U. S. Department of Energy
National Electric Transmission Congestion Study Workshop
Saint Louis, Missouri

Ameren

December 8, 2011

Maureen A. Borkowski President & CEO, Ameren Transmission Company

CONGESTION IN THE MIDWEST

- Midwest ISO performs regular congestion studies looking at historical and expected future congestion
  - Top Congested Flowgate Study
  - Cross-Border Congested Flowgates (with PJM)

- Significant congestion exists in several areas
  - Southeast Missouri, Southern Illinois and Indiana
  - Chicago area, Southern Wisconsin and Northern Indiana surrounding Lake Michigan
  - Indiana and Kentucky border

- Historically, dozens of transmission projects were evaluated to mitigate congestion on the top congested flowgates
  - RECB II Benefit/Cost Threshold was used
  - Only one small project passed the criteria

Ameren

SOLUTIONS TO CONGESTION

- MISO developed a multi-benefit, portfolio approach for transmission expansion planning and cost allocation

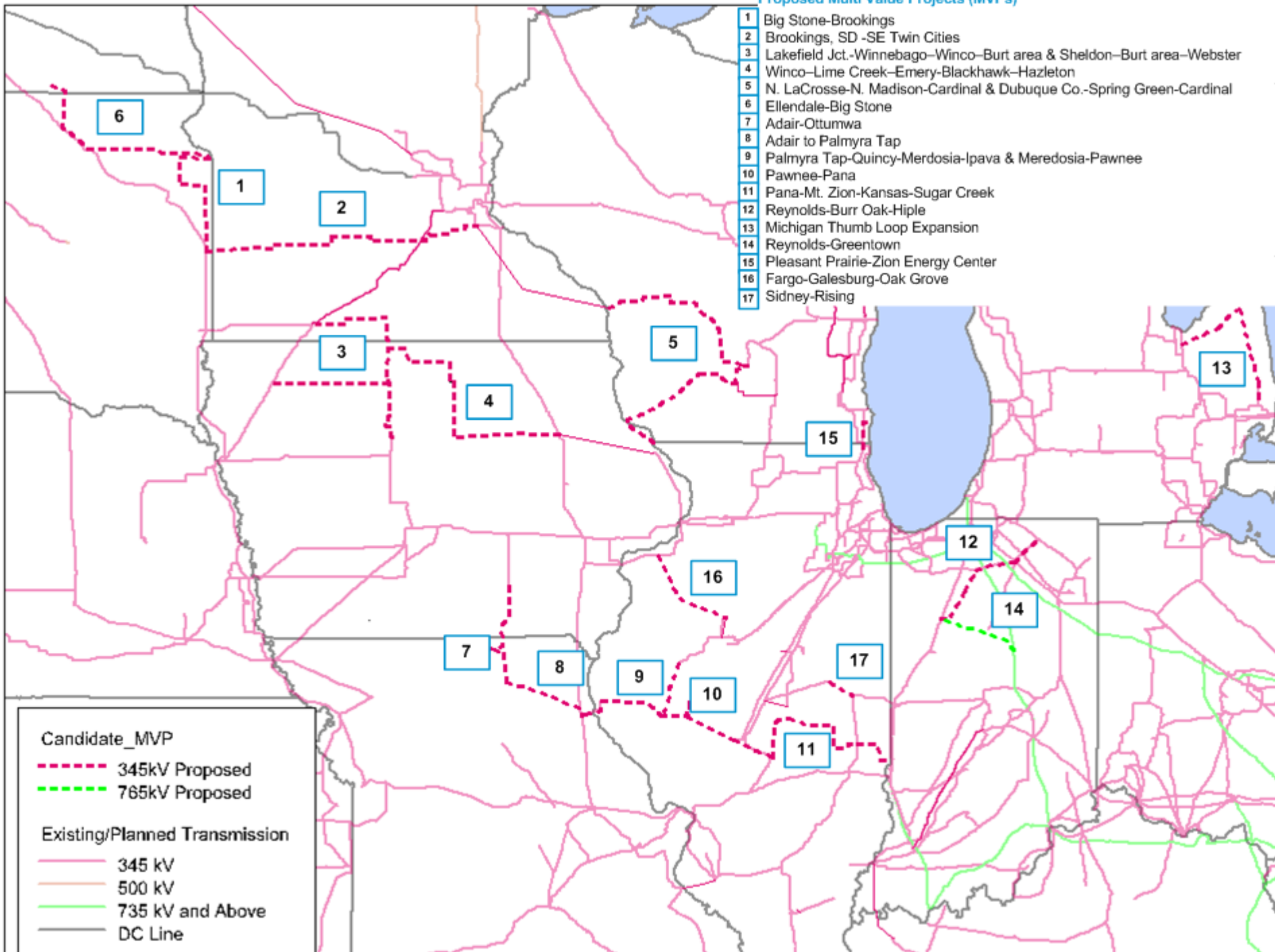
- A Multi Value Project (MVP) must:
  - Enable the Transmission System to reliably and economically deliver energy in support of documented energy policy mandates or laws that have been enacted or adopted through state or federal legislation or regulatory requirement
  - The MVP must be shown to enable the transmission system to deliver such energy in a manner that is more reliable and/or more economic than it otherwise would be without the transmission upgrade.

- MVPs are evaluated on a portfolio basis to ensure reasonable alignment between benefits and cost allocations

- MVP Portfolio benefits include integration of renewable resources, reduced congestion, and increased reliability, among other benefits

Result: Projects that could not be justified based on congestion mitigation alone can now be developed based on the broad array of benefits.

Ameren


Proposed Multi Value Projects (MVPs)
1 Big Stone-Brookings
2 Brookings, SD -SE Twin Cities
3 Lakefield Jct.-Winnebago–Winco–Burt area & Sheldon–Burt area–Webster
4 Winco–Lime Creek–Emery-Blackhawk–Hazleton
5 N. LaCrosse-N. Madison-Cardinal & Dubuque Co.-Spring Green-Cardinal
6 Ellendale-Big Stone
7 Adair-Ottumwa
8 Adair to Palmyra Tap
9 Palmyra Tap-Quincy-Merdosia-Ipava & Meredosia-Pawnee
10 Pawnee-Pana
11 Pana-Mt. Zion-Kansas-Sugar Creek
12 Reynolds-Burr Oak-Hiple
13 Michigan Thumb Loop Expansion
14 Reynolds-Greentown
15 Pleasant Prairie-Zion Energy Center
16 Fargo-Galesburg-Oak Grove
17 Sidney-Rising
Candidate_MVP
345kV Proposed
765kV Proposed
Existing/Planned Transmission
345 kV
500 kV
735 kV and Above
DC Line

FUTURE IMPACTS ON CONGESTION

- MISO is continuing to evaluate other transmission projects
  - Southeast Missouri and Southern Illinois area will likely require mitigation
  - Over 6000 MW of generation is concentrated in this area

- Other factors to consider
  - Continued wind development
  - Plant closures due to market conditions, age, and/or environmental regulations
  - Changing generation dispatch patterns due to environmental regulations (eg. gas generation favored over coal)
  - Impact of transmission maintenance on congestion
  - New generation
  - New market participants
  - Changing load profiles due to demand response and energy efficiency or economic conditions

Ameren

OTHER ISSUES

- DOE congestion studies should include a variety of scenarios
  - Economic
  - Environmental Regulations
  - Gas Prices
  - Generation fleet mix
  - Transmission system buildout
- EIPC/EISPC scenario analysis could be helpful
- RTOs provide good data source