

PJM-MISO JOA Update

Firm Flow Entitlement Freeze Date



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- As wholesale electricity markets formed via integration, accounting for firm flow from a pre-market perspective was lost due to a loss of granularity
- To keep this accounting, the CMP was formed in 2003 and created a reference date, April 1, 2004, for which a baseline of firm flow established. This date became known as the Freeze Date.



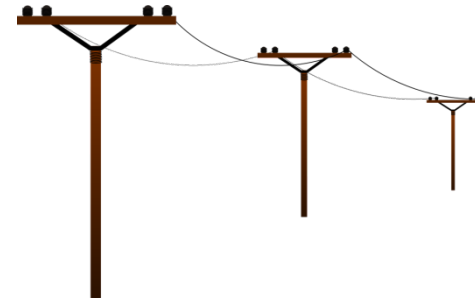
The CMP is an Agreement to utilize a common process for congestion management among members*



*Voting members include PJM, MISO, SPP, TVA, Manitoba Hydro, and LGEE/KU.

Non-voting members include Minnkota and AECI

- Transmission Entitlements or Firm Flows quantify the highest priority of electrical flow on a transmission facility during congestion
- Calculated for CMP entities per the CMP agreement
 - Used to ensure reliable sale of Transmission Service Reservations (TSRs)
 - Used as system limits under the NERC Transmission Loading Relief (TLR) events
 - Used as financial entitlements in RTO based market-to-market (M2M) operations



- Developed as a starting point in 2004, periodic discussions have been held on updating the process as it became out of date.
- Recent refocus starting in early 2014
 - PJM-MISO Joint and Common Market (JCM) discussion
 - MISO-SPP Seams discussion
 - CMPWG meeting discussion
 - Dedicated weekly or monthly meetings
- Straw Proposal document developed in September 2016

- The CMP Entitlement calculation has a number of static inputs to reflect the historical makeup of firm flows as they were in 2004
 - Static list of Firm Transmission Service Reservations (TSR)
 - Static list of Designated Network Resources (DNRs)
- Market based entities operate and perform system planning from an RTO wide perspective, not a pre-market integration perspective



Since the Freeze Date, the Eastern Interconnection has changed considerably

- Entities have heavily invested in new transmission
- DNRs have retired and new resources have been built in their place
- TSRs have retired and new TSRs have been procured

Solution seeks to collaboratively address the antiquated state of the Entitlement calculation

- Incorporate new rules that include currently (post Freeze Date) planned DNRs and TSRs (Phase 1)
- Take steps to reconcile granularity differences between pre-market integration and post-market integration (Phase 2)
- Provide better market signals for enhanced cross-border planning constructs (Phase 2)

	Current Practice	Phase 1 (6/1/18)
DNR	<ul style="list-style-type: none"> Freeze date units with a defined dispatch order Post 2004 pro rata (as needed) 	<ul style="list-style-type: none"> Freeze date units with a defined dispatch order Post 2004 units apply a defined dispatch order
TSR	Freeze Date TSRs impacts are netted on an LBA basis (net import or net export)	<ul style="list-style-type: none"> Freeze Date TSR gross accounting for imports and exports Adjustment to LBA generation for export Adjustment to LBA load for import

- 1000 MW of load
- Currently, generators 3-5 dispatched pro-rata

Unit Priority	Service Date	DNR	Class	MW	Current Dispatch MW	New Dispatch MW
1	1987	Y	Freeze Date	400	400	400
2	2001	Y	Freeze Date	500	500	500
3	2014	Y	Post Freeze Date	200	40	100
4	2005	Y	Post Freeze Date	200	40	0
5	2008	N	Energy Only	100	20	0

- Expected to be filed in September 2017 with requested effective date of June 1, 2018
- Requesting an answer from FERC in December 2017 (60 days) to ensure adequate lead time for implementation
- Intent of filing has been shared with various stakeholder groups
 - PJM & MISO JCM
 - CMP Stakeholder groups

Allows for proper discussion and agreement for all outstanding solution design components

- Firm Flow Limit (Non-Market facility limits)
- Intermittent Resources
 - Wind and solar treatment
- Transfer Feasibility
 - Ensure planning based reliability
- Merit order (dispatch order)



Expected Date	Action
Sep 2017	Phase 1 CMP/JOA changes FERC filing
Winter 2017/Spring 2018	Complete Straw Proposal/ Whitepaper
June 1, 2018	Phase 1 Implementation
Summer/Fall 2018	Phase 2 CMP/ JOA changes FERC filing
June 1, 2019	Phase 2 Implementation

- PJM-MISO JOA changes posted with MC Webinar material
- [Freeze date white paper](#) and [presentation](#)
- Presentation to lay out [Phase 1 implementation](#)