

Pseudo-Ties & Locational Deliverability Area (LDA) Incremental Capacity Transfer Rights

Nebiat Tesfa

Transmission Planning

Sami Abdulsalam

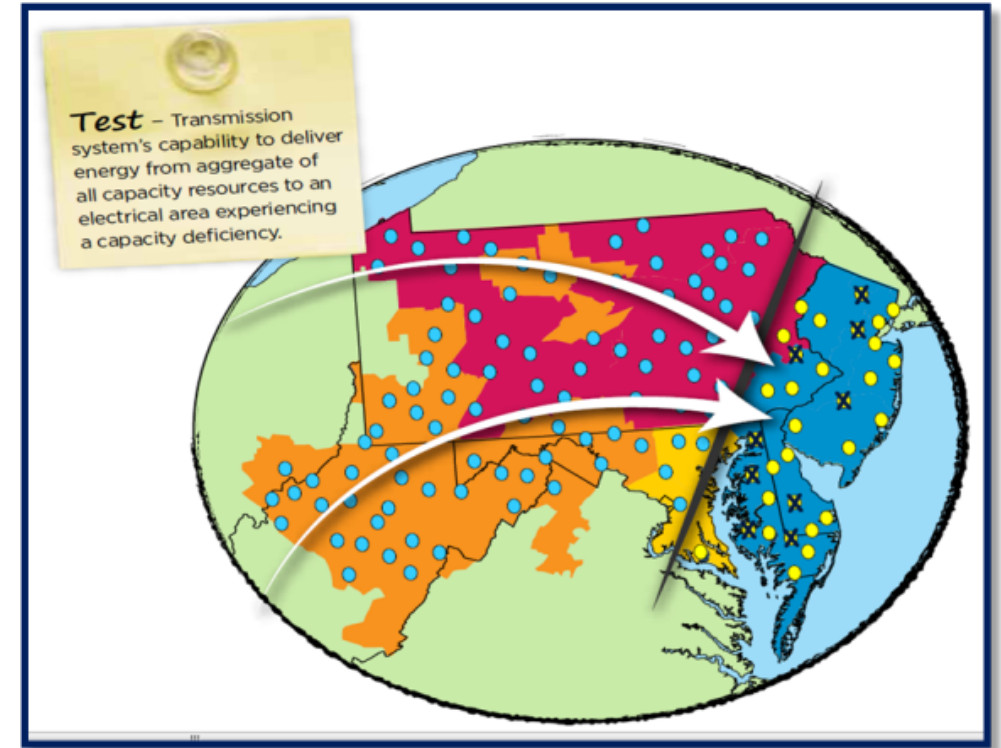
Transmission Planning

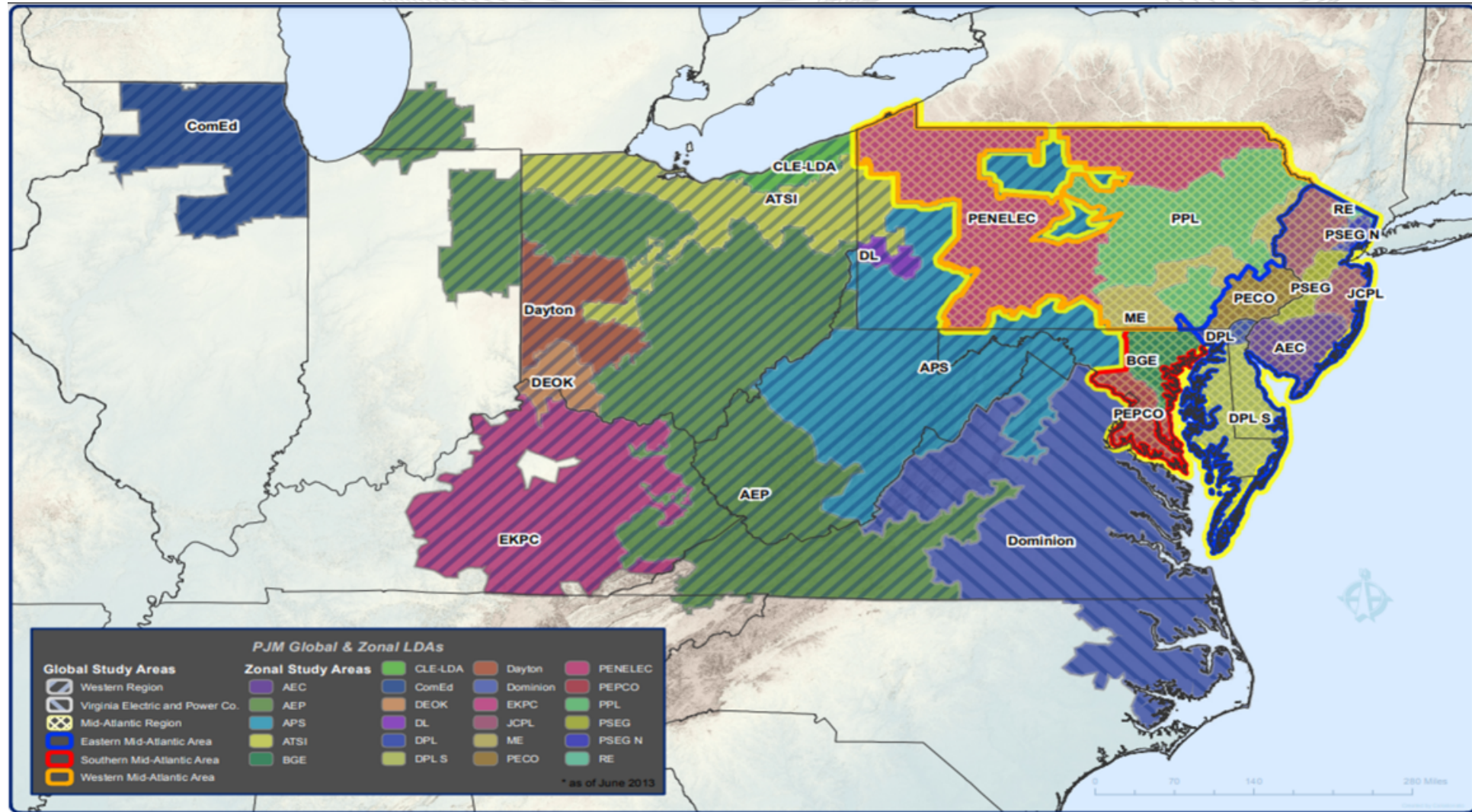
Market Implementation Committee

April 2, 2025

- Pseudo-ties are PJM Capacity Resources located outside PJM
 - Resource has an indirect, “virtual” transmission connection PJM
 - Resource holds long-term firm transmission service and has been studied to ensure it is deliverable to PJM with same requirements as an internal PJM Capacity Resource
 - The native balancing authority removes the resource from its calculations to schedule generation, and the PJM adds it to its own
 - Transmission service is not subject to NERC tagging rules, i.e., Transmission Loading Relief

- Study performed to ensure there is minimal transmission risk serving each Locational Deliverability Area (LDA) in PJM.
- Study ensures sufficient transmission capability exists on the PJM system to supply emergency power from the aggregate of PJM generation to LDAs experiencing capacity emergency and high load conditions





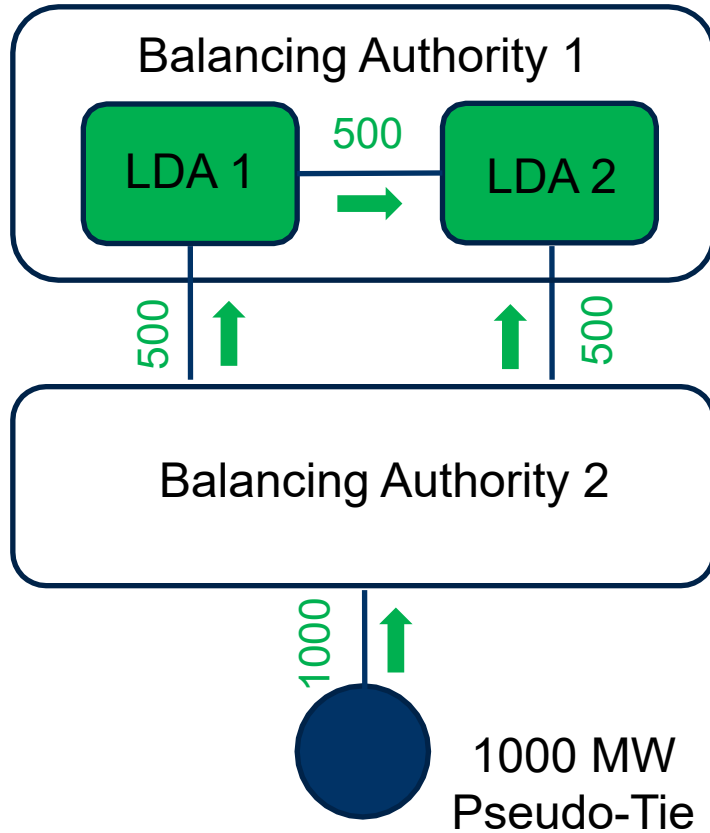
- **Capacity Emergency Transfer Objective (CETO)**
 - The amount of imports into the LDA from the aggregate of PJM Capacity Resources outside the LDA to achieve a LDA resource adequacy target (previously 1 loss of load event in 25 years and now normalized EUE criterion)
- **Capacity Emergency Transfer Limit (CETL)**
 - The actual amount of imports into the LDA from the aggregate of PJM Capacity Resources outside the LDA that the PJM transmission system can support
- Both CETO and CETL are agnostic as to which set of PJM Capacity Resources imports come from
- To ensure LDA resource adequacy, **$\text{CETL} \geq \text{CETO}$**

Concerns With Pseudo-Ties For LDA Emergency Imports

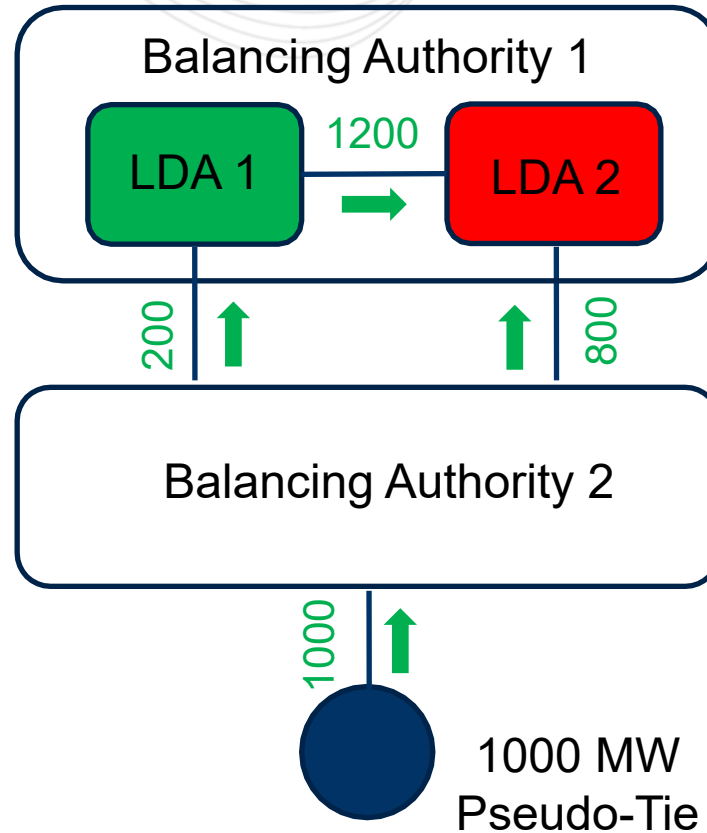
- Like internal PJM Capacity Resources, Pseudo-Ties are deliverable to the PJM footprint and can therefore be counted on to help PJM meet its overall resource adequacy targets.
- Also, like internal PJM Capacity Resources, there is ***no assessment performed by PJM to ensure that Pseudo-Ties are deliverable to any particular LDA under emergency conditions.***
 - In fact, a Pseudo-Tie could be deliverable to PJM as a whole and actually ***lower*** the CETL for some LDAs and therefore may even need to be dispatched off to enable the CETO to be achieved.
- PJM will use whatever Capacity Resources are available to supply an LDA with the emergency power it requires, and this may include dispatching some Capacity Resources down or even off.

Example: LDA Emergency Requires Pseudo-Tie Curtailment

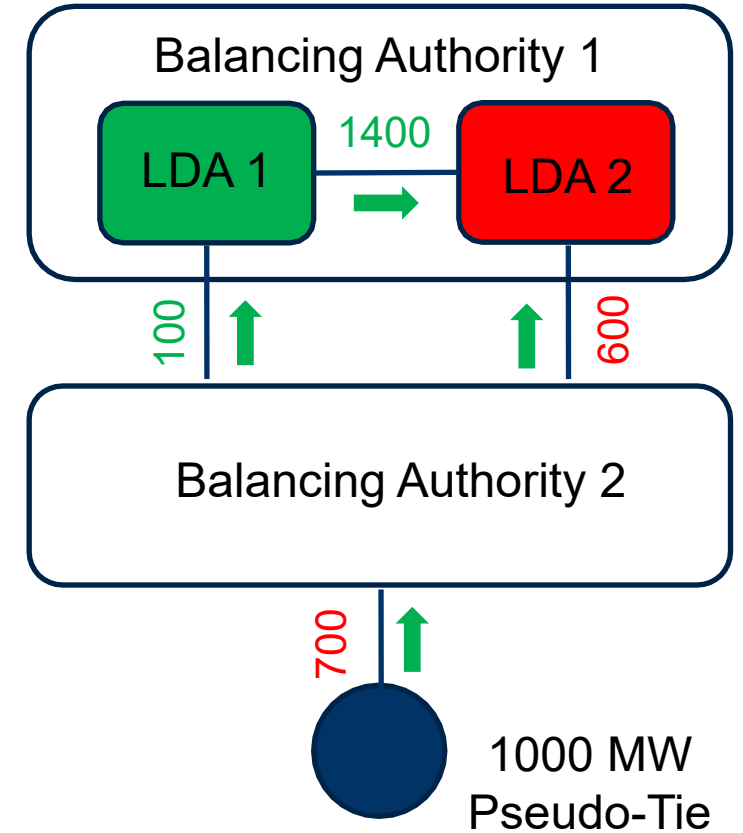
Normal Conditions



Emergency Unconstrained Conditions



Emergency Constrained Conditions



- Unlike Capacity Resources inside an LDA, Pseudo-Ties have no impact on the LDA's Reliability Requirement.
 - Reliability Requirement = CETO + Internal ICAP
- Pseudo-Tie must therefore have a direct, physical, dedicated transmission connection to the LDA with a capacity equal to or greater than the Pseudo-Tie in order for it to be considered equivalent to a Capacity Resource inside the LDA.
- Alternatively, a Pseudo-Tie can acquire rights to import capability into the LDA in the amount of the Pseudo-Tie.
 - Incremental Capacity Transfer Rights (ICTRs)
 - Qualifying Transmission Upgrade (QTUs)

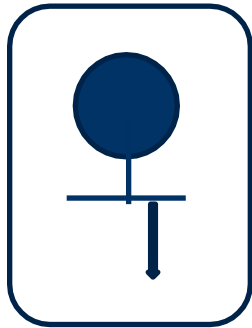
- The rights to the CETL of an LDA are comprised of three components:
 - Capacity Transfer Rights (CTRs)
 - Incremental Capacity Transfer Rights (ICTRs)
 - Qualifying Transmission Upgrades (QTUs)

- Described in Attachment H of PJM Manual M14H
 - Allocated to developers obligated to fund a transmission upgrade to the extent such upgrade increases the import capability into a LDA, or allocated to a Responsible Customer in accordance with PJM Tariff, Schedule 12A
 - Based on the incremental CETL created by the upgrade
 - Effective for thirty years or the life of the upgrade, whichever is less

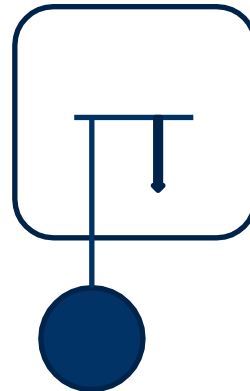
- If there are upgrades required to support the firm transmission service related to the Pseudo-Tie, then such upgrades may be eligible for ICTRs
 - Based on LDA CETL increase
 - Based on how much upgrade cost allocated to Pseudo-Tie
- Alternatively, a merchant transmission or upgrade request can be made to improve the CETL into an LDA and acquire the associated ICTRs.

Three Acceptable Scenarios For LDA Eligible Resources

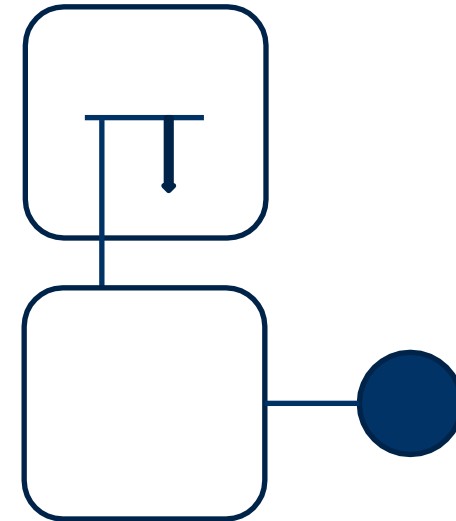
Scenario 1 Capacity Resource Inside LDA



Scenario 2 Pseudo-Tie With Dedicated Radial Connection To LDA



Scenario 3 Pseudo-Tie With ICTRs & No Dedicated Connection To LDA



Facilitator:
Foluso Afelumo
Foluso.Afelumo@pjm.com

Secretary:
Stefan Starkov
Stefan.Starkov@pjm.com

Presenters/SMEs:
Nebiat Tesfa
Nebiat.Tesfa@pjm.com
Sami Abdulsalam
Sami.Abdulsalam@pjm.com

External Resource Capacity Clearing



Member Hotline

(610) 666 – 8980

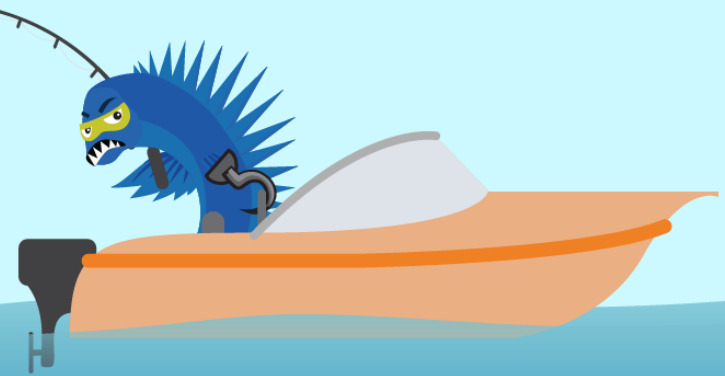
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custsvc@pjm.com

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