

Order 841 and Energy Storage/DER

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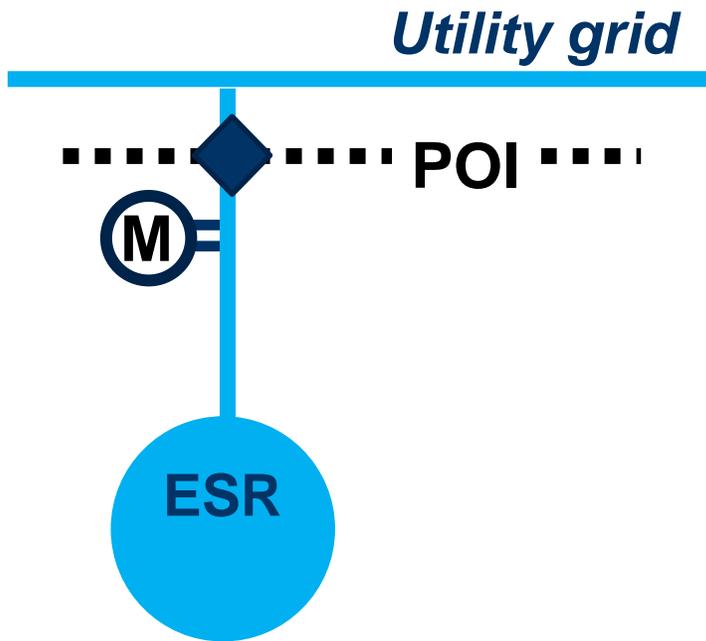
- Order 841 is applicable to energy storage connected to transmission, distribution, and “behind the meter”.

“Additionally, consistent with the NOPR proposal, we clarify that electric storage resources located on the interstate transmission system, on a distribution system, or behind the meter fall under this definition, subject to the additional clarifications provided below.”

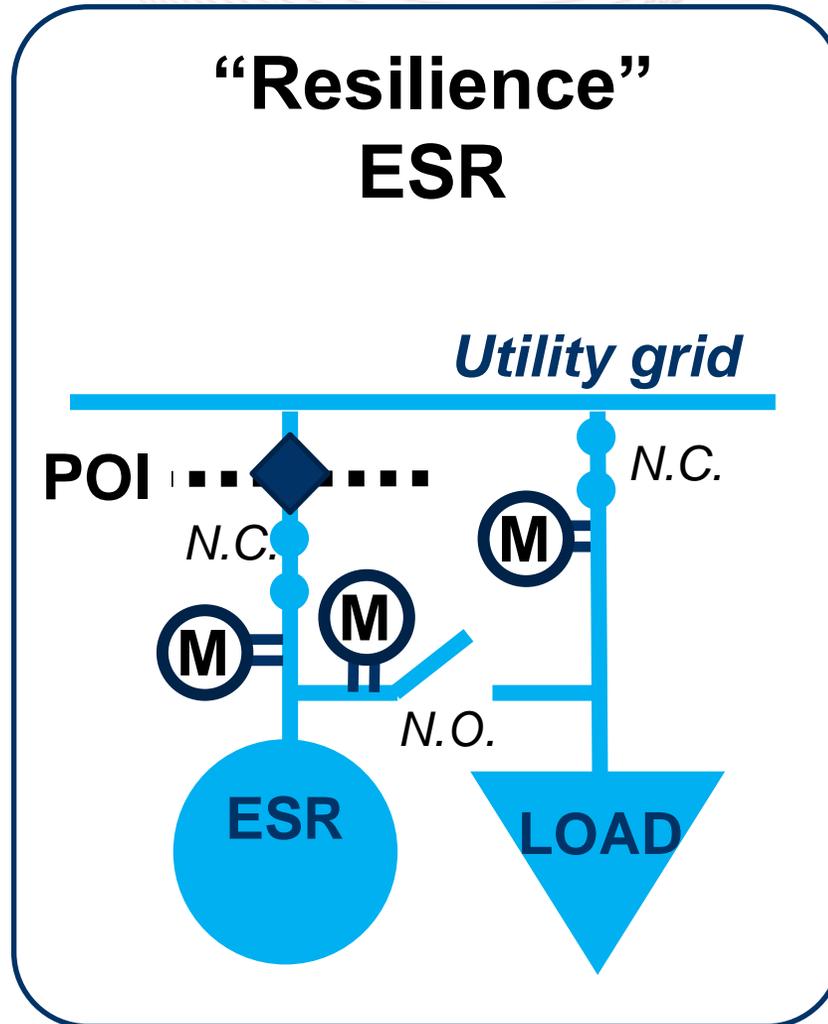
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“Some commenters argue that the Commission should broaden its definition of an electric storage resource to apply to behind-the-meter resources that do not inject electricity onto the grid. We decline to do so.”

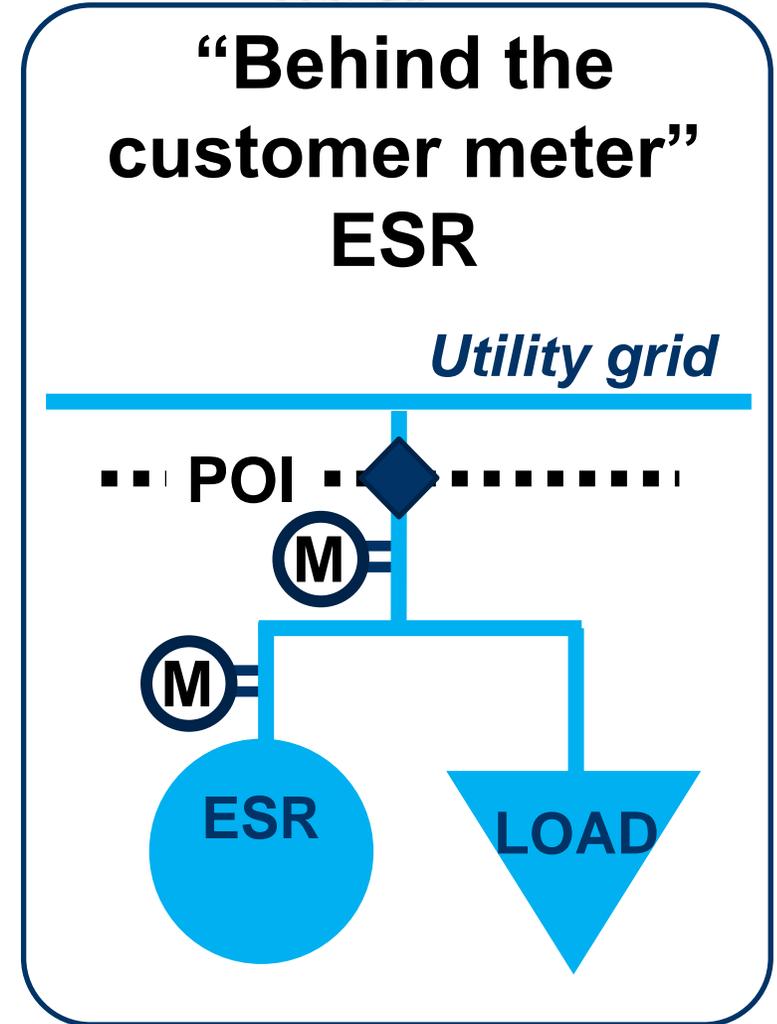
Plain old “front of meter” ESR



“Resilience” ESR



“Behind the customer meter” ESR

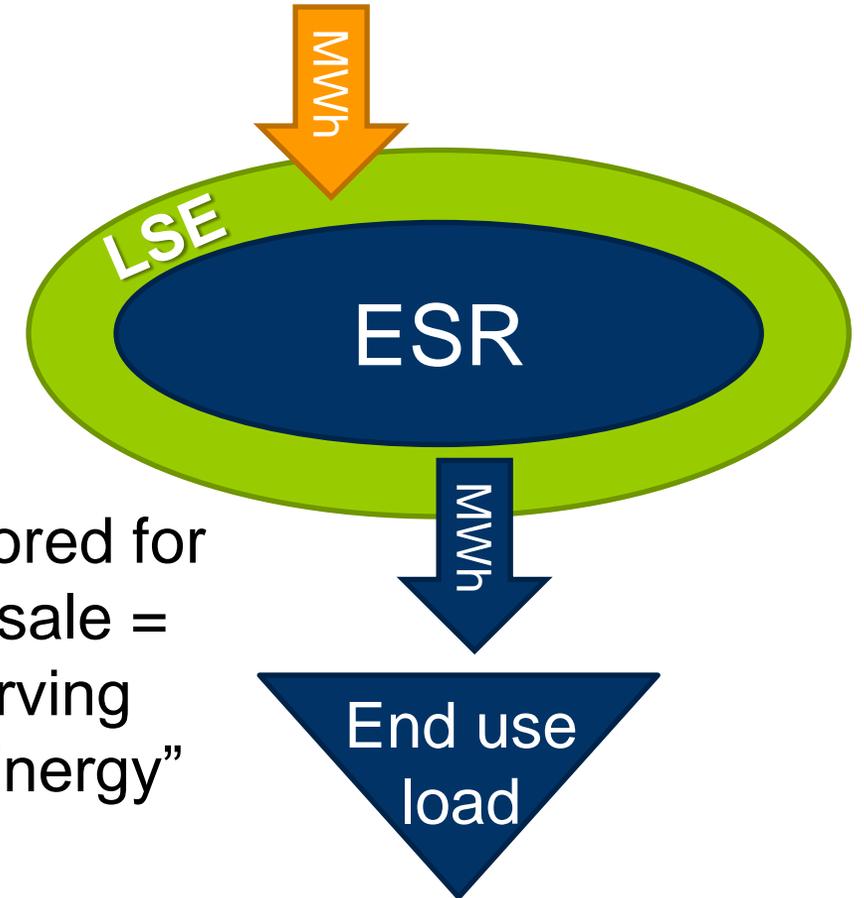


N.C. = normally closed switch. N.O. = normally open switch.

PJM Energy Market



Charging stored for later wholesale sale =
"Direct Charging Energy"

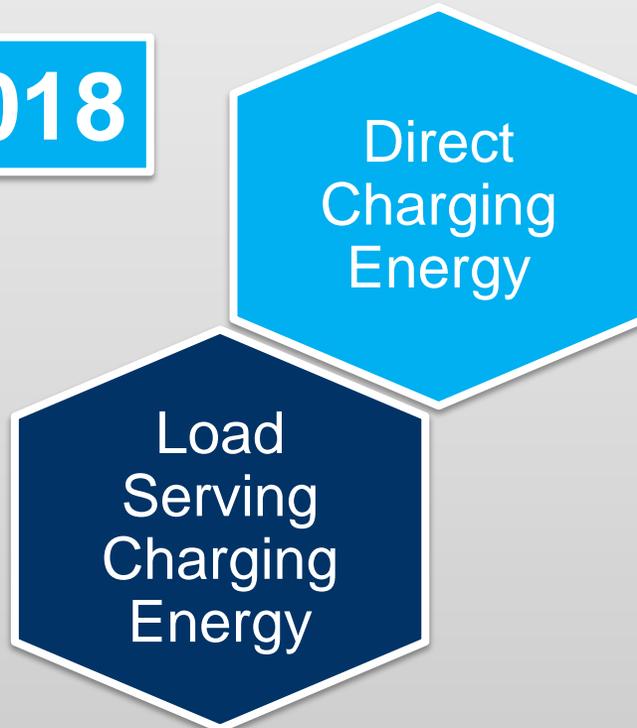


Charging stored for later retail sale =
"Load Serving Charging Energy"

- **Status quo:** 100% of charging for energy storage resources capable of serving end-use load is at retail.
- **PJM Compliance with Order 841:** For energy storage resources capable of serving end-use load, charging energy that is stored might be later resold (by the storage resource) at wholesale **or** at retail:
 - Purchase from PJM for later retail sale must be made by an LSE.
 - The subsequent retail sale (by the LSE to the load) is not PJM jurisdictional.
 - LSEs are subject to local/state regulations and laws for retail sales.
 - By contrast, an ESR will be able to purchase from PJM for wholesale sale (back to PJM).
 - The subsequent wholesale sale (by the ESR to PJM) is FERC jurisdictional.

Compliance filing (to be submitted Dec 3, 2018) would **define** different charging MWh categories.

Dec 2018

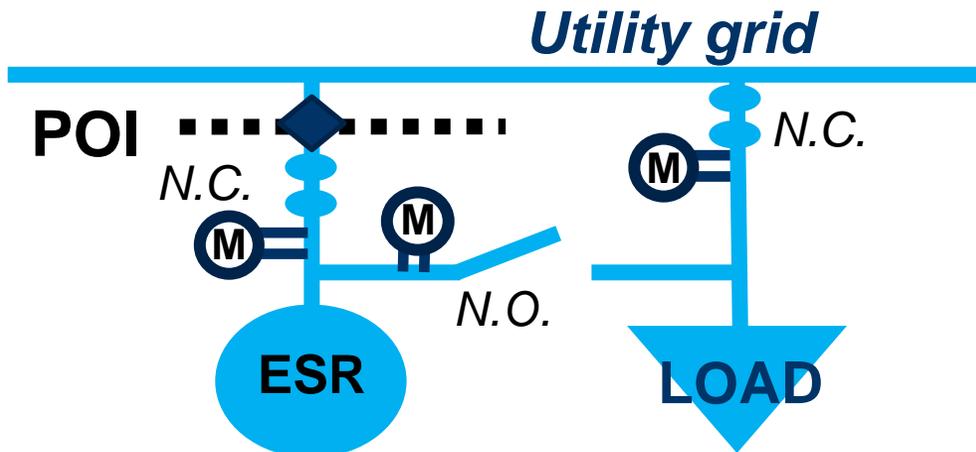


Implementation (due 2019) would establish **methods** for categorizing MWh and coordinating with utility.

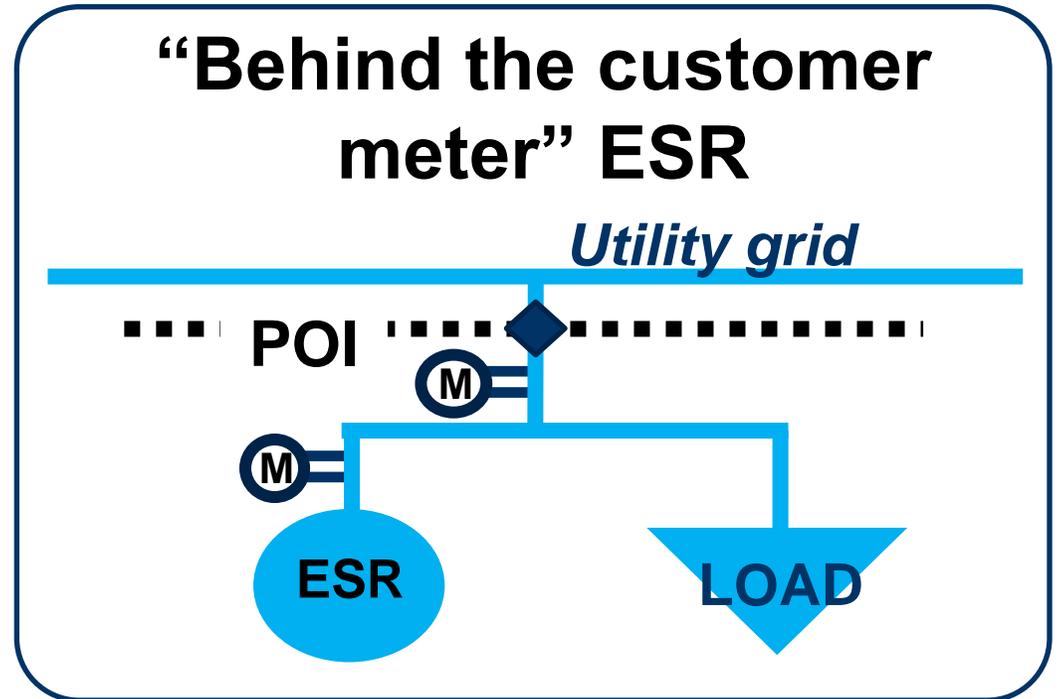


- Fleet of batteries in this use case already installed (today must charge at retail).
- Submeter on the battery is a likely requirement (for implementation).
- DER Subcommittee has discussed potential solutions for this use case.
- “Behind the customer meter” case is potentially quite different from “Resilience” case.

“Resilience” ESR



“Behind the customer meter” ESR



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