

External Energy Transfers

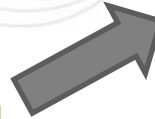
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Method to Transfer Energy? NERC Definitions

NERC Dynamic Transfer

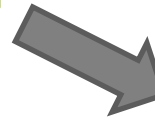


External Units Providing Megawatts to PJM



Dynamic Schedule: A time-varying energy transfer that is updated in Real-time and included in the Scheduled Net Interchange (NIS) term in the same manner as an Interchange Schedule in the affected Balancing Authorities' control ACE equations (or alternate control processes).

Existing Method
PJM Energy
Only



Pseudo-tie: A time-varying energy transfer that is updated in real-time and included in the actual net interchange term (NIA) in the same manner as a tie line in the affected BA's control ACE equation (or alternate control processes).

Existing Method
PJM Energy
and Capacity

Dynamic Transfer: The provision of the real-time monitoring, telemetering, computer software, hardware, communications, engineering, energy accounting (including inadvertent interchange), and administration required to electronically move all or a portion of the real energy services associated with a **generator** or **load** out of one BA Area into another.



PJM Existing Dynamic Schedule: Energy Only

	MISO System	PJM System	Why not Capacity? Gaps/Notes
Firm Service	Firm PTP	Firm/Non-Firm PTP	External PTP Evaluation not studied under PJM standards.
NERC	Tagged	Tagged	Existing Rules do not allow Capacity Recourses to be Tagged. (Tagged transactions could be curtailed via the NERC TLR process negating PJM's control of the resources)
Dispatch	15 minute	15 minute	Inconsistent with unit dispatch of 5 minutes for physical capacity resources.
Generation	MISO controls units	Slice of System	PJM does not control physical resources.
Modeling	Tie-Line	Tie-Line	Model as Tie-line similar to existing Merchant transmission DC lines. External Transmission not modeled.
M2M	No M2M Necessary	No M2M Necessary if MISO controls units	PJM does not dispatch actual external units so no M2M necessary for transmission between physical units and PJM
ICAP and UCAP values	N/A	N/A	Physical resources controlled by MISO.
Non-Recallability	MISO assumes control of physical units	N/A	Physical resources controlled by MISO.
Energy Must Offer	N/A	N/A	Physical resources controlled by MISO.
Outage Reporting	N/A	eDART Required	Physical resources controlled by MISO.
RPM CP Performance	N/A	N/A	Physical resources controlled by MISO.
Capacity Factor and EFORd	N/A	N/A	Physical resources controlled by MISO.



PJM Existing Pseudo-Tie: Capacity and Energy

	MISO System	PJM system	Notes
Firm Service	Firm PTP	Network External Designated Service	External PTP Evaluation needs to meet PJM standards.
NERC	No Tagging	No Tagging	Pseudo-Tie
Dispatch	P/O PJM	5 minute	PJM unit dispatch of 5 minutes for physical capacity resources.
Generation	PJM controls units	PJM controls units	PJM dispatches actual Pseudo-tie resources.
Modeling	Full model	Full model (Impedance Test)	Full network model to pseudo-tie necessary. M2M impedance threshold test applies.
M2M	M2M Necessary	M2M Necessary (M2M Pseudo-tie Test Required)	PJM dispatches actual pseudo-tie units so M2M necessary for transmission between physical units and export location on MISO system. M2M Pseudo-tie threshold test applies.
ICAP and UCAP values	N/A	Pseudo-tie	Similar to internal resources.
Non-Recallability	N/A	Pseudo-tie	Similar to internal resources. Pseudo-tie pro-forma agreement necessary.
Energy Must Offer	N/A	Pseudo-tie	Similar to internal resources.
Outage Reporting	N/A	Pseudo-tie	Similar to internal resources.
RPM CP Performance	N/A	Pseudo-tie	Similar to internal resources.
Capacity Factor and EFORd	N/A	Pseudo-tie	Similar to internal resources.