

# Wholesale DER Interconnections

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Distributed Energy Resources Subcommittee

Jurisdiction

Pre-Applications: Formal and Informal

DER Capacity vs Transmission Interconnection Capacity

Behind the Meter

vs Non-Retail Behind the Meter

vs Front of the Meter

vs Net Energy Metering

Which Interconnection Process?

Valid Interconnection Requests

Proposed Improvements

## DER Wholesale Participation: Whose Process Controls Interconnection?



Federal process governs:

- Transmission
- Distribution when
  - Prior wholesale sales
  - Qualifying Facility (QF)\* at time of submittal

Local process governs:

- Net energy metering
- All other interconnections

\* For storage to be classified as QF, owner must certify that 75% of charge energy will come from a QF resource.



## FERC jurisdictional distribution connections:



Interconnection process



Rates



Capability requirements



Operations



Application of capability



Price signals

Distribution system control



## Local jurisdictional distribution connections:



	Interconnection process	➡
⬅	Rates	➡
	Capability requirements	➡
	Operations	
	Application of capability	➡
⬅	Price signals	
	Distribution system control	➡



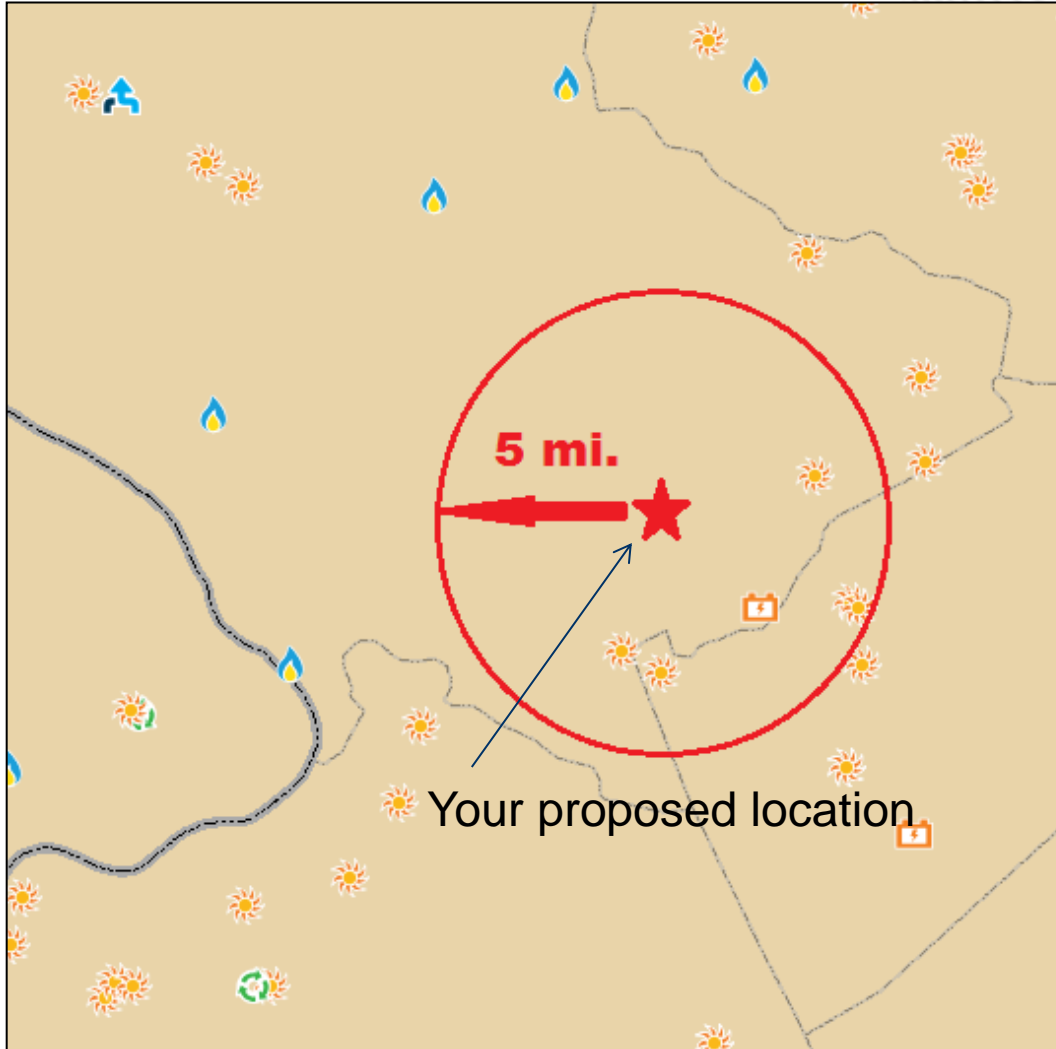
Provide prospective distribution customers access to interconnection circuit information on FERC-jurisdictional distribution circuits.

Informal	Formal
<ul style="list-style-type: none"> <li>No determination of jurisdiction made</li> <li>PJM existing interconnection information near proposed location</li> </ul>	<ul style="list-style-type: none"> <li>Only applicable on FERC-jurisdictional facilities</li> <li>\$300 fee: Refunded when non-jurisdictional</li> <li>Local facility owner provides readily available information</li> </ul>



- Unlike an interconnection request, QF status is irrelevant for pre-application jurisdiction
- Customer provides Tariff §109.3 information
- Per Tariff §109.4, PJM returns \$300 check when non-jurisdictional (**but this is useful information!**)
- Jurisdiction may change
- PJM relies solely on local facility owner to answer Tariff §109.6 questions





Note:

This data represents information current at the time of the posting and corresponds to the system configuration represented in the most recent model update.

PJM reserves the right to modify the data, as required, to ensure system reliability and/or commercial integrity.

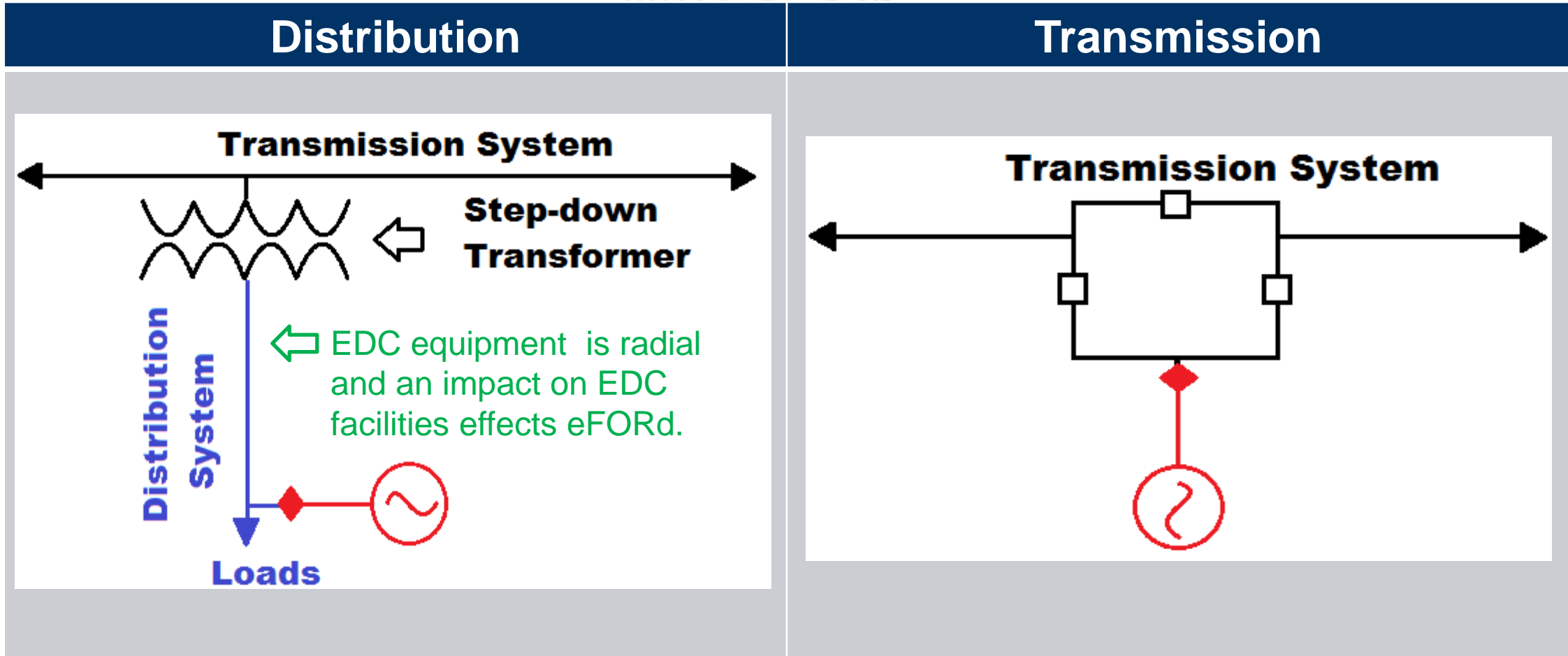
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----- Company: AE -----

Substn: ABSECON kV: 69 KV Dev: SERIES1 End: END B  
 Descr: ABSECON SERIES1 SER DEV

----- Day -----					----- Night -----			
Degf	Norm	Long	Shrt	Dump	Norm	Long	Shrt	Dump
95	77	94	94	108	77	94	94	108
86	77	98	98	113	77	98	98	113
77	77	101	101	116	77	101	101	116
68	77	105	105	121	77	105	105	121
59	99	108	108	124	99	108	108	124
50	99	111	111	128	99	111	111	128
41	99	114	114	131	99	114	114	131
32	99	117	117	135	99	117	117	135





# Which Interconnection Process?

**Attachment Y**

**Attachment N**

**Attachment BB**

**Local Process**



- Request is not deficiency reviewable by PJM until submittal is valid
- Screens processes: Attachment Y (§112A) and Attachment BB (§112B)
  - New facilities, energy-only (no Capacity)
  - Attachment Y acceptable inverter MW limit: system voltage and mainline proximity
  - Site control
  - Energy only
  - Data
  - Deposits for Y: \$2k/\$3k/\$5k (10% non-refundable)
  - Deposits for BB: \$500 (non-refundable)
  - Equipment must be **CERTIFIED** per Tariff Attachments Z and AA
    - Otherwise must come in with Attachment N
    - Still may qualify for expedited treatment under §111
    - Deposit: \$10k/\$12k/\$15k (10% non-refundable)



# Existing PJM Tariff DER Interconnection Options (this slide presented at special MIC DER 4/2016)

- 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).
  - state jurisdictional process ends with Wholesale Market Participation Agreement
  - FERC jurisdictional process ends with 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* <small>* PJM will seek to expedite study process</small>

1. Eliminate customers need to complete specific Tariff Attachments to enter the queue (one form vs N/Y/BB)
2. Fixed price based on MW size or TO zone (vs variable by agreement type)
3. PJM determines jurisdiction in conjunction with TO after submittal
  - PJM Tariff applies to FERC-jurisdictional
  - PJM completes study and provides WMPA for non-jurisdictional
4. Does not eliminate need to enter local queue for non-FERC jurisdictional projects, but PJM requirements won't vary.