CEE 21st Annual Meeting/Think Day, December 7-8, 2016


MISO presentation
As the electric industry continues to change, many challenges and opportunities are created for MISO and its members.

MISO is committed to mitigating the risks and capturing potential value afforded by shifts in the industry.
Need to research and partner with stakeholders now, ahead of the technology curve

- Utility scale energy storage
- Utility scale solar
- Distributed Energy Resources
- High Voltage Direct Current (HVDC) Transmission
- Synchrophasors
Energy Storage technology advancement projected; adoption is growing where policy is supportive

Source: EPRI
Minimal solar penetration today, but economics and public policy are driving to higher penetration potential
Growth of distributed energy resources in MISO has been slow thus far, but we’re actively studying opportunities for integration
HVDC technology is both in-use and being evaluated for expanded use in the MISO footprint.

- **In-Service**: Two lines existing, A third being built
- **Proposed**: Square Butte HVDC, CU HVDC, CleanLine Rock Island, CleanLine Grain Belt Express, CleanLine Plains and Eastern, Southern Cross, Straitst HVDC Flow Control (New technology)
MISO’s use of synchrophasor technology will continue to evolve as the technology continues to mature.
Working together to ensure the evolving resource portfolio is utilized reliably and economically

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<th>Strategic Objectives</th>
<th>Strategic Initiatives</th>
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| Market and Grid Positioning | - Portfolio Evolution (Environmental Policy and Economics)  
- Electric – Gas Coordination  
- Seams Optimization  
- Grid Technology Advancement  
- Infrastructure Development Enablement |
| Serve and Grow Membership | - Serve Existing Members  
- Strategic Member Expansion |
| Provide Independent Thought Leadership | - Regional Modeling and Analytics  
- Policy-Level Relationships, Reputation and Visibility  
- Platform Provider for Policy Implementation |

Strategic Competencies: People, Process, Technology