



# **AEMA Comments on PJM's Initial DER Strawman**

May 19, 2021

PJM DIRS



# Advanced Energy Management Alliance

*Empowering consumers through  
distributed energy resources, including  
demand response and advanced energy  
management*

We are providers and consumers united to overcome barriers to nationwide use of distributed energy resources . We advocate for and educate on policies that empower and compensate consumers to have cost-effective, efficient, resilient, reliable, and environmentally-sustainable choices.

These remarks represent the view of AEE as an organization, and do not necessarily represent the views of individual AEE members.

# General Feedback

- AEMA thanks the PJM team for the work that went into the straw proposal, and for PJM's willingness to meet with stakeholders and incorporate feedback
- There are still several key improvements that will be necessary, but the PJM straw proposal helps lay the foundation for a DERA Model

# General Feedback and Recommendations on Issues Not Addressed by PJM

- The straw proposal needs more detail on how certain BTM DERs (e.g. solar) will participate in a DERA
- PJM's next iteration should include a participation option for all forms of DERs; at a minimum, this should include the capacity market, and where appropriate, energy and ancillary services
- The existing EE model offers a useful template for DERs such as PV
- PJM should allow capacity market participation from all DERs; EDCs can reject registration of net-metered resources if the Capacity Seller does not have capacity rights over the DER



# General Feedback and Recommendations on Issues Not Addressed by PJM

- PJM Straw Proposal does not address how frequently discharging BTM DERs (e.g. storage/electric school bus) will participate, and how to address baseline erosion and reduces emergency energy payments and 30 minute reserves revenues
- **Recommendation:** In its next straw proposal, PJM should incorporate the FERC-approved NYISO model and allow CBL addbacks to the facility baseline for any energy that is cleared/delivered in the market, only looking back a max of 10 days including event days

# Design Element – PJM Planning Requirements

Slide 21\* - “PJM Planning Model Bus ID distribution line is fed from”

- Clarification question: Who has to get this and how will they get it?
- Recommendation: The registration (pre-registration?) process should specify how DER Aggregators obtain node information.

\* Slide numbers refer to PJM's 4/27 deck

# Design Element – Opt-In

## PJM Slide 29

- DR Opt-in/Opt-out process would apply to the following resources participating in a homogenous aggregation:
  - Resources participating with load curtailment and FTM injections in PJM Markets (TBD)
- Clarification Question: What part of Order 2222/2222-A is PJM relying on for this determination?

# Design Element – Location and Operations

PJM slides 30-47

General Comments –

- Nodal aggregation and weighting approaches appear to be closely related to concerns about LMP modeling
- A related concern is that dispatch of aggregated DERs could aggravate constraints in some instances where the aggregations spans a constraint.
  - Need to further explore whether multi-node aggregations can be structured such that they do not span prevailing constraint locations.



# Design Element – Location and Operations

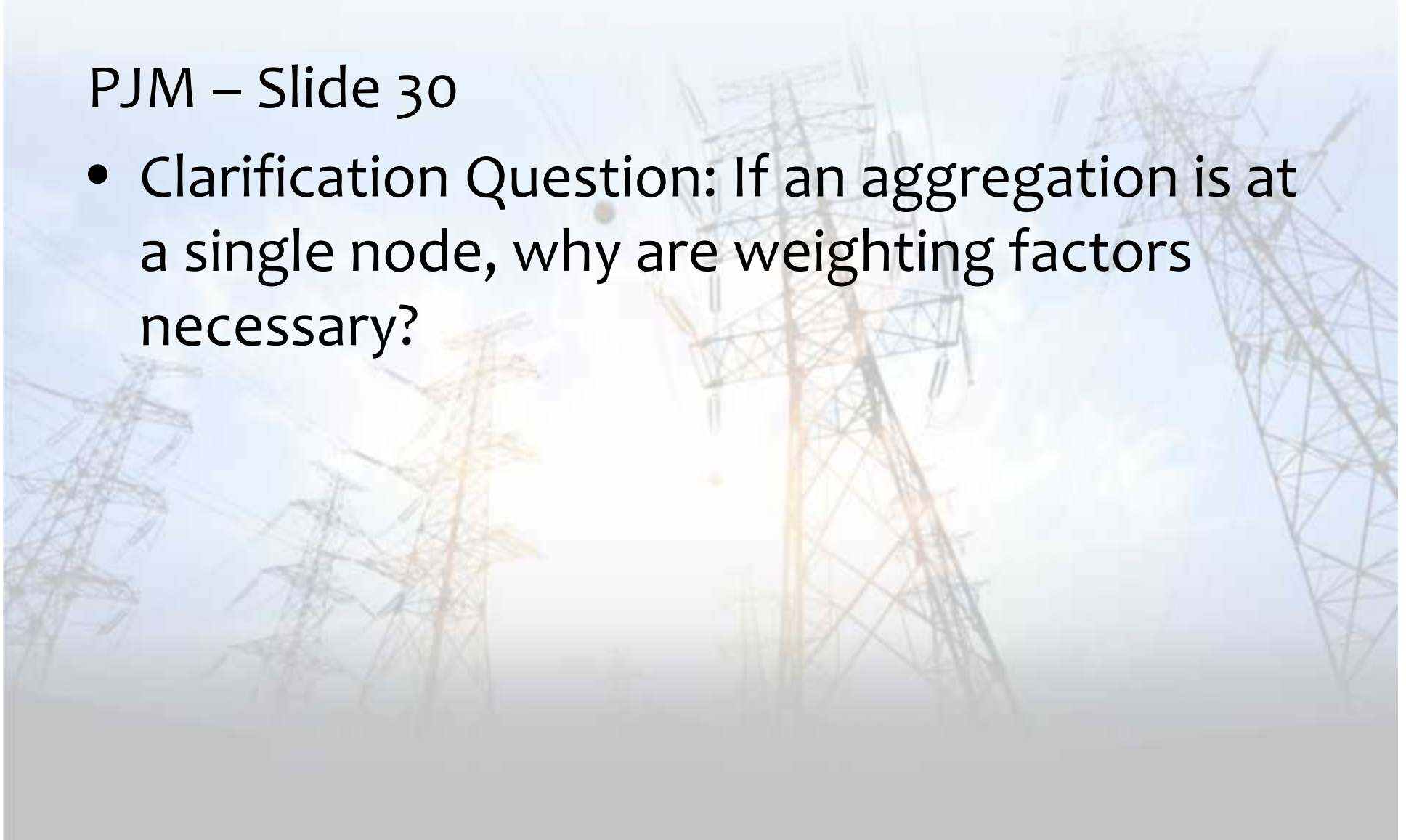
PJM slides 30-47

- Node mapping – AEMA is concerned that limiting aggregations to a single node will result in a) smaller DERs not meeting the 100 kW minimum threshold and b) large numbers of very small “aggregations”, thwarting the goals of aggregation itself.
  - FERC directs: “Establish locational requirements for DER aggregations that are as geographically broad as technically feasible.”
- Recommendations
  - Enable multi-node aggregations.
  - Investigate the feasibility of limiting aggregations only across nodes with frequent constraints, while allowing larger aggregations across nodes that are seldom constrained;
  - In more constrained areas, at least allow smaller DERs to aggregate across nodes to meet the 100 kW threshold as long as they don’t exceed 1 MW
  - Broad aggregation for capacity and ancillary services is necessary

# Design Element – Weighting Factors

PJM – Slide 30

- Clarification Question: If an aggregation is at a single node, why are weighting factors necessary?



# Design Element – Location and Operations

PJM slides 30-47

Weighting of DERs within aggregations

- Many DERs will have variable weighting factors through the day:
  - Solar, DR, wind
- Slide 43 – real time updates of weighting factors:
  - Factors are almost surely going to be estimates.
- Balance between precision and resource participation should be considered
- The size/impact of the DERA relative to overall load in the aggregation zone should be considered.

# Telemetry

PJM Slides 41-42

- Generally agree telemetry for aggregations only and not individual sites. GG1
- Clarification Question: What is the justification for 10 second scan rate for energy market participation? Current SRM scan rate for DR is 60 seconds, and would recommend that be minimum for energy
- Recommendation: Telemetry for individual DER sites should be limited to larger sites.
- Recommendation: Exempt or modify telemetry requirements for smaller DERs where fixed cost of telemetry could be barrier to entry



# Design Element – Operational Needs

## Slide 43

- Clarification Questions:
  - Why does outage information need to be provided to PJM at the individual DER level for capacity resources?
  - Is this necessary if the aggregation can still meet its commitment to PJM?
  - Wouldn't PJM only need to know if the aggregation was not able to meet a committed/scheduled value?

# Market Participation Model

PJM Slides 50-64

- Consider a separate Model for DERA<sup>GG2</sup><sub>GG3</sub> that does not participate in energy markets (especially if unable to accommodate large multi-node aggregations).

# Design Element – Market Participation Model

Slide 56 - Planned resources

- **Recommendation:** PJM should not require DERA to specify location of BTM DERs before the BRA (i.e. no interconnection agreement required unless the resource is a single DER > 5 MW)
- Requiring this before the auction runs contrary to DER model. PJM proposal for ISA requirement for 25kW and above will discriminate against DERS and can exclude significant amounts of DER that have much shorter development cycles than the traditional central stations that the 3 year forward market was designed around.
- If this is because of MOPR, then don't design it with expectation that MOPR will still be there
- For FTM resources, reasonable to have an Interconnection Agreement

# Design Element – Market Participation Model

Slide 57

Option 1 (Cost based offers)

- “No dispatch excusal if resources are self-committing or dispatched by utility for reliability”
- Clarification Question: Can PJM elaborate on this? We assume this means that a DERA that self-commits for hours outside of a PAI will be assessed penalties if they are not providing energy or reserves during a PAI window, but please confirm?



# Market Participation Model

## Slide 57

- Clarification Question: Could a DERA using Option 1 also participate in the reserves market? How would this DERA be assessed for penalties/bonuses during PAI?
- Clarification Question: Is there a requirement for battery to charge at wholesale, or could it charge at retail if the customer preferred not to be sub-metered?

# Market Participation Model

PJM Slides 50-64

Cost based offers

- DER “costs” can be expected to be highly variable from day to day and perhaps during days. This will be a barrier to entry and administrative nightmare for all parties.
- DER with DR elements will have “costs” that can’t be reconciled to publicly available data.
- The Three Pivotal Supplier (TPS) test is unique to PJM and a key reason why alleged market power concerns become an issue for DERs.
  - Consider exempting DERs from TPS, perhaps below a size or dfax impact on common constraints
- The “self-schedule” option should be available but should not be the only option.
- For offers  $< \$1,000/\text{MWh}$ , instead of cost-based offers, pursue higher level approach that allows DERAs to explain general offering behavior and obtain agreement from PJM (e.g. a DERA comprised of storage will offer at  $\$1,000/\text{MWh}$  because saving battery charge for high demand charges, but battery will self-schedule when discharging for DCM)

# Market Participation Model

PJM Slides 50-64

Cost based offers – Continued

- Consider an administratively simple proxy/default method for option for cost based offers where needed are.
- Reserves – Slide 63
  - Consider using the DR participation model: DERA has the option to offer reserves.

# Min/Max Size

- PJM Slides 65-68
- PJM proposes maximum size of 5MW for an individual site. Alternatives 1 and 2 are supportable:
  - (1) DERs >5MW may participate in a DERA, given they satisfy the other DERA participation requirements, but would be subject to providing individual telemetry/metering on the resource and/or participating as an aggregation of 1.
  - (2) Requirement for DERs >5MW, injecting past the customer meter to be ineligible to participate in DERA. DERs with sole activity behind the meter would not be subject to a maximum size requirement.



# Metering

## PJM Slides 68-70

- PJM proposes that settlement data be submitted on the next business day. This could be problematic for mass market DERs such as solar with batteries. It would likely require a data logger for each site – an expensive proposition.
  - Suggestion - permit estimates of settlement data on the next day for broader market settlement and allow final reconciliation against meter data on a longer time frame.

# Use Cases

Slide 83 – Use Case: A resource operating behind a meter that also injects past the meter.

- Recommendation: Option 2 appears workable, but need metering configuration to accurately capture full capacity value of all DERs at a site
- For instance, if there were 4 MW of solar and 3 MW of load, then a total of 7 MW should be allowed to be enrolled in the capacity market
- Would need to meter the solar and the retail delivery point separately
- Existing DR resources should also be able to utilize this configuration to capture export values



# Questions?

To learn more about the Advanced Energy Management Alliance, visit our website.

[www.aem-alliance.org](http://www.aem-alliance.org)

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