WHAT’S NEXT FOR TRANSMISSION?
SUCCESS STORIES AND LESSONS LEARNED

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INTRODUCTION TO AMERICANS FOR A CLEAN ENERGY GRID
Americans for a Clean Energy Grid (ACEG) is the only non-profit broad-based public interest advocacy coalition focused on the need to expand, integrate, and modernize the North American high-voltage grid.

National organization uniting diverse interests – environmentalists, utilities, renewable industry, transmission and technology companies.

New Macro-Grid Initiative backed by Breakthrough Energy

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Multi-Value Projects (MVPs) are major regional projects designed to reduce system congestion and meet renewable standards as known in 2011.

Meet one or more goals:

- Reliably and economically enable regional public policy needs
  - Cost of $6.6 billion

- Provide multiple types of regional economic value
  - $7.3 to $39 billion in net benefits over the next 20-40 years
  - Total benefit-to-cost ratio of 1.8 to 3.1

- Provide a combination of regional reliability and economic value
  - 15 of 17 projects are in service
The Multi-Value Project portfolio had some unique attributes that will be challenging to recreate in the present day

- A single portfolio to address needs across MISO
- Cost shared pro rata to load
- Planned prior to Order 1000
MISO member plans project a significant portfolio shift; differences across portfolios present additional challenges and opportunities

These figures show utilities' total energy generated by fuel type, in megawatt-hours. Current figures compiled by S&P Global Market Intelligence. 2030 projections compiled from IRPs, investor reports, and other sources.
Work to-date indicates expected portfolio changes will cause significant grid and stability issues requiring increased transmission investment

• Issues are driven by reduction in conventional generation and the increase in inverter based (i.e. wind/solar/battery) generation
• Regional energy transfer increases in magnitude and becomes more variable leading to a need for increased extra high-voltage line thermal capabilities
• Increase in renewable penetration causes different dispatch patterns of conventional generators, leading to several dynamic issues
• Power delivery from weaker areas may need transmission technologies equipped with dynamic-support capabilities
Transmission needs, overall transmission costs and generation costs can change based on where renewables are sourced, but planned generation costs will far outweigh transmission costs in any case.
Transmission planning provides a comprehensive approach that covers short and long term needs to address generation additions, ongoing reliability, market efficiency and policy trends.
There are conditions precedent for longer-term transmission plans to be approved and successfully developed.

**Policy Consensus**
Consensus that transmission is required to address the subregional and collective needs of the footprint.

**Robust Business Case**
Analysis of subregional issues and solutions compatible with regional reliability and market operations needs.

**Cost Allocation & Recovery**
Costs assigned roughly commensurate with benefits to each area.
THANK YOU FOR LISTENING!

Questions?