MISO/PJM
Joint Stakeholder Meeting

The Westin O'Hare
Rosemont, IL 60018
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MISO/PJM CBM Application to Tariff Service

Used

• Transmission Service
  – CBM decremented from Flowgate rating including Firm AFC. Not applied to Non-Firm AFC
  – Prevents selling into reliability margin
  – Limited to term where AFCs are calculated

Not Used

• Gen Interconnection
  – Counter-intuitive to restrict generation addition to protect margin for generation import

• Deliverability
  – Subset of Interconnection tests
  – Same philosophy applies
MISO CBM

- Capacity Benefit Margin – The amount of firm transmission transfer capability preserved by the TSP for LSEs whose loads are located on that TSP’s system to meet firm load obligations during a capacity emergency (i.e. concurrent loss of multiple generators)

- CBM updates performed min twice a year (summer & winter)

- Application:
  - MISO uses Flowgate methodology to calculate AFC values and evaluate TSRs.
  - CBM values are calculated in MWs for each Flowgate & decremented from the Total Flowgate Capability used for firm AFC
  - Utilized via declaration of NERC Energy Emergency Alert
CBM established through a LOLE study

- A Generation Capacity Import Requirement (GCIR) is determined for each MISO CBM study area based on a LOLE study. (GCIR is the amount of generation capacity from sources external to a CBM study zone to meet its resource adequacy requirements as an alternative to internal resources)

- The CBM for each Flowgate is determined by performing a power transfer analysis for each study area that has an import requirement (positive GCIR) to meet its LOLE requirement.

- The largest incremental impact on a Flowgate from these transfers becomes the initial CBM for this Flowgate

- The incremental amount of CBM that is needed above the TRM (ARS component) will be preserved as CBM on that Flowgate

Reference MISO Capacity Benefit Margin Implementation Doc TP-PL-003
- Local Resource Zones (LRZ)

MISO Planning Resource Zones:

1. DPC, GRE, MDU, MP, NSP, OTP, SMP
2. ALTW, MEC, MPW
3. AMIL, CWLP, SIPC
4. AMMO, CWLD
5. BREC, DUK (excluding OH), HE, IPL, NIPSCO, SIE
6. CONS, DECO
CBM is an input to Transmission Service Request process.
Import Limit is an input to CBM.
Import Limits are calculated in LOLE process.

Next step – MISO ongoing efforts to review LOLE calculations to improve market efficiency in areas of reserve margin & future capacity aspects of JCM
MISO Models

- Generators and Load
- Treat internal Zones
- Dynamic External Tie Usage
- CBM not a factor in:
  - LOLE
  - Expansion Planning
  - RT market (except for in-out TS)
  - ‘End stage’ of NERC Emergency Operating Procedures
MISO LOLE Modeling

MISO LOLE model dynamically determines use of external ties, the drivers are:

- Known transfer limits in and out of an RTO from the energy market history
- The level of RTO firm import and export transactions modeled. This is similar to tracking ATC in TSR
Proposed Technical Approach

- Proof of the Concept – MISO to calculate the planning reserve margin (PRM) for MISO & PJM including sensitivities
- Carve out PJM in more detail in MISO’s model by modeling systems external to PJM; same dynamic external tie method used to model systems external to MISO
- Model a joint MISO-PJM RTO with an external using the dynamic MISO external modeling method
Next Steps:

• JCM Modeling Diagrams are available for future discussion and explanation

• SME can return and explain similar to that presented at MISO LOLEWG September 12, 2012 Item 06: