3.3A.6 referenced above and how the revisions are necessary to comply with Order No. 2222. If possible, please provide examples of how PJM would apply these provisions in practice.
2. PJM explains that it is not establishing an Emergency or Pre-Emergency DER Aggregation Resource, similar to the Emergency or Pre-Emergency demand response program currently in PJM.²² PJM explains that, given the distinction of DER Aggregation Resources, their ability to inject onto the distribution system, and their ability to locate anywhere on the distribution system, it is important for PJM to have visibility and control of these resources, and to be able to use these resources to meet system demand and constraint control, and not only access these MWs during emergency events.
- a. Please clarify whether all DER Aggregation Resources must be able to inject onto the distribution system.
 - b. Please explain whether a demand response resource that participates in an Emergency or Pre-Emergency demand

²² Transmittal at 35.

response program is also (or alternatively) eligible to participate as a Component DER in a DER Aggregation Resource? Please include any relevant Tariff citations.

C. Double Counting of Services

To implement section 35.28(g)(12)(ii)(a) of the Commission's regulations, the Commission in Order No. 2222 allowed RTOs/ISOs to limit the participation of resources in RTO/ISO markets through a distributed energy resource aggregator that are receiving compensation for the same services as part of another program.²³

1. PJM asserts that, under its proposed Tariff and Operating Agreement language, it is possible for retail net metering programs to be designed in a manner that would allow participation in capacity and energy markets without triggering double compensation concerns.²⁴ Therefore, PJM proposes to allow Component DER in a net energy metering retail program to participate in the energy and capacity markets if: (a) the electric distribution company confirms to the Office of the Interconnection that participation of the resource will not violate the restrictions on duplicative compensation; and (b) the Office of the Interconnection determines that the participation of the resource otherwise meets the requirements for energy or capacity market participation.
 - a. Please explain in greater detail the roles of the electric distribution company and the Office of the Interconnection in deciding whether a resource can participate in both retail net energy metering and the energy market or capacity market.
 - b. Please explain whether and to what extent there will be any coordination between the electric distribution company and the Office of the Interconnection when making the determination that a Component DER participating in retail net energy metering may or may not participate in the energy market and capacity market.

²³ Order No. 2222, 172 FERC ¶ 61,247 at P 159.

²⁴ Transmittal at 41-42 (citing Tariff, Attachment K-Appendix, section 1.4(B)(b)(iv)(a) and Operating Agreement, Schedule 1, section 1.4(B)(b)(iv)(a)).

- c. Please explain the appeal process (if any) for a party (Component DER, DER Aggregator, Office of the Interconnection, or other interested party) to challenge the decision of an electric distribution company to allow or disallow the participation in the energy market or capacity market of a Component DER participating in retail net energy metering.
 2. PJM states that the “Office of the Interconnection shall only credit a DER Aggregator for the sale of a product in the PJM energy, capacity, and/or ancillary services markets if that same product is not also credited as part of a retail program, including but not limited to a Component DER participating in a retail net energy metering program.”²⁵
 - a. Please explain the process to determine whether the “same product is not also credited as part of a retail program.” Does the Office of the Interconnection make this determination? If so, how will the Office of the Interconnection verify this determination?

D. Minimum and Maximum Capacity Requirements for Distributed Energy Resources Participating in an Aggregation

To implement section 35.28(g)(12)(ii)(a) of the Commission’s regulations, the Commission in Order No. 2222 did not establish a minimum or maximum capacity requirement for individual distributed energy resources to participate in RTO/ISO markets through a distributed energy resource aggregation.²⁶ Although the Commission declined to establish a specific maximum capacity requirement for individual distributed energy resources in an aggregation, the Commission directed each RTO/ISO to propose a maximum capacity requirement for individual distributed energy resources participating in its markets through a distributed energy resource aggregation or, alternatively, to explain why such a requirement is not necessary.

1. PJM proposes to establish a cap of 5 MW on the maximum capacity of individual Component DER participating in a DER Aggregation

²⁵ Transmittal at 39-40 (citing Tariff, Attachment K-Appendix, section 1.4(B)(h) and Operating Agreement, Schedule 1, section 1.4(B)(h)).

²⁶ Order No. 2222, 172 FERC ¶ 61,247 at P 179.

Resource.²⁷ PJM states that it is codifying this maximum capacity requirement in the definition of Component DER.²⁸ According to PJM, the maximum capacity of 5 MW appropriately balances the removal of barriers to the participation of small Component DER with PJM's operational and visibility needs, both from a planning and operations perspective. When dealing with a larger resource than 5 MW, PJM contends it requires greater visibility via individual telemetry and greater operational control to maintain reliability.

- a. Please explain how a maximum capacity threshold of 5 MW for individual Component DER was selected, including for resources that do not inject power onto the grid.

IV. Locational Requirements

In Order No. 2222, the Commission added section 35.28(g)(12)(ii)(b) to the Commission's regulations to require each RTO/ISO to revise its tariff to establish locational requirements for distributed energy resources to participate in a distributed energy resource aggregation that are as geographically broad as technically feasible.²⁹

1. PJM proposes a nodal model for energy participation, and simultaneously a multi-nodal model for capacity and ancillary services-only DER Aggregation Resources. Specifically, PJM Tariff, Attachment K-Appendix, section 1.4B(c) and Operating Agreement, Schedule 1, section 1.4B(c) state, in part, that all Component DER in a DER Aggregation Resource shall interface with the same primary pricing node, except: (1) when a DER Aggregation, less than 5 MW, provides ancillary services only, the Component DER within the DER Aggregation Resource may interface with multiple primary pricing nodes so long as those primary pricing nodes are in the same state and service territory of a single electric distribution company; and (2) with a DER Capacity Aggregation Resource, the Component DER within a DER Aggregation Resource(s) linked to the DER Capacity Aggregation Resource may interface with multiple pricing nodes, so long as those

²⁷ Transmittal at 43.

²⁸ *Id.* at 44.

²⁹ Order No. 2222, 172 FERC ¶ 61,247 at P 204.

primary pricing nodes are within a defined zone or sub-zonal locational deliverability area.³⁰

- a. Please explain whether this requirement is consistent with existing locational requirements for demand response resources in PJM. To the extent that these proposed requirements are more restrictive, please explain why these additional restrictions are appropriate for aggregations of distributed energy resources.
 - b. Please explain the basis for the proposed limitation that a Component DER within a DER Aggregation Resource can only interface with multiple primary pricing nodes if those primary pricing nodes are in the same state and service territory of a single electric distribution company.
2. PJM states that a multi-nodal model would raise significant concerns regarding PJM's ability to maintain compliance with NERC mandatory Reliability Standards TOP-001, R1, R12, and R14, as well as IRO-009, R1, R2, R3, and R4, and lead to degradation in accurate market pricing and operational constraint control. In its Answer, PJM acknowledges that a transition to a multi-nodal approach may be appropriate in the future, once additional data regarding the operational impacts of DER Aggregation Resources in PJM becomes available and can be analyzed.³¹ PJM asserts that such an analysis must be conducted once implementation has begun, as data from a study conducted now would be stale by the time of implementation in 2026, given numerous changes in generator installations and retirements, transmission system upgrades, and shifts in load patterns.
- a. Please explain why the single node requirement is necessary to maintain reliability and meet the cited reliability standards. In your explanation, please also include an example where a multi-node injection could jeopardize PJM's ability to maintain any specific NERC Reliability Standards. Could PJM meet these reliability

³⁰ Transmittal at 46-47.

³¹ Answer at 17-18.

standards in other ways while permitting multi-nodal aggregations?

- b. What specific additional data regarding the operational impacts of DER Aggregation Resources will PJM review to evaluate the feasibility of a transition to permitting multi-node aggregations in the energy market? Please explain why these impacts cannot be anticipated or accounted for at this time.

V. Distribution Factors and Bidding Parameters

In Order No. 2222, the Commission added section 35.28(g)(12)(ii)(c) to the Commission's regulations to require each RTO/ISO to establish market rules that address distribution factors and bidding parameters for distributed energy resource aggregations.³² Specifically, the Commission required each RTO/ISO that allows multi-node aggregations to revise its tariff to (1) require that distributed energy resource aggregators give to the RTO/ISO the total distributed energy resource aggregation response that would be provided from each pricing node, where applicable, when they initially register their aggregation, and to update these distribution factors if they change; and (2) incorporate appropriate bidding parameters into its participation models as necessary to account for the physical and operational characteristics of distributed energy resource aggregations. The Commission stated that, in meeting the requirement to account for distribution factors and bidding parameters, each RTO/ISO may revise its tariff to manage the locational attributes of distributed energy resource aggregations in a manner that reflects the RTO's/ISO's unique network configuration, infrastructure, and existing operational processes.³³

1. PJM states that its Tariff, Attachment K-Appendix, section 1.4B(d) and Operating Agreement, Schedule 1, section 1.4B(d) would allow DER Aggregators to self-schedule their resources in the day-ahead and real-time energy markets based on the bidding parameters for the applicable technology-type as described in the PJM Manuals.³⁴

³² Order No. 2222, 172 FERC ¶ 61,247 at P 225.

³³ *Id.* P 229.

³⁴ Transmittal at 55.

- a. Please list the bidding parameters that DER Aggregators will use based on technology-type and indicate where these parameters are located in the PJM Manuals.
- b. Please explain why specific parameters for each technology-type are not “realistically susceptible to specification” in the text of the PJM’s Tariff, and therefore are better suited in the PJM Manuals.

VI. Information and Data Requirements

In Order No. 2222, the Commission added section 35.28(g)(12)(ii)(d) to the Commission’s regulations to require each RTO/ISO to establish market rules that address information requirements and data requirements for distributed energy resource aggregations.³⁵ As discussed in more detail below, the Commission required each RTO/ISO to revise its tariff to (1) include any requirements for distributed energy resource aggregators that establish the information and data that a distributed energy resource aggregator must provide about the physical and operational characteristics of its aggregation; (2) require distributed energy resource aggregators to provide a list of the individual resources in their aggregations; and (3) establish any necessary information that must be submitted for the individual distributed energy resources. The Commission also required each RTO/ISO to revise its tariff to require distributed energy resource aggregators to provide aggregate settlement data for the distributed energy resource aggregation and to retain performance data for individual distributed energy resources in a distributed energy resource aggregation for auditing purposes.

1. PJM states that its proposed pre-registration and registration processes in Tariff, Attachment K-Appendix, section 1.4B(b) and Operating Agreement, Schedule 1, section 1.4B(b) describe in specific detail the types of information and data that a DER Aggregator must provide regarding the physical and operational characteristics of its DER Aggregation Resource and the underlying Component DER.³⁶ PJM’s proposed Tariff, Attachment K-Appendix, section 1.4B(b) states, in part, that a DER Aggregator shall obtain and verify certain location and data components, including “the electric distribution company customer account

³⁵ Order No. 2222, 172 FERC ¶ 61,247 at P 236.

³⁶ Transmittal at 56.

number and associated physical and transmission system electrical location information.”³⁷

- a. Please identify and explain the specific physical and electrical location information that a DER Aggregator must obtain and verify.
 - b. If PJM needs additional information about the individual distributed energy resources within an aggregation, beyond the list of individual resources, to conduct transmission planning, interconnection or reliability studies, real time operations, or for other relevant purposes, what process will PJM follow to obtain such information?
 - c. Please clarify how the DER Aggregator will share any specific information regarding Component DER with the RTO/ISO and affected distribution utilities.
2. PJM proposes that a DER Aggregator provide to the Office of the Interconnection all individual Component DER meter data necessary to facilitate the settlement of the DER Aggregator’s DER Aggregation Resource, in accordance with Operating Agreement, section 14 and the PJM Manuals. PJM also states that a DER Aggregator shall retain performance data for individual Component DER in a DER Aggregation Resource for auditing purposes, in accordance with the PJM Manuals.³⁸
- a. Please explain how PJM’s proposal to require a DER Aggregator to provide individual Component DER meter data is consistent with the requirement of Order No. 2222 that the RTO/ISO require each distributed energy resource aggregator to maintain and submit aggregate settlement data for the distributed energy resource aggregation.³⁹

³⁷ *Id.* at 32.

³⁸ *Id.* at 57 (citing Tariff, Attachment K-Appendix, section 1.4B(e) and Operating Agreement, Schedule 1, section 1.4B(e)).

³⁹ Order No. 2222, 172 FERC ¶ 61,247 at P 240.

Please explain and justify the need for individual Component DER meter data for use in settlements.⁴⁰

- b. Please identify the PJM Manual(s) where additional details are established.
- c. Please indicate whether PJM's requirements for settlement and performance data are consistent with the settlement and auditing data requirements for other market participants.

VII. Metering and Telemetry System Requirements

In Order No. 2222, the Commission added section 35.28(g)(12)(ii)(f) to the Commission's regulations to require each RTO/ISO to revise its tariff to establish market rules that address metering and telemetry hardware and software requirements necessary for distributed energy resource aggregations to participate in RTO/ISO markets.⁴¹ The Commission stated that it would not prescribe the specific metering and telemetry requirements that each RTO/ISO must adopt; rather, the Commission provided the RTOs/ISOs with flexibility to establish the necessary metering and telemetry requirements for distributed energy resource aggregations, and required each RTO/ISO to explain in its compliance filing why such requirements are just and reasonable and do not pose an unnecessary and undue barrier to individual distributed energy resources joining a distributed energy resource aggregation.⁴²

The Commission stated that each RTO's/ISO's proposed metering requirements should rely on meter data obtained through compliance with distribution utility or local regulatory authority metering system requirements whenever possible for settlement and auditing purposes.⁴³ To the extent that the RTO/ISO proposes that such information come from or flow through distribution utilities, the Commission required that RTOs/ISOs coordinate with distribution utilities and Relevant Electric Retail Regulatory Authorities (RERRAs) to establish protocols for sharing metering and telemetry data, and

⁴⁰ *Id.* P 238 (“If an RTO/ISO needs additional information beyond this list, the RTO/ISO should identify and explain in its compliance filing what additional specific information about the individual distributed energy resources within an aggregation that the RTO/ISO needs”).

⁴¹ *Id.* P 262.

⁴² *Id.* P 263.

⁴³ *Id.* P 269.

that such protocols minimize costs and other burdens and address concerns raised with respect to privacy and cybersecurity.⁴⁴

1. PJM's Transmittal contains a table explaining that DER telemetry will be required at a 1-minute scan rate, except for energy resources smaller than 10 MW (no real-time telemetry required) and regulation resources (2/10 second scan rate).⁴⁵ PJM states that for both metering and telemetry, its Tariff and Operating Agreement language reserves a sufficient amount of detail to the PJM Manuals, explaining that this is appropriate in light of its broad definition of Component DER and multitude of configurations that may exist across its geographically diverse footprint.⁴⁶ PJM's proposed Tariff and Operating Agreement provisions state that the "DER Aggregator...shall provide telemetry for each DER Aggregation Resource participating in the energy, capacity, and/or ancillary services markets...in accordance with the technical specifications described in the PJM Manuals."⁴⁷
 - a. Please specify the proposed Tariff and Operating Agreement language that sets forth the telemetry scan rates and metering accuracy described in the Transmittal.⁴⁸
 - b. Please explain whether and to what extent the metering and telemetry requirements differ depending on whether Component DER participates in the energy, capacity, or ancillary services markets.
 - c. Please clarify whether the DER Aggregator is the entity responsible for providing any required metering and telemetry information to PJM.

⁴⁴ *Id.* P 270.

⁴⁵ Transmittal at 60.

⁴⁶ *Id.* at 61.

⁴⁷ Tariff, Attachment K-Appendix, section 1.4B(e) and Operating Agreement, Schedule 1, section 1.4B(e).

⁴⁸ Transmittal at 60.

- d. To the extent that PJM proposes that such information come from or flow through distribution utilities, please explain whether PJM coordinated with distribution utilities and RERRAs to establish protocols for sharing metering and telemetry data. If so, please describe such protocols and how they minimize costs and other burdens and address privacy and cybersecurity concerns.
2. PJM states that DER Aggregators will be required to provide all individual Component DER meter data necessary to facilitate the settlement of the DER Aggregator's DER Aggregation Resource, in accordance with existing standard metering requirements.⁴⁹ PJM further states that DER Aggregators will be required to ensure that Component DER within a DER Aggregation Resource provide integrated hourly kWh values on an electric distribution company account basis, and that a "representative sample" of Component DER have metering equipment that provides the same for non-interval metered residential DER Aggregation Resources.
 - a. Please explain whether and to what extent PJM's proposed metering requirements rely on meter data obtained through compliance with distribution utility or local regulatory authority metering system requirements for settlement and auditing purposes, and that PJM's requirements rely on existing telemetry infrastructure whenever possible.
 - b. Please explain in detail the information required and process by which a DER Aggregator would provide a "representative sample" of Component DER within a non-interval metered residential DER Aggregation Resource, and please explain whether this term is defined in the PJM Tariff, Operating Agreement, or PJM Manuals.
 - c. Please clarify whether PJM's proposed metering requirements allow the use of sub-metering (i.e., metering located at the Behind-the-Meter DER).

⁴⁹ Transmittal at 60-61.

VIII. Coordination between the RTO/ISO, Aggregator, and Distribution Utility

A. Role of Distribution Utilities

To implement § 35.28(g)(12)(ii)(g) of the Commission's regulations, Order No. 2222 required each RTO/ISO to develop a distribution utility review process that includes criteria by which distribution utilities would determine whether (1) each proposed distributed energy resource is capable of participation in a distributed energy resource aggregation; and (2) the participation of each proposed distributed energy resource in a distributed energy resource aggregation will not pose significant risks to the reliable and safe operation of the distribution system.⁵⁰ The Commission also stated that the distribution utility should have the opportunity to request that the RTO/ISO place operational limitations on an aggregation or removal of a distributed energy resource from an aggregation based on specific significant reliability or safety concerns that it clearly demonstrates to the RTO/ISO and distributed energy resource aggregator on a case-by-case basis.⁵¹

In Order No. 2222-A, the Commission clarified that, although it is providing each RTO/ISO with the flexibility to develop review procedures and criteria appropriate for its region, the Commission expects that the criteria proposed on compliance will require that an RTO/ISO decision to deny wholesale market access to a distributed energy resource for reliability reasons be supported by a showing that the distributed energy resource presents significant risks to the reliable and safe operation of the distribution system.⁵²

In Order No. 2222-A, the Commission clarified that RTO's/ISO must permit sharing any necessary information and data collected about the individual distributed energy resources participating in a distributed energy resource aggregation with distribution utilities and the distributed energy resource aggregator. Such information could include whether a resource affects the safety and reliability of the distribution system or is capable of participating in an aggregation.⁵³

⁵⁰ Order No. 2222, 172 FERC ¶ 61,247 at P 292.

⁵¹ *Id.* P 297.

⁵² Order No. 2222-A, 174 FERC ¶ 61,197 at P 76 (citing Order No. 2222, 172 FERC ¶ 61,247 at P 292) (referencing the criteria by which the distribution utilities will determine whether a proposed distributed energy resource will pose "significant risks to the reliable and safe operation of the distribution system").

⁵³ *Id.* P 75

In Order No. 2222-A, the Commission required that the review criterion on impacts on distribution system reliability must include “any incremental impacts from a resource’s participation in a distributed energy resource aggregation that were not previously considered by the distribution utility during the interconnection study process for that resource.”⁵⁴

In Order No. 2222, the Commission required each RTO/ISO to revise its tariff to incorporate dispute resolution provisions as part of its proposed distribution utility review process.⁵⁵ The Commission stated that each RTO/ISO should describe how existing dispute resolution procedures are sufficient or, alternatively, propose amendments to its procedures or new dispute resolution procedures specific to this subject.

In Order No. 2222-A, the Commission stated that disputes regarding the distribution utility review process—including those between non-host distribution utilities and a host distribution utility or the RTO/ISO—may be resolved through the RTO’s/ISO’s dispute resolution process, the Commission’s Dispute Resolution Service, or complaints filed pursuant to section 206 of the Federal Power Act at any time.⁵⁶

1. PJM in its proposal refers to the involvement of the “electric distribution company” in several sections of the Tariff, including those pertaining to metering, telemetry, and coordination.⁵⁷ While PJM does not define the term in the Tariff, it states that the use of the term “electric distribution company” is just and reasonable in the context of PJM’s demand response rules, and by extension, is just and reasonable in the context of Order No. 2222. PJM further states that it is open to considering a different definition and is willing to

⁵⁴ *Id.* P 79 (citing Order No. 2222, 172 FERC ¶ 61,247 at P 297).

⁵⁵ Order No. 2222, 172 FERC ¶ 61,247 at P 299.

⁵⁶ Order No. 2222-A, 174 FERC ¶ 61,197 at P 70 (citing Order No. 2222, 172 FERC ¶ 61,247 at P 299).

⁵⁷ *See, e.g.*, Tariff, Attachment K-Appendix, section 1.4B(e) (“The metering equipment shall meet the electric distribution company requirements for accuracy [...]”); Tariff, Attachment K-Appendix, section 1.4B(b) (“Prior to the initiation of the registration review process by the Office of the Interconnection, a DER Aggregator shall obtain and verify, through good faith efforts and in coordination with the applicable electric distribution company [...]).

provide a forum in the PJM stakeholder process to discuss the issue further.⁵⁸

- a. Please explain how PJM defines “electric distribution company” in the context of its existing demand response rules, and whether that definition would be the same under PJM’s DER Aggregator Participation Model.
2. PJM explains that, prior to the initiation of the formal registration process, a DER Aggregator must first obtain and verify certain location and data components in coordination with the applicable electric distribution company and, if necessary, any relevant transmission owner.⁵⁹ PJM further states that disputes over such pre-registration coordination would be resolved by the RERRA or otherwise in accordance with state or local law because the subject matter of such disputes is generally outside of PJM’s core competency.⁶⁰ PJM states that this pre-registration coordination is necessary because of the difficulty of data collection coordination is centered on the fact that the distribution system topology in PJM is extraordinarily diverse and complex, and does not have an existing unified “mapping” to corresponding transmission facilities.⁶¹
- a. Please explain how PJM would treat situations where the electric distribution company fails to coordinate with the DER Aggregator in a timely manner.
 - b. Please explain why and how PJM’s current system topology and its state of unified mapping necessitate pre-registration coordination outside of the 60-day distribution utility review timing specified in Order No. 2222.
 - c. Please explain how any necessary information and data collected about the individual distributed energy resources participating in a DER Aggregation by PJM

⁵⁸ Answer at 22.

⁵⁹ Transmittal at 26.

⁶⁰ *Id.* at 27, 64.

⁶¹ *Id.* at 65.

will be shared with distribution utilities and the distributed energy resource aggregator.

3. PJM states that once it has reviewed a DER Aggregator's registration and verified that the DER Aggregator meets the eligibility criteria for participation, it will then notify the relevant distribution utility "through the appropriate PJM system" to initiate the 60-day review process.⁶²
 - a. What PJM system is used to notify to the relevant distribution utility? Please identify the specific action that triggers initiation of the 60-day distribution utility review.
 - b. Please explain whether there is a time limit for PJM to review a DER Aggregator's registration for completeness and notify the relevant distribution utility.
4. PJM explains that any concerns identified by the distribution utility during the 60-day distribution utility review period may be resolved between the distribution utility and the DER Aggregator bilaterally, or through the applicable RERRA, prior to seeking initiation of the dispute resolution process described in Operating Agreement, Schedule 5.⁶³ If any such concerns are resolved during the 60-day review period, the distribution utility may recommend that PJM approve the registration; if not, then the distribution utility may recommend that PJM: (i) reject the registration; (ii) approve the registration with certain operational limitations on the DER Aggregation Resource identified in the registration; or (iii) approve the registration with the removal of one or more specific Component DER from the DER Aggregation Resource identified in the registration.

Tariff section 1.4B(b) further specifies that: "Within fifteen calendar days, the Office of Interconnection shall apply the applicable pricing points to the Component DER, and shall either approve or deny the DER Aggregator's registration based on the Office of

⁶² Transmittal at 28; Tariff, Attachment K-Appendix, section 1.4B(b); Operating Agreement, Schedule 1, section 1.4B(b).

⁶³ *Id.* at 30; Tariff, Attachment K-Appendix, section 1.4B(b); Operating Agreement, Schedule 1, section 1.4B(b).

Interconnection's review of the registration and receipt and review of the electric distribution company's comments and recommendation, with deference given to the electric distribution company's assessment of the impact of the DER Aggregator's registration on the safety and reliability of distribution facilities." PJM states that it will approve a DER Aggregator's registration in the event that the distribution utility does not provide any comments or recommendations within the 60-day review period. PJM states that it will apply the applicable pricing points to the Component DER, and either approve or deny the DER Aggregator's registration within 15 days of the conclusion of the 60-day distribution utility review period.⁶⁴

- a. Please explain whether there are any circumstances that would extend the 60-day distribution utility review period and forestall the automatic approval of a DER Aggregator's registration if the electric distribution company does not provide comments or a recommendation.
- b. Could the 60-day review period be paused by mutual consent of the electric distribution utility and the DER Aggregator to bilaterally resolve a concern?
- c. Could a distribution utility unilaterally request an extension of the 60-day review period to complete its review? If so, please explain what criteria would be used to evaluate such a request.
- d. Please explain whether entry in formal dispute resolution procedures described in Operating Agreement, Schedule 5 would pause the 60-day review window and forestall the automatic approval of a DER Aggregator's registration.
- e. Please describe any circumstances where the Office of Interconnection would approve or deny a DER Aggregator's registration contrary to the recommendation of the electric distribution utility.

⁶⁴ *Id.* at 30-31; Tariff, Attachment K-Appendix, section 1.4B(b); Operating Agreement, Schedule 1, section 1.4B(b).

- f. Please explain whether there are any circumstances where the Office of Interconnection would deny a DER Aggregator's registration when the electric distribution utility did not provide comments or a recommendation.
 - g. Please explain whether your answers to any of these questions are different for review of an initial registrant or of a modification to the list of resources.
5. Proposed Tariff section 1.4B(b) enumerates seven specific elements of the electric distribution utility review during the 60-day registration review process. Specifically, Tariff section 1.4B(b)(vii) states that the electric distribution company will review and verify that "The participation of the Component DER in the PJM energy, capacity, and/or ancillary service markets do not pose a threat to the reliable and safe operation of the distribution system, the public, or electric distribution company personnel." The Tariff further states that "[i]f the electric distribution company identifies concerns based on factors (i) through (vii) within the 60 calendar day review period, the electric distribution company may notify the Office of the Interconnection and the DER Aggregator, and the electric distribution company and the DER Aggregator may first attempt to resolve those concerns bilaterally, or in accordance with applicable state or local law, prior to seeking initiation of the dispute resolution process described in Operating Agreement, Schedule 5."⁶⁵
- a. Please explain the criteria, including any specific metrics, by which the electric distribution companies would determine whether the participation of each Component DER in the PJM energy, capacity, and/or ancillary service markets will pose a threat to the reliable and safe operation of the distribution system, the public, or electric distribution system company personnel.
 - b. Please explain whether this proposed Tariff language includes a requirement that an electric distribution utility provide a reliability showing to a DER Aggregator in the event reliability concerns are identified during the 60-day

⁶⁵ Transmittal at 30; Tariff, Attachment K-Appendix, section 1.4B(b); Operating Agreement, Schedule 1, section 1.4B(b).

review. If so, please explain which types and/or forms of evidence are acceptable in this showing.

- c. Please explain how the distribution utility review process will examine any incremental impacts from a resource's participation in a distributed energy resource aggregation that were not previously considered by the distribution utility during the interconnection study process for that resource.
- d. What is the process (including protocols or communications) that an electric distribution company will follow to notify a DER Aggregator of any specific concerns?
- e. Please explain where in the Tariff or PJM Manuals any such process (including protocols and communications) is specified.

B. Ongoing Operational Coordination

To implement section 35.28(g)(12)(ii)(g) of the Commission's regulations, in Order No. 2222, the Commission required each RTO/ISO to revise its tariff to (1) establish a process for ongoing coordination, including operational coordination, that addresses data flows and communication among itself, the distributed energy resource aggregator, and the distribution utility; and (2) require the distributed energy resource aggregator to report to the RTO/ISO any changes to its offered quantity and related distribution factors that result from distribution line faults or outages.⁶⁶ In addition, the Commission required each RTO/ISO to revise its tariff to include coordination protocols and processes for the operating day that allow distribution utilities to override RTO/ISO dispatch of a distributed energy resource aggregation in circumstances where such override is needed to maintain the reliable and safe operation of the distribution system.

1. PJM states that distribution utilities will communicate with the DER Aggregator or the DER Aggregation Resource dispatch agent to inform them of any distribution activities that may require Component DER to modify their operations. PJM explains that this includes activities such as distribution switching work for a pole hit or tree falling, which need to occur in real-time. PJM also states that, in the event that the distribution utility notifies the DER Aggregator of a modified operating range for the DER Aggregation

⁶⁶ Order No. 2222, 172 FERC ¶ 61,247 at P 310.

Resource and/or underlying Component DER, the DER Aggregator is expected to update its bidding parameters and capability in the PJM Real-time Energy Market.

- a. Please explain how distribution utilities will communicate distribution activities that may require a Component DER to have modified operations to the DER Aggregator or DER Aggregation Resource dispatch agent.
- b. Please explain who will be responsible for determining the modified operating range. If the DER Aggregator is responsible for this calculation, please explain the responsibilities of the distribution utility to communicate sufficient detail to the DER Aggregator to perform this calculation.

C. Role of Relevant Electric Retail Regulatory Authorities

To implement section 35.28(g)(12)(ii)(g) of the Commission's regulations, in Order No. 2222 the Commission required each RTO/ISO to specify in its tariff, as part of the market rules on coordination between the RTO/ISO, the distributed energy resource aggregator, and the distribution utility, how each RTO/ISO will accommodate and incorporate voluntary RERRA involvement in coordinating the participation of aggregated distributed energy resources in RTO/ISO markets.⁶⁷

1. PJM states that RERRAs will play a role in overseeing and settling disputes between DER Aggregators and distribution utilities during pre-registration bilateral coordination regarding the locational and data components necessary for the DER Aggregator's registration with PJM. PJM also states that RERRAs are an option for parties to settle disputes prior to initiating the PJM dispute resolution process; and PJM will require that parties take disputes to the applicable RERRA when the dispute arises under any applicable tariffs, agreements, and operating procedures of the electric distribution company, or the rules and regulations of the RERRA.
 - a. Please explain how participation in a RERRA dispute resolution process during registration impacts the timing of the 60-day review window.

⁶⁷ *Id.* P 322.

IX. Modifications to List of Resources

In Order No. 2222, the Commission required each RTO/ISO to revise its tariff to specify that distributed energy resource aggregators must update their lists of distributed energy resources in each aggregation (i.e., reflect additions and subtractions from the list).⁶⁸

In Order No. 2222-A, the Commission encouraged the RTOs/ISOs to propose abbreviated distribution utility review processes for modifications to existing aggregations.⁶⁹ The Commission also limited the length of the distribution utility review period to no more than 60 days.⁷⁰

1. PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(b) states in part that a "DER Aggregator shall report to the Office of the Interconnection any proposed update to the inventory of the individual Component DER within the DER Aggregation Resource, or proposed *additional* market services provided by the DER Aggregation Resource, identified in the DER Aggregator's registration to reflect any proposed *addition or subtraction* of a Component DER or market service, and any applicable information or data associated with the Component DER or market service, in accordance with the specifications described in the PJM Manuals" (emphasis added).
 - a. Please explain why PJM proposes to require reporting only additional market services when such reporting is intended to reflect any proposed addition or subtraction of market services.
2. PJM's proposed Tariff, Attachment K-Appendix, section 1.4B(b) states in part that "[u]pon notification of any proposed update, the electric distribution company shall have an opportunity to conduct a review, for a period of up to 60 calendar days, in accordance with

⁶⁸ Order No. 2222, 172 FERC ¶ 61,247 at P 336; *see id.* P 239 (clarifying that the distributed energy resource aggregator, not an individual distributed energy resource in the aggregation, is the single point of contact with the RTO/ISO, and the aggregator would be responsible for managing, dispatching, metering, and settling the individual distributed energy resources in its aggregation).

⁶⁹ Order No. 2222-A, 174 FERC ¶ 61,197 at P 71.

⁷⁰ *Id.* P 72.

the provisions of this section related to initial registration, and make a recommendation to the Office of the Interconnection, prior to the Office of the Interconnection approving or denying the proposed update to the DER Aggregation Resource.”

- a. Please explain whether and to what extent the pre-registration process that PJM proposes in Tariff, Attachment K-Appendix, section 1.4B(b) applies to any modifications to an existing DER Aggregation Resource. Please also explain whether or not PJM’s review of an EDC’s review of a modification incorporates the same deference that applies to an initial registration, i.e., the following proposed language (emphasis added) in Tariff, Attachment K-Appendix, section 1.4B(b): “Within fifteen calendar days, the Office of the Interconnection shall apply the applicable pricing points to the Component DER, and shall either approve or deny the DER Aggregator’s registration based on the Office of the Interconnection’s review of the registration and receipt and review of the electric distribution company’s comments and recommendation, *with deference given to the electric distribution company’s assessment of the impact of the DER Aggregator’s registration on the safety and reliability of distribution facilities.*”
3. With respect to the capacity market, PJM’s proposed Tariff, Attachment K-Appendix, section 1.4B(b) states that an “inventory of the individual Component DER within a DER Aggregation Resource registration that is linked to a DER Capacity Aggregation Resource may not be modified during the course of an applicable Delivery Year.”⁷¹
 - a. What is the timeline for a DER Aggregator to modify the “inventory of individual Component DER within a DER Aggregation Resource registration that is linked to a DER Capacity Aggregation Resource”? Please indicate whether this timeline is included in the Tariff and, if so, where.

⁷¹ Transmittal at 83-84.

X. Effective Date

In Order No. 2222, the Commission required each RTO/ISO to propose a reasonable implementation date, together with adequate support explaining how the proposal is appropriately tailored for its region and implements Order No. 2222 in a timely manner.⁷² The Commission stated that it will establish on compliance the effective date for each RTO's/ISO's compliance filing.

1. PJM requests an effective date of February 2, 2026 for the Tariff, Operating Agreement, and RAA revisions.⁷³ With respect to the proposed revisions specific to the DER Aggregator offering a Planned DER Capacity Aggregation Resource, PJM requests an effective date of July 1, 2023 to allow Planned DER Capacity Aggregations Resources to participate in the 2026/2027 Delivery Year BRA. PJM states that it is requesting these specific effective dates in part because it will need to plan and budget for a number of software and application changes to support the DER Aggregator Participation Model. PJM also states that there is a larger coordination effort remaining for business practice changes before implementation, included but not limited to RERRA readiness, utility readiness, and PJM readiness. In its Answer, PJM contends that the proposed revisions to become effective in 2023 will not invoke the commencement of the registration process, or imply expectations on RERRAs and distribution utilities to complete interconnection, review aggregations for reliability, or review viability for wholesale participation.⁷⁴
 - a. Please clarify and provide as much detail as possible regarding important milestones and timetables of the software and application upgrades for the Tariff, Operating Agreement, and RAA revisions effective February 2, 2026.
 - b. Please explain in more detail whether the proposed July 1, 2023 effective date for the provisions pertaining to Planned DER Capacity Aggregation Resources takes into consideration appropriate time for affected parties

⁷² Order No. 2222, 172 FERC ¶ 61,247 at P 361.

⁷³ Transmittal at 89-90.

⁷⁴ Answer at 23.

(namely, RERRAs and distribution utilities) to implement the policies, procedures, and processes necessary for DER Aggregators to participate in the 2026/2027 Delivery Year BRA.

- c. Please explain whether any double compensation may occur as a result of the staggered implementation dates for the Planned DER Capacity Aggregation Resources and remaining provisions that include protections against double compensation. Specifically, is there any concern that a Component DER that participates in a retail program may offer into the capacity market as part of a Planned DER Capacity Aggregation Resource during the intervening period between July 1, 2023 and February 2, 2026 and potentially receive double compensation in both the wholesale markets and retail programs for the same product during the 2026/2027 Delivery Year or beyond?

This letter is issued pursuant to 18 C.F.R. § 375.307 (2021) and is interlocutory. This letter is not subject to rehearing under 18 C.F.R. § 385.713.

A response to this letter must be filed within 30 days of the date of this letter in accordance with the Commission's electronic tariff requirements using Type of Filing Code 80 – Compliance.

Failure to respond to this letter order within the time period specified may result in a further order rejecting your filing.

Issued by: Kurt Longo, Director, Division of Electric Power Regulation – East

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