

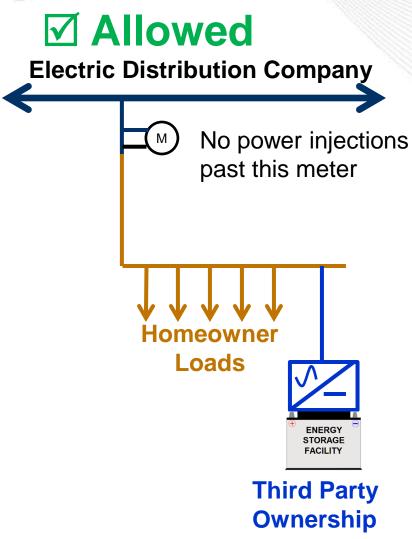
### Distributed Energy Resource (DER) Scenarios

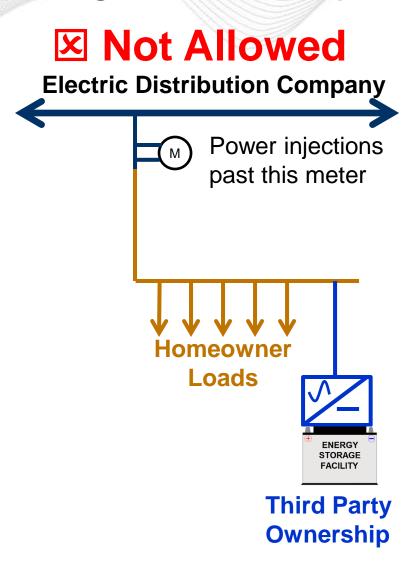
David Egan Manager, Interconnection Projects Markets and Reliability Committee April 18, 2016

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#### PJM Demand Response Regulation Participation







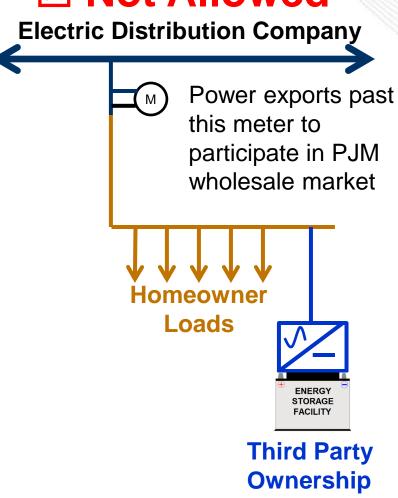
#### State Jurisdictional Interconnections

#### **Behind the Meter Net Metering or Retail Generation Electric Distribution Company Electric Distribution Company** Power injections past No power injections this meter and past this meter participates in state's retail market or net metering No PJM Involvement Homeowner Homeowner Loads Loads STORAGE STORAGE **FACILITY FACILITY Third Party Third Party Ownership Ownership**



#### PJM Interconnection Request for Regulation or Generation

### **⋈** Not Allowed



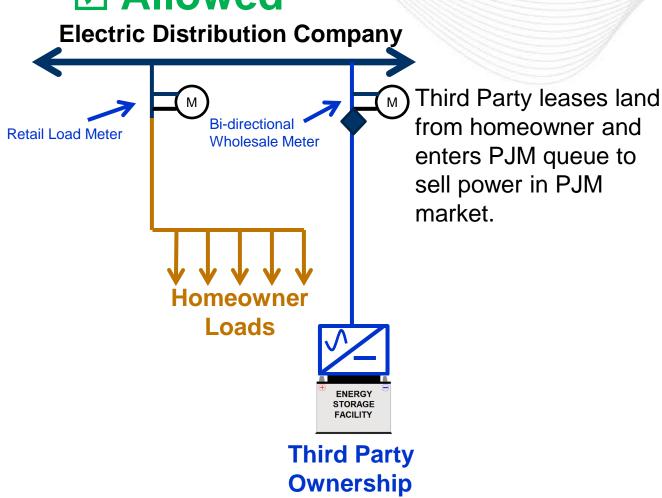
# PJM Interconnection Request Required

Arrangement not allowed when Interconnection Request is made by Third Party because Third Party is using homeowner's facilities and Point of Interconnection to get power to PJM system. PJM has no relationship with the homeowner.



#### PJM Interconnection for Regulation or Generation

#### **☑** Allowed



PJM Interconnection Request Required



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### PJM Interconnection for Regulation or Generation

#### May be allowed

**Electric Distribution Company Import Meter Grid Isolation Contactors** Automatic **Transfer** Switch Retail Meter Homeowner Loads STORAGE **FACILITY Third Party** 

**Bi-Directional Wholesale Meter** 

Third Party leases land from homeowner and enters PJM queue to sell power in PJM market. On loss of grid, Third Party serves homeowner through automatic transfer switch.

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## PJM Interconnection Request Required

**Ownership** 



#### PJM Tariff Interconnection Options

- To participate in front of the meter in the wholesale market, a PJM Interconnection Request is required.
- For PJM Tariff interconnection procedures to apply, request must be on FERC jurisdictional facilities or be made by a FERC Qualifying Facility (QF).
  - If state jurisdictional: Wholesale Market Participation Agreement
  - If FERC jurisdictional: Interconnection Service Agreement
- Forms of Interconnection Requests for inverter-based DER generation:

PJM Tariff Attachment	Applicable PJM Tariff Section	Applicable to	Deposit Costs	Tariff Duration from queue window close to ISA Assumes Qualifications Met
BB	112B	≤ 10 kW inverter-based	\$500	23 days
Y	112A	>10 kW & ≤ 5 MW inverter-based	\$2k/3k/5k	1-3 months
N	110 (Capacity) or 111 (energy)	> 5 MW & ≤ 20 MW inverter-based – any Capacity Request	\$10k/12k/15k	4-12 months*  * PJM will seek to expedite study process