



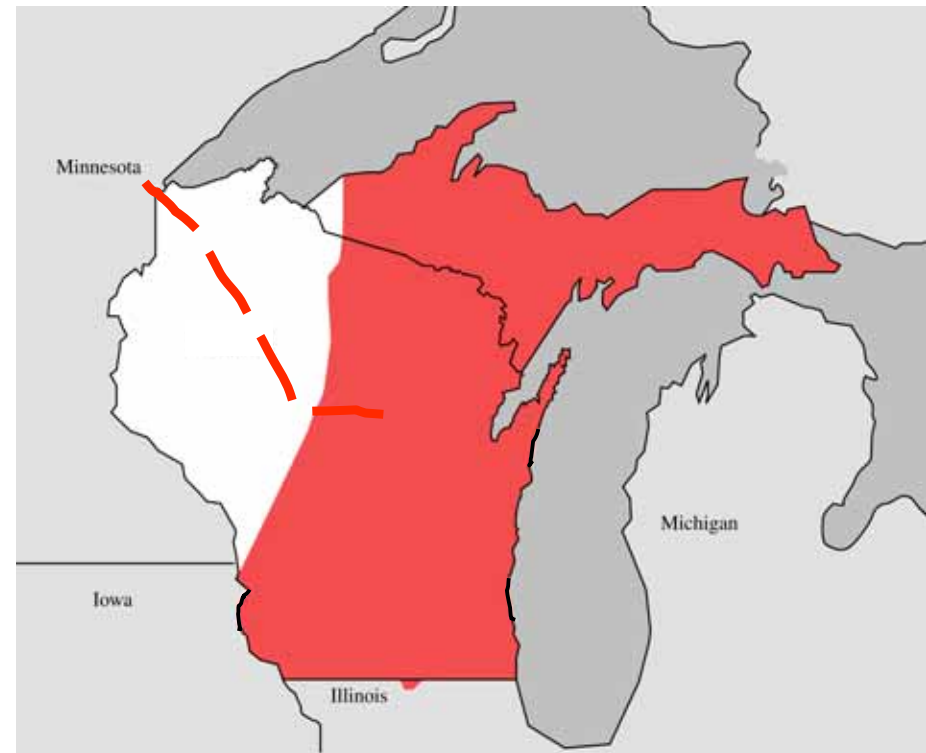
Expanding Transmission for Renewable Resources

Wisconsin Renewable Forum
March 13th, 2008



ATC Overview

- Formed in 2001
- Transmission only utility
- Owns, plans, builds, maintains and operates electric transmission facilities in four states
- 9,350 miles of transmission line and 500 substations
- Member of Midwest ISO





ATC Construction Activities

- Constructed/rebuilt approximately \$1.7B of transmission since 2001
 - Upgraded more than 1200 miles of transmission line
 - Built 30 new transmission lines (327 miles)
 - Arrowhead Weston Line
 - 220 miles
 - \$420M
 - Built 12 new substations
 - Improved 103 substations
- Planned capital expenditures over the next ten years =~ \$2.8B



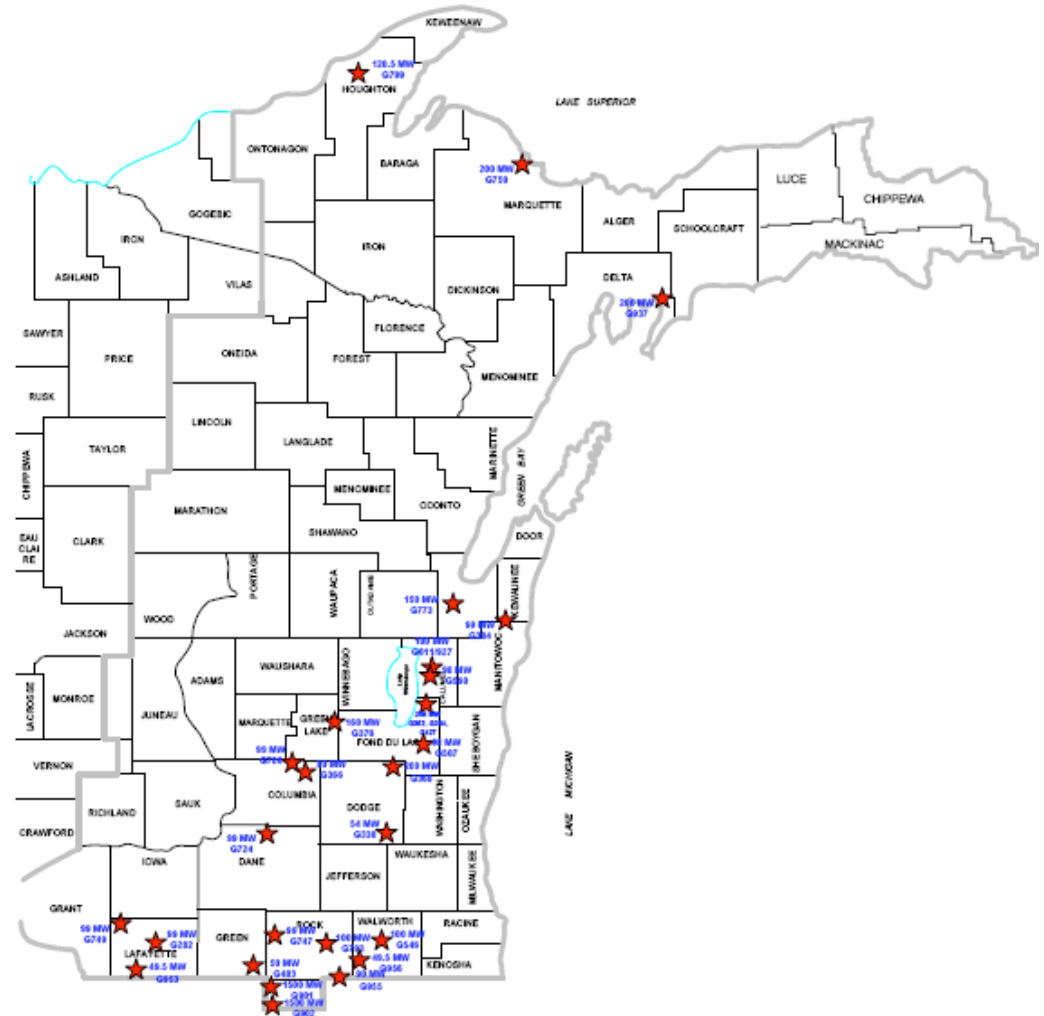
ATC Interconnection Activities

- Interconnection studies
 - Subcontractor to MISO, perform studies
 - Work closely with generators and MISO
- Cost Allocation
 - ATC reimburses 100% upgrade costs
- Active participants in MISO Interconnection Process Task Force
- Work closely with stakeholders on all projects



Wind Power in ATC and the Midwest

- ATC Footprint
 - 400 MW of wind power either under construction or moving to construction
 - Signed interconnection agreements for additional 700 MW of wind power
- Midwest ISO Footprint
 - Over 55,000 MW in wind interconnection requests





Challenges of Wind Interconnection in Midwest

- Wind vs. load location
 - Wind in one state, transmission in a second, load in a third
- Wind integration on electrical system
 - Large (30-50%) penetration in a small local area
- MISO interconnection queue
- Cost allocation



Solutions

Wind Vs. Load Location

- Facilities need to provide multiple benefits
- Stakeholder process
 - Open and inclusive
 - Public/stakeholder outreach
 - Dane County Collaborative
 - Economic project collaborative
 - Successes
 - Arrowhead Weston
 - Central Wisconsin – 100 miles of new right of way



Solutions

Wind Integration on the Electrical System

- Design, plan and execute to protect the system from intermittent injections
 - Feb. 26th event in Texas: multiple initiators but intermittent nature of wind was a component
 - Geographic dispersion and demand response helped



Solutions

MISO Queue Proposal

- Seeks to balance the flexibility and certainty that customers want
- Test for “seriousness” of a project to get into the latter stages of the process
 - Cash at risk
 - Turbine contracts
 - Letter of credit for network upgrades
- No “free option” for suspension of interconnection agreement
- Make it more difficult to stall the queue and may allow projects to park while others continue
- Test for “system readiness” upon submission of request
 - Where system is ready, “serious” requests can move ahead to latter phase immediately



Solutions Cost Allocation

- ATC socializes 100% of network upgrade costs for interconnecting generation across its footprint
- Cost allocation requires a political solution
 - Texas and California have internal solutions
 - Midwest ISO costs and benefits are regional and cross state lines
 - Can we rely on technical “who benefits” calculations?
 - Potential solution
 - Take all states in the Midwest ISO that have a renewable portfolio standard (RPS)
 - Socialize cost of needed transmission to meet the RPS goals



Conclusions

- Consider all the current and future costs and benefits of wind interconnections
 - Reliability, economics, electricity loss reductions, environmental
- New facilities providing more than one benefit will be more successful
- Continue to involve all stakeholders throughout the process
- Suggested MISO Interconnection Queue improvements will help
- Need shared sub-regional vision for cost allocation