

Underperformance Risk Management Senior Task Force External Capacity Performance Enhancements



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- [External Capacity Performance Enhancements](#) approved in May 2016
 - Address the operational, markets and planning challenges associated with the integration of external Capacity Performance resources in PJM
- Key discussion areas:
 - External resource modeling (electrical distance – how far is too far?)
 - Deliverability standards for both initial and future years
 - Firm Flow Entitlements/Firm Flow Limits associated with external resources entering PJM's capacity market
 - How to handle existing external resources
 - Existing external resources are any approved pseudo-tie that has cleared at least one RPM auction during the period of 16/17 Delivery Year through 19/20 Delivery Year



- The PJM package E received majority support (68.49%) in the External Capacity Performance Enhancements discussions
- Package addresses both existing and new external resources

- Operational Deliverability
 - Existing external resources will be evaluated for operational deliverability
 - An acceptable PJM operating guide/procedure may be used to ensure reliable operation
 - Existing external resources that are reliable will be operated under the current rules for 5 years as of June 1, 2016 through the 2021/2022 Delivery Year
 - By October 1 of the year preceding the applicable Delivery Year, PJM will notify existing external resource owners whether their pseudo-tie is operationally feasible
 - If Yes, the pseudo-tie is accepted for the Delivery Year
 - If No, the pseudo-tie owner can decide to either perform the required upgrades or declare the MW as non-viable

- Performance Assessment Hour penalty assessments
 - Starting in 2020/2021, assess performance at sub RTO granularity based on operational requirements
- Non-Market Area FFE Exemption
 - Impacted Non-Market Areas need to honor "Firm Status" for resources
- **Beginning with the 2022/2023 Delivery Year the new rules will apply**
 - The must offer requirement will be lifted for all existing pseudo-ties for the 2022/2023 BRA

- External resource owners with long term contracts with PJM load may be permitted to participate for the life of the asset
 - Evidence of a long-term contract or equivalent documented agreement with internal PJM load to sell the capacity and energy of the external resource
 - 10 years or longer and was entered into on or before June 1, 2016

- Initial and On-going Deliverability Requirements
 - The deliverability study based on the applicable standards must be reviewed and approved by PJM to ensure uniformity for internal and external resource deliverability requirements
 - Unit Specific to PJM Load + External generator deliverability
 - The standards for PJM's deliverability requirements are published in Manuals 14A and 14B
 - PJM will work with neighboring BAs to clarify the deliverability criteria and review and identify deficiencies with any studies
- Cost Allocation
 - The cost allocation methodology of the region in which the upgrade is required will be utilized for external upgrades
 - The RTEP process will be utilized for internal upgrades

- Pseudo-tie Feasibility
 - A process to determine the feasibility of a pseudo-tie will be initiated at the time the transmission service request is submitted
- External Transmission Service Evaluation
 - Long-term Firm Point to Point with rollover rights for term of the service evaluated at a unit specific level and confirmed by external Balancing Authority
- PJM Transmission Service Requirement
 - Network External Designated
 - Firm Point to Point will no longer be applicable

- Operational Modeling Requirement
 - External resources with a minimum electrical distance impedance equal to or less than 0.065 or within 1 station of a transmission bus with a minimum electrical distance impedance equal to or less than 0.065
- Seams Coordination Model Consistency
 - Network models for PJM and External Area need to be within 2% accuracy for potential coordinated flowgates
- Performance Assessment Hour penalty assessments
 - Starting in 2020/2021, assess performance at sub RTO granularity based on operational requirements

- New Flowgate Requirements
 - There must be at least one flexible internal PJM generator with at least 1.5% impact on any new potential flowgate as a result of the pseudo-tie
- Firm Flow Entitlement (FFE)/Firm Flow Limit (FFL) Requirements
 - The FFE/FFL for flowgates must transfer ownership to PJM from Host Entity
 - External Capacity in BAs that are part of the Congestion Management Process is biddable only up to quantity at which FFEs or FFLs are assigned to PJM
- Tagging Requirements
 - External Units impacting non-CMP BAs must have agreement from non-CMP BA that the pseudo-tie does not require tagging

- Manual and Governing Document Changes
 - Manuals
 - Governing Documents
- MRC/MC Endorsement
 - Seeking MRC and MC endorsement on the same day at the January 26, 2017 meeting

Appendix



External Capacity – Manuals to be Updated

Manual Name	Section(s) to be Updated	Summary of Change
M1 - Control Center & Data Exchange Requirements	5.3, Billing	Relocate Dynamic Transfer metering requirements & reference new location in M12
M3a - Energy Management System (EMS) Model Updates & Quality Assurance (QA)	1.5, Real-Time Reliability Model	Incorporate additional detail regarding external modeling requirements and Pseudo-Tie modeling eligibility criteria
M12 - Balancing Operations	Att. F, Dynamic Transfers	Incorporate new Pseudo-Tie process and approval criteria
M18 - PJM Capacity Market	1.2.2, Participation of Resource Providers	Update when participation by external resources is mandatory
	2.3, Locational Constraints in the RPM 2.3.4, Capacity Import Limits	Clarify that Capacity Import Limits in RPM Auctions is effective for 2017/2018-2019/2020 Delivery Years only
	4.2.2, Existing Generation Capacity Resources - External	Clarify requirements prior to 20/21 DY and insert new requirements effective 20/21 Delivery Year Remove option for an external resource to obtain firm point-to-point transmissions service on PJM OASIS

Manual Name	Section(s) to be Updated	Summary of Change
M18 - PJM Capacity Market (cont.)	4.2.4, Planned Generation Capacity Resources – External	Clarify requirements prior to 20/21 DY and insert new requirements effective 20/21 Delivery Year
	4.6.4, Importing an External Generation Resource	Remove option for an external resource to obtain firm point-to-point transmissions service on PJM OASIS
	5.7.2, Auction Clearing Mechanism – Base Residual Auction 5.8.5, Auction Clearing Mechanism – Incremental Auctions	Clarify the Resource Clearing Price within an external source zone is relevant for 2017/2018-2019/2020 Delivery Years only
	5.9.1, Zonal Capacity Prices	Clarify that an adjustment to account for price decrements for external capacity resources is relevant for 2017/2018-2019/2020 Delivery Years only
	8.4A, Non-Performance Assessment	Include in the Non-Performance Assessment the evaluation of external resources that help resolve the declared Emergency Action starting with the 2020/2021 Delivery Year