



Distributed Energy Resources (DER)

Stakeholder Process Update

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MC Webinar
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1. Education:
 - PJM rules for generation
 - PJM rules for demand response
 - Other RTO rules benchmarking
 - State/federal jurisdictional rules
2. “Consider modifications to **PJM interconnection queue rules** for distributed resources.”
3. “Consider modifications to **market participation rules** for distributed resources to more efficiently incorporate these resources into the energy, ancillary services and capacity markets.”

- **Task 1: Education—COMPLETE AND CLOSED (2016)**
- **Task 2: Interconnection modifications—IN PROGRESS (Seeking Endorsement at June MRC)**
 - Scope includes education and new rules on:
 - Alternate Queue Process
 - Allocation of upgrade costs <\$5 million
 - Phasing in the queue process.
- **Task 3: Market modifications—IN PROGRESS (MIC Special Sessions)**
 - Goal: Evaluate current options for resources to participate in markets when both reducing load and injecting power past the load meter. Propose enhancements as necessary.
 - Approach: Initially focus on ancillary services, then energy and capacity.

- **Primary Focus:** Some generators and batteries behind a load meter have the ability to inject power:
 - What is their path to participate in wholesale markets?
- **PJM Demand Response or Generation** framework, but...
 - DR rules prohibit injection of power past load meter; and
 - Generation rules pose challenges for units that are wired with load.
- **Stakeholder Process Goal:**
 - Clear market rules for DER wired with and without load that wish to participate in wholesale markets.

Interconnection

- Similar queue process to existing WMPA (staff preferred approach)
- DER<>EDC only, DER must certify to PJM that it has a state interconnection (alternative solution)

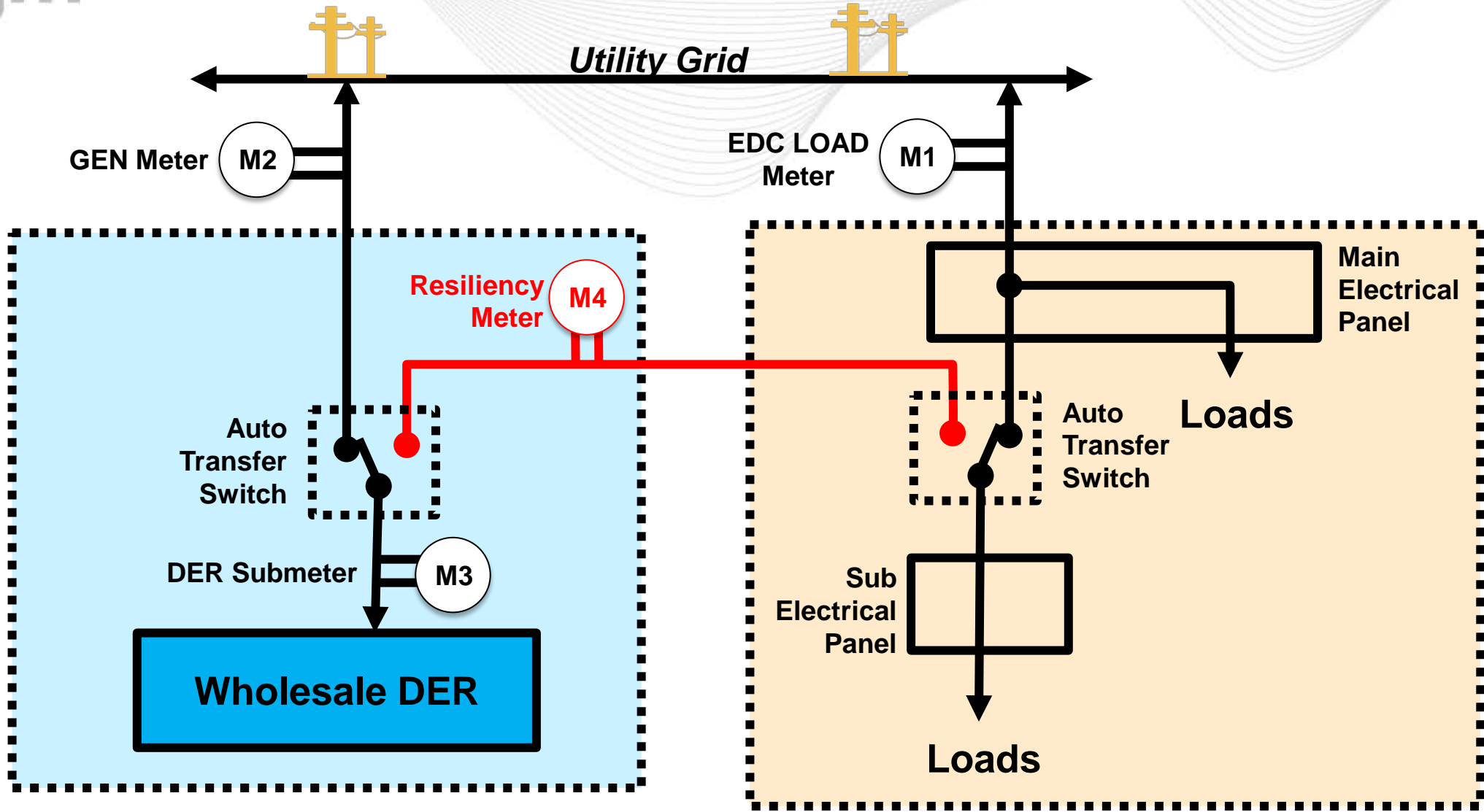
Aggregation

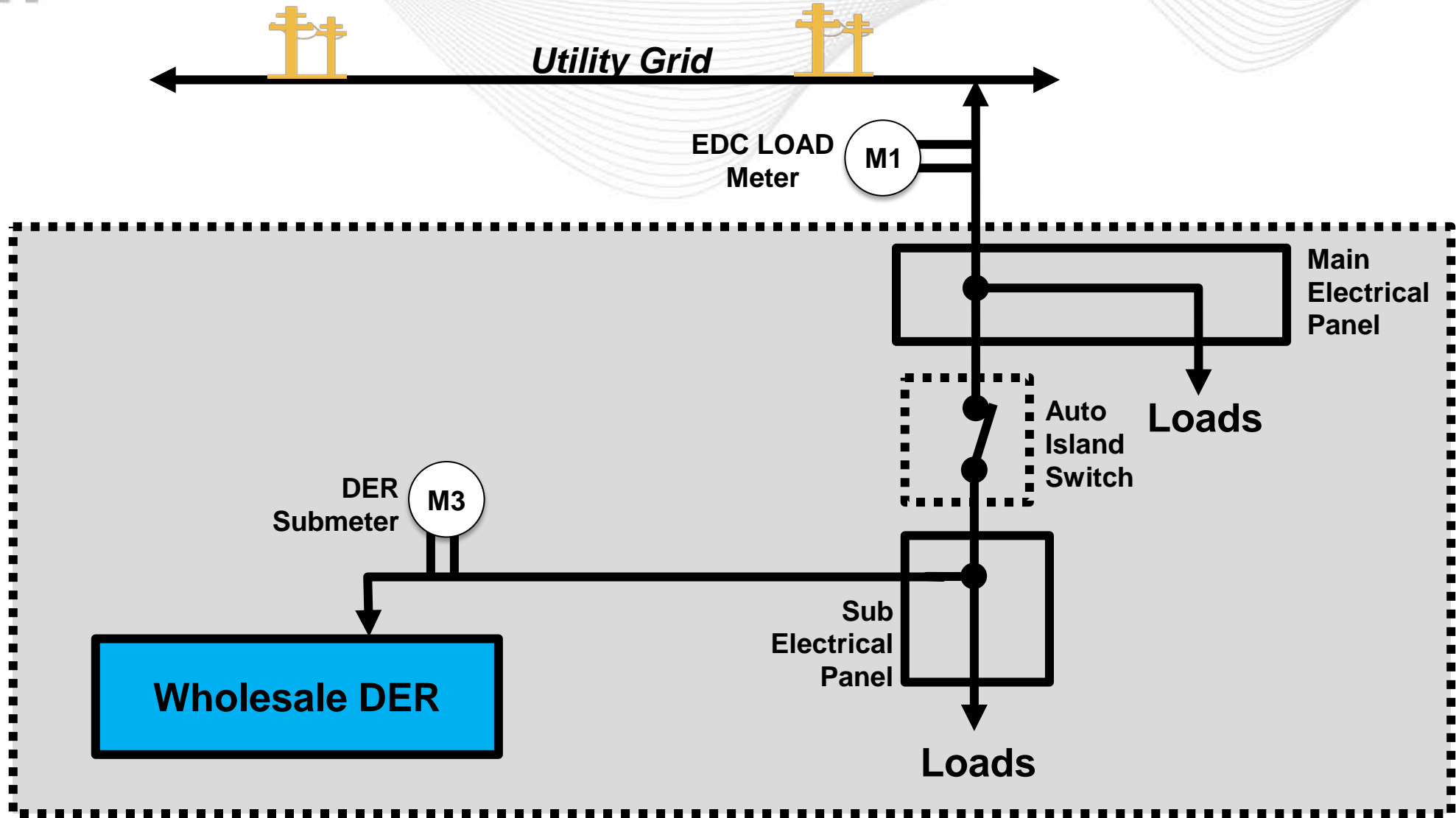
- Minimum and Maximum Size Thresholds
- Locational considerations
 - Determined by PJM
 - Determined by EDC
- Aggregation for market compliance purposes...
 - May differ from locational considerations

Method to Measure Wholesale vs. Retail Energy

- Physical separation
- Virtual separation
- Use existing DR measurement rules extended to include injections

3 Main DER Wiring Configurations Under Discussion





"WIRED W/ LOAD" MIXED WHOLESALE AND RETAIL DER

PJM STATUS: NO PROCESS FOR MIXED WHOLESALE AND RETAIL INJECTIONS

Q: How to properly settle energy?

