MISO-PJM Interregional Overview

EISPC-EIPC Webinar on Planning Processes
November 17, 2016

MISO-PJM JOA

- MISO and PJM have had a Joint Operating Agreement since 2003
- Used to implement FERC No. Order 1000 interregional compliance
- Article IX: coordinated regional transmission expansion planning
  - Annual model and data exchange
  - Various studies enabled under a Coordinated System Plan (CSP)
- Interregional coordination and studies managed by MISO-PJM with stakeholder review and input through Interregional Planning Stakeholder Advisory Committee (IPSAC)

Localized Targeted Studies

- MISO and PJM studied two targeted areas in 2015/2016
- Southwest Michigan and Northern Indiana
    - Evaluated how future congestion and interconnection changes impacted congestion
    - Little economic opportunity and few reliability issues found
    - Recommended further monitoring in the IPSAC or regional processes
- Quad Cities (Iowa/Illinois)
    - Evaluated out-year MTEP reliability issues in joint model
    - Determined if coordinated interregional solutions were better than proposed regional ones
    - No opportunities found but gained model building improvements

Targeted Market Efficiency Projects

- MISO and PJM introducing new Targeted Market Efficiency Project (TMEP) type
- In addition to Interregional Reliability, Market Efficiency, and Public Policy Projects
- Benefits based on historical Market-to-Market (M2M) congestion issues
- Small, low cost, short lead time projects
- RTOs targeting to file this addition to JOA in October 2016
- Accompanying TMEP study (slides 6-8)

TMEP Details

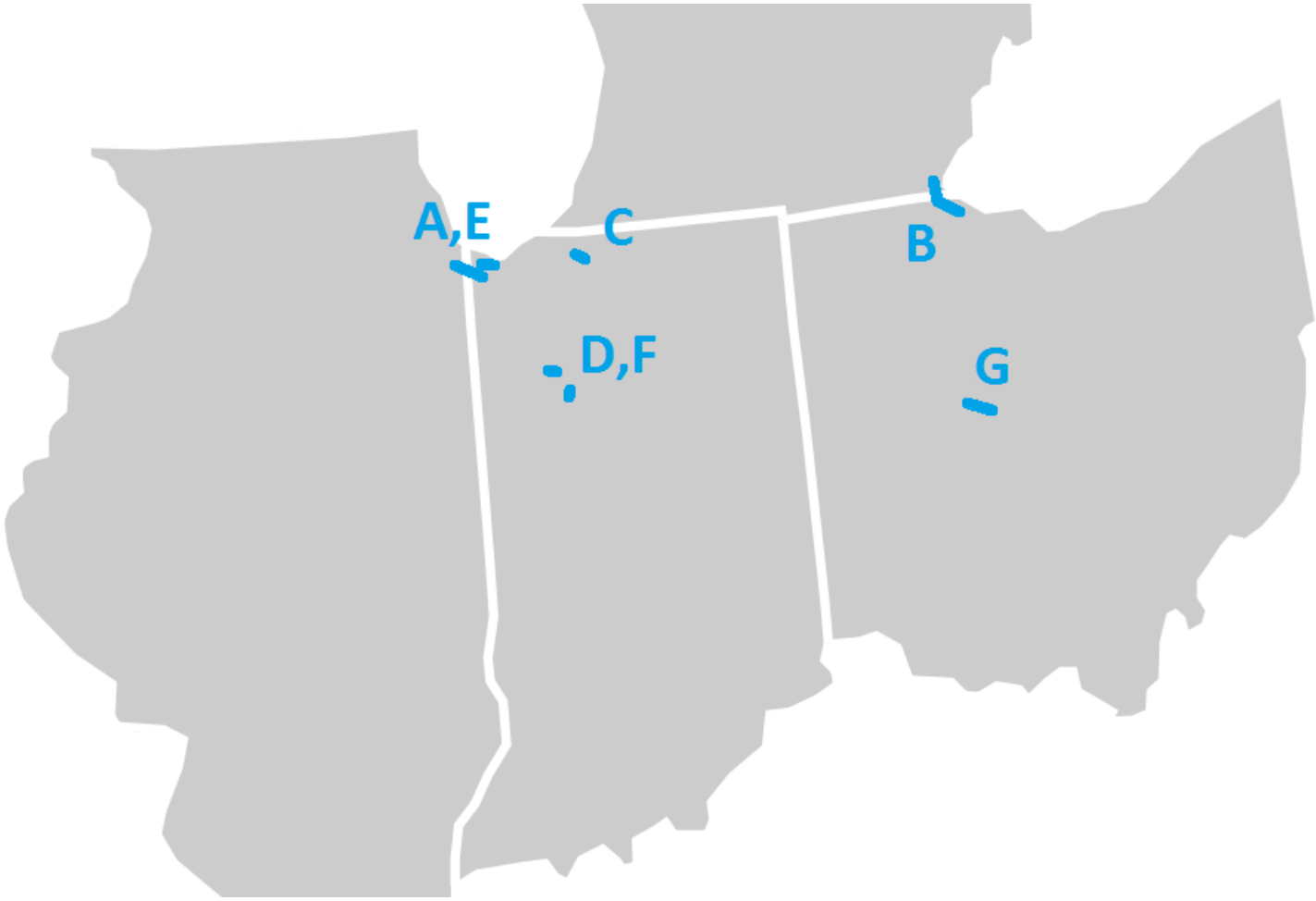
- Focus is M2M flowgates
- Projects must be in service by 3rd summer peak
- Projects over $20 million not eligible
- Benefits based on 2 years of historical congestion (Day Ahead + Balancing/Excess Congestion Fund)
- Four years worth of benefits must completely cover project's installed capital cost
- Discount/inflation rate not necessary as all projects are near term
- Benefit determination between RTOs adjusted by M2M payments

TMEP Study

- No separate regional analyses
- Avoid complicated interregional analysis which could delay implementation
- List of facilities with potential upgrades has been developed
- Verified effectiveness of upgrades
- Majority of analysis is complete
- Preliminary results are 7 projects totaling approximately $19M for in excess of $100M in identified benefits.
- Proposed to split benefits between RTOs according to historical shares of joint congestion responsibility

TMEP Locations

Letter	Flowgate
A	Burnham – Munster 345 kV
B	Bayshore – Monroe 345 kV
C	Michigan City – Bosserman 138 kV
D	Reynolds – Magnetation 138 kV
E	Roxana – Praxair 138 kV
F	Klondike – Purdue 138 kV
G	Marysville – Tangy 345 kV



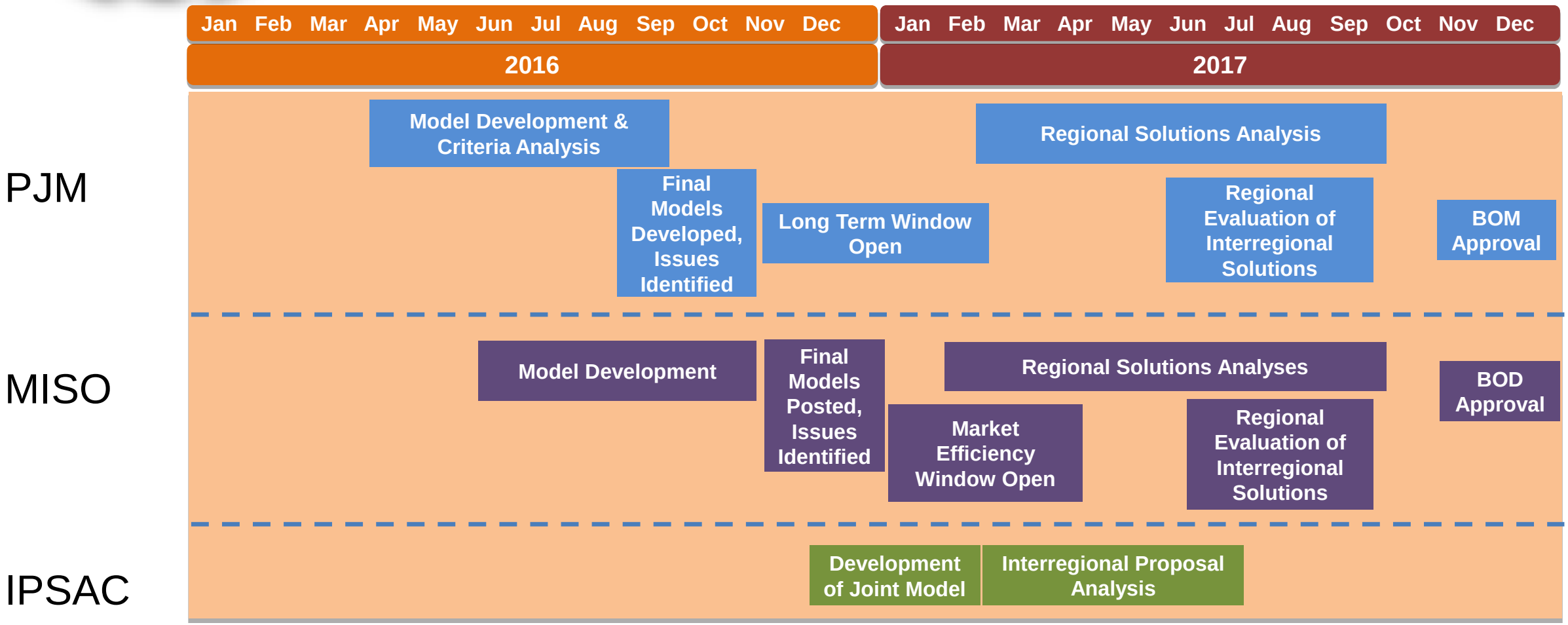
Summary of Recommended TMEPs

Facility	Transmission Owner	TMEP Cost (Million $)	TMEP Benefit (Million $)	Benefit Allocation (%PJM/%MISO)
Burnham - Munster 345kV	CE - NIPS	6.5	32	88/12
Bayshore - Monroe 345kV	ATSI - ITC	1	17	89/11
Michigan City – Bosserman 138kV	NIPS - AEP	2.3	29.6	90/10
Reynolds-Magnetation 138kV	NIPS	0.15	14.5	41/59
Roxana - Praxair 138kV *	NIPS	4.5	6.5	24/76
Marysville-Tangy 345kV	AEP/ATSI	"minimal"	12	98/2

Coordinated System Plan Study

- 2-year timeline (next slide)
- Milestones align with regional processes
- 1st year: Identify issues
- 2nd year: Solicit and evaluate project solutions
- Potential projects approved by respective Boards at end of 2nd year

Interregional Market Efficiency Project Timeline



*Interregional proposals must be proposed in each regional window (January & February overlap)

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