PJM considerations of DER in future technology endeavors (modeling and otherwise)
Educational Dialog

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Generators in PJM footprint

Wholesale Market

Capacity / Energy Generators
- Demand Response
  - ≥ 1 MW
- < 1 MW

DER and non-DER are modeled the same
- ≥ 1 MW
- < 1 MW

Not modeled in EMS
- Non-Wholesale DER
- All treated the same; no distinction for Non-Retail
- Not modeled in EMS

Behind-the-Meter
Current Modeling Processes for Non-Wholesale DER

**All Solar**
- Forecasting
- Integrating into load forecast

**All ≥ 1 MW**
- Mapping in GIS tool
- Including in load relief reports

**All ≥ 10 MW**
- Modeling in EMS
- Obtaining real-time telemetry

*May also include smaller units when warranted by reliability concerns*
Model Vision 2025 Principles

- Drive modeling standards and model process efficiency across PJM and members
- Consider analytical modeling requirements
- Continually improve model quality and mitigate against single points of failure
- Consider generation and transmission owners’ dependency and involvement
- Consider time-based elements and allow for efficient updating
- Appreciate different planning, operations and market modeling needs
- Optimize the use of a centralized data source (include: topology, attributes, MOD 32, etc.)
- Foster a culture consistent with Human Performance efforts and team solidarity
Future Methods and Alignment with Vision Principles

- Explore methods that offer units full access to PJM markets while maintaining the flexibility of the EMS model
  - Allows PJM to make reliability-only decisions on what to model without impacting market access

- Use of visualization methods for control room situational awareness of impactful DER