



Order No. 2222 Tariff Redline Review

PJM Staff

DISRS

August 16, 2023

- **Order:** PJM must clarify the entities that may present evidence of a RERRA's opt-in determination to PJM and the manner in which such evidence may be presented to PJM.
- **Tariff Redlines:** None
- **Response:** PJM will clarify in the transmittal letter that:
 - The EDC is the entity responsible for presenting evidence of a RERRA's opt-in determination to PJM & should email the evidence to PJM
 - The Aggregator or RERRA may provide this evidence to the EDC and the EDC will submit it to PJM
 - If either the Aggregator or RERRA do not see evidence of the RERRA's opt-in on pjm.com, they may contact PJM and we will resolve the issue.

- **Order:** PJM must clarify that the demand response opt-out rules 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) will be used to demonstrate that a RERRA has prohibited the participation of demand response in the DER Aggregator Participation Model.
- **Tariff Redlines:**

The 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~~Electric Distribution Company that distributed more than 4 million MWh in the previous fiscal year, as identified by the ~~electric distribution company~~Electric Distribution Company, unless the DER Aggregation Resource 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, pursuant to the rules 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).

P 106: Settlement of Continuous Resources

- **Order:** PJM must specify the market rules in its tariff regarding compensation and settlement of DER Aggregation Resources with both injecting and curtailment capability, including those that can reflect both attributes at a single Component DER site.

- **Tariff Redlines:**

(n) ~~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.~~

A DER Aggregator's DER Aggregation Resource shall be accounted for and settled, in the Day-ahead and Real-time energy market by summing all load reduction and injection MWh for the underlying Component DER within the Aggregation. The performance of Component DER that has both load reduction and injection capability shall be calculated as follows:

(i) load reduction to 0 MWh shall be calculated in accordance with Tariff, Attachment K-Appendix, sections 1.5A and 3.3A and Operating Agreement, Schedule 1, sections 1.5A and 3.3A;

(ii) Injection shall be determined in accordance with the Day-ahead Energy Market and Real-time Energy Market rules as specified in Tariff, Attachment K-Appendix, section 3.1A, and Operating Agreement, Schedule 1, section 3.1A.

- **Order:** PJM must clarify why its Tariff assesses whether the “same product is not also credited as part of a retail program” rather than whether the same service is not also being provided in a retail program, to include an explanation of how this language is consistent with Order No. 2222 or revise this language such that it is consistent with Order No. 2222.

- **Tariff Redlines:**

(h) A DER Aggregator may participate in the PJM energy, capacity, and/or ancillary services markets through the DER Aggregator Participation Model using DER Aggregation Resources containing one or more Component DER that also participate in one or more retail programs. The Office of the Interconnection shall only credit a DER Aggregator for the sale of a product or service in the PJM energy, capacity, and/or ancillary services markets if that same product or service is not also ~~credited-provided~~ as part of a retail program, including but not limited to a Component DER participating in a retail net energy metering program.

A DER Aggregator may participate in the PJM energy, capacity, and/or ancillary services markets through the DER Aggregator Participation Model using DER Aggregation Resources that provide multiple services in the PJM energy, capacity, and/or ancillary services markets through the DER Aggregator Participation Model. A Component DER shall not be registered with multiple DER Aggregation Resources, or participate as part of another Market Participant outside of the DER Aggregator Participation Model. The Office of the Interconnection shall only credit a DER Aggregator for the sale of a product or service in the PJM energy, capacity, and/or ancillary services markets if that same product is not also ~~credited-provided~~ as part of another wholesale sale.

P 138: Ancillary Services & Double Counting

- **Order:** PJM must clarify whether an EDC during its review may raise concerns about whether Component DER should be precluded from providing ancillary services in PJM markets to avoid double counting.
- **Tariff Redlines:** None
- **Response:** PJM will clarify in the transmittal letter that:
 - EDCs may raise all concerns regarding double counting related to a Component DER, including those that are based on the provision of ancillary services, during the first 15 days review period & recommend that PJM reject the location.

- **Order:** PJM must explain how its proposed general exclusion from the energy and capacity market of Component DER that are not participating in net energy metering retail programs but are located at sites where at least one resource is participating in a net energy metering retail program is narrowly designed, and if necessary, to revise its restriction.
- **Tariff Redlines:** None
- **Response:** PJM will explain in the transmittal letter that:
 - A Component DER is one location and one location is associated with one meter.
 - To the extent that multiple resources exist behind one meter, there is still only one data stream.
 - PJM cannot differentiate between which resources behind a single meter *are* and *are not* compensated via NEM. If there are injections, for example, it is not possible to tell whether the generator doing the injecting is a solar system or a battery.
 - As such, PJM maintain a whole-premise exclusion on NEM-compensated Component DER.

- **Order:** PJM must either: (1) provide a detailed technical explanation to demonstrate that it is not technically feasible for any Component DER to aggregate more broadly than a single-node, as proposed, for energy market participation; or (2) propose alternative locational requirements for energy market participation that are as geographically broad as technically feasible.
- **Tariff Redlines:** See posted draft redlines.
- **Response:**
 - PJM will permit multi-nodal aggregations across one EDC territory and transmission zone in cases where Component DER cannot aggregate to 100 kW within a single pricing node.
 - Multi-nodal aggregations must comprise one or more Component DER with capability smaller than 100 kW, *unless* the total capability of all other Component DER in an aggregation is below the 100 kW participation threshold. In such cases, one “anchor”—*one* Component DER or group of Component DER ≥ 100 kW at a single node will be permitted.
 - The multi-nodal cap will be 167 MW, subject to adjustment once $>90\%$ of the cap is reached.

- **Order:** PJM must revise its tariff as needed to 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.
- **Tariff Redlines:** None
- **Response:** The use of distribution factors is not proposed.

P 221: Evidence of Approval to Interconnect

- **Order:** PJM must clearly identify and explain the information that it requires for “[e]vidence of approval to interconnect, including but not limited to a finalized interconnection agreement, with the applicable Component DER.” Further, PJM should explain whether the required interconnection agreement should be between the electric distribution company and the Component DER, or the electric distribution company and the DER Aggregator.
- **Tariff Redlines:** Propose to remove of this language from the Tariff. All specific information and data requirements will be described in the relevant PJM Manuals.
- **Response:** Explain in Transmittal Letter that the intent was to require the DER Aggregator to provide a final interconnection agreement *or equivalent* as not all resources have an actual interconnection agreement.

- **Order:** 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.
- **Tariff Redlines:** Propose to remove this language from the Tariff. All specific information and data requirements will be described in the relevant PJM Manuals.
- **Response:** Explain in Transmittal Letter that the intent was to require the DER Aggregator to provide a physical address or GPS coordinates. The transmission system electrical location is the electrical node on the PJM Transmission System, to be provided by the EDC, and is necessary for PJM to assign a pricing node to the Component DER.

- **Order:** PJM must clearly identify and explain the specific information that the DER Aggregator is required to obtain and verify in coordination with the electric distribution company regarding “compliance with applicable PJM and electric distribution company metering and telemetry requirements.”
- **Tariff Redlines:** Propose to remove this language from the Tariff. All specific information and data requirements will be described in the relevant PJM Manuals.
- **Response:** Explain in Transmittal Letter that the intent was to require the DER Aggregator to ensure that the metering and telemetry at a Component DER site met PJM’s metering and telemetry requirements prior to registering the Component DER as a location in PJM’s system. The DER Aggregator would indicate that it has done so via an attestation.

- **Order:** PJM must revise its tariff to include the meter data submission deadline for settlement.
- **Tariff Redlines:**

A DER Aggregator shall 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. 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. A DER Aggregator is responsible for ensuring that Component DER within a DER Aggregation Resource have metering equipment that provides integrated hourly kWh values on an ~~electric distribution company~~Electric Distribution Company account basis. For non-interval metered residential DER Aggregation Resources, the DER Aggregator must ensure that a representative sample of Component DER have metering equipment that provides integrated hourly kWh values on an ~~electric distribution company~~Electric Distribution Company account basis, as set forth in the PJM Manuals. For DER Aggregation Resources containing Component DER that are mass market customers, DER Aggregators shall provide aggregated meter data to the Office of the Interconnection for the settlement of the DER Aggregator's DER Aggregation Resource. Meter data must be submitted to the Office of Interconnection within one business day. The measurement systems shall comply with the applicable ~~electric distribution company~~Electric Distribution Company accuracy requirements for meters, and/or as described in the PJM Manual 01. Additional details for the configuration of such measurement systems under various specific configurations are specified in PJM Manual 14D.

- **Order:** PJM must clarify that a DER Aggregation Resource under 10 MW that is only participating in the energy market is exempted from telemetry requirements.
- **Tariff Redlines:**

(e) A DER Aggregator or the entity responsible for physically operating the Component DER within a DER Aggregation Resource and/or dispatching a DER Aggregation Resource shall provide telemetry for each DER Aggregation Resource participating in the energy,

capacity, and/or ancillary services markets of PJM through the DER Aggregator Participation Model, in accordance with the technical specifications described in the PJM Manuals. A DER Aggregator or the entity responsible for physically operating the Component DER within a DER Aggregation Resource and/or dispatching a DER Aggregation Resource may provide telemetry for the individual Component DER within a DER Aggregation Resource. This telemetry shall represent one or more values indicative of the total electrical output of the DER Aggregation Resource and inclusive of all underlying Component DER. This telemetry requirement shall not apply to a DER Aggregation Resource exclusively participating in the energy market that is less than 10 MW, notwithstanding the technical specifications described in the PJM Manuals.

- **Order:** PJM must specify that the distribution utility review period for incremental changes occurs upon PJM transmitting the necessary information to the electric distribution company and clarify that only the distribution utility hosting a Component DER has the opportunity to review the addition of that resource to a DER Aggregation Resource.
- **Tariff Redlines:**

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. Any proposed update shall not require a new registration of the existing Component DER within the approved DER Aggregation Resource. Upon the Electric Distribution Company's receipt of notification of any proposed update, including all applicable information or data, the host electric distribution company Electric Distribution Company shall have an opportunity to conduct a review, for a period of up to 60 calendar days the first and/or second review period, in accordance with 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. The DER Aggregator may continue to

- **Order:** PJM must revise its distribution utility review process to comply with the requirement to provide adequate and reasonable time for distribution utility review that does not exceed 60 days.
- **Tariff Redlines:** Propose design the utility review period as follows (see posted redlines for specific language):
 - Following submission of a Component DER and all related data, the EDC will have up to 15-days to review the information provided and recommend approval or rejection of the location
 - During these 15 days the EDC will also provide the electrical node to the Component DER and PJM will assign it the relevant pricing node
 - Following the first 15 day review, the DER Aggregator will designate resources comprising one or more Component DER.
 - Following the formation of resources, the EDC will have up to 45 days to perform a reliability review of the aggregation.

- **Order:** PJM must revise its tariff to designate the DER Aggregator as responsible for dispatching the Component DER in its aggregation or to explain how its proposed tariff language is consistent with this requirement.
- **Tariff Redlines:**

~~During the registration process, the responsibility for physically operating the Component DER within a DER Aggregation Resource and/or dispatching the DER Aggregation Resource will be assigned to the electric distribution company, the DER Aggregator, or another entity, in accordance with any applicable tariffs, agreements, and operating procedures of the electric distribution company, and/or the rules and regulations of any Relevant Electric Retail Regulatory Authority.~~

- **Order:** PJM must share with the DER Aggregator any information regarding a Component DER that is provided by a distribution utility to PJM as part of the distribution utility review process
- **Tariff Redlines:**

Within the first fifteen calendar days, and in coordination with the Office of Interconnection, the Electric Distribution Company shall also assign the electrical node on the PJM Transmission System to each Component DER. The Office of the Interconnection shall ensure that any information regarding Component DER that the Office of the Interconnection receives from an Electric Distribution Company or a DER Aggregator is accessible to both the Electric Distribution Company and the DER Aggregator.

- **Order:** PJM must revise the fifth participation criterion to address whether the aggregation complies with rules of any applicable RERRA.
- **Tariff Redlines:**

iiiv. The Component DER in a DER Aggregation Resource Aggregator's participation in the PJM energy, capacity, and/or ancillary service markets complies with the rules and regulations of any applicable Relevant Electric Retail Regulatory Authority;

- **Order:** PJM must revise its tariff to include specific, transparent criteria by which an electric distribution company will determine during its review whether each proposed Component DER is capable of participating in a DER Aggregation Resource and to explain why these criteria are appropriate for the PJM region, as required by Order No. 2222.
- **Tariff Redlines:**
 - ~~i. The location and data components, including the Electric Distribution Company customer account number and associated physical location such as an address, that represents each Component DER, as further defined in the relevant PJM Manuals, are accurate~~
~~Operational and physical characteristics, including an inventory of the individual Component DER location-specific capability to reduce load and/or produce electricity;~~
 - ~~ii. The specific PJM markets in which the DER Aggregation Resource plans to participate and, if applicable, the effective and termination dates for participation;~~
 - ~~iii. The electric distribution company customer account number(s) which represent Component DER location(s) and related information, as defined in the PJM Manuals;~~

- **Order:** PJM must clarify that the scope of the distribution utility review of distribution system reliability impacts is limited to 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.
- **Tariff Redlines:**

vii. — The participation of the ~~Component DER~~ DER Aggregation Resource 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~~ Electric Distribution Company personnel. The scope of the Electric Distribution Company review of distribution system reliability impacts shall be limited to any incremental impacts arising from a Component DER participation in a DER Aggregation Resource that were not previously considered by the Electric Distribution Company during the interconnection study process for that Component DER at the state level.

- **Order:** PJM must address how PJM will resolve disputes that it determines are within its authority and subject to its tariff.
- **Tariff Redlines:**

Schedule 5. Disputes ~~arising under~~that the Office of the Interconnection determines solely concern the interpretation of any applicable tariffs, agreements, and operating procedures of the ~~electric distribution company~~Electric Distribution Company, and/or the rules and regulations of any Relevant Electric Retail Regulatory Authority, shall be ~~addressed~~resolved in accordance with applicable state or local law, and shall not be arbitrated or in any way resolved by the Office of the Interconnection or through the dispute resolution processes under Operating Agreement, Schedule 5. Disputes that the Office of the Interconnection determines solely concern the provisions in Tariff, Attachment K-Appendix, section 1.4B(b) may be arbitrated under the dispute resolution processes under Operating Agreement, Schedule 5.

- **Order:** PJM must revise its tariff to include a definition of electric distribution company.
- **Tariff Redlines:**

Electric Distribution Company

"Electric Distribution Company" shall mean, exclusively for purposes of the Tariff, Attachment K-Appendix, section 1.4B and Operating Agreement Schedule 1, section 1.4B, a PJM Member, or an entity that mutually agrees with a PJM Member that the PJM Member shall represent the entity and act on their behalf, that owns or leases with rights equivalent to ownership, electric distribution facilities that are used to provide electric distribution service to electric load within the PJM Region under rates and tariffs approved or authorized by the applicable Relevant Electric Retail Regulatory Authority.

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P 354: Operational Coordination & Overrides

- **Order:** PJM must revise its tariff to include the coordination protocols and processes for the operating day that allow distribution utilities to override PJM's dispatch.

- **Tariff Redlines:**

During the Operating Day, the Office of the Interconnection shall dispatch DER Aggregation Resources, by communicating with the entity responsible for physically operating the Component DER within a DER Aggregation Resource and/or dispatching a DER Aggregation Resource, in accordance with the DER Aggregator's submitted bidding parameters. During the Operating Day, an ~~electric distribution company~~Electric Distribution Company may exercise its ability to override the physical operation of a DER Aggregation Resource or individual Component DER within a DER Aggregation Resource, for purposes of maintaining safe and reliable operation of distribution facilities, pursuant to any applicable tariffs, agreements, and operating procedures of the ~~electric distribution company~~Electric Distribution Company, and/or the rules and regulations of any Relevant Electric Retail Regulatory Authority. The Electric Distribution Company may communicate the decision to override the physical operation of a DER Aggregation Resource or individual Component DER within a DER Aggregation Resource directly to the DER Aggregator. Following the exercise of the ~~electric distribution company~~Electric Distribution Company's override, the DER Aggregator shall reflect the override by updating the applicable bidding parameters of its DER Aggregation Resource. The Office of the Interconnection shall not take any actions to interrupt or interfere with the Electric Distribution Company's decision to override and will re-dispatch the DER Aggregation Resource to reflect its updated bidding parameters.

- **Order:** PJM must specify the existing non-performance penalties that will apply to a DER Aggregation Resource when the DER Aggregation Resource does not perform because an electric distribution utility overrides PJM's dispatch.
- **Tariff Redlines:** PJM will not enumerate the specific penalties that may apply as a result of non-performance following utility override to avoid inadvertent exclusion.

An ~~electric distribution company~~Electric Distribution Company's override shall not excuse a DER Aggregator from any financial obligations's for failure to perform any of the obligations established under the PJM Tariff, Operating Agreement, RAA, or PJM Manuals for the relevant PJM capacity, energy, and/or ancillary services markets.

- **Order:** PJM must establish a process for ongoing coordination, including operational coordination, that addresses data flows and communication between PJM and the distribution utility in both day-ahead and real-time markets.
- **Tariff Redlines:** None
- **Response:** Although the EDC and PJM will coordinate information for the purposes of smooth operations, all formal communications (e.g., dispatch instructions, override decisions) will go to and through the DER Aggregator.

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