

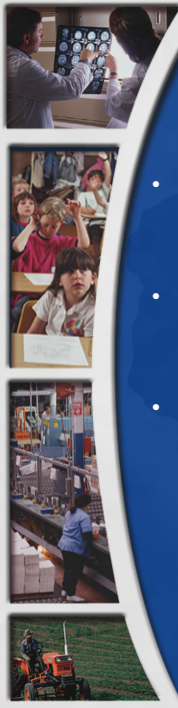
Overview of Transmission Projects


Mark Williamson, Vice President, Major Projects



American Transmission Company



- We are responsible for building, operating, upgrading and maintaining the transmission system in most of Wisconsin and Michigan's Upper Peninsula.
- We help ensure the reliability of the transmission system that delivers power to all customers using the grid in the upper Midwest.
- We are the critical link between generating plants and the utilities that provide power to your homes and businesses.






Types of Transmission


- Reliability reinforcement: Expand, upgrade and maintain the electric transmission system to ensure adequacy, reliability and security
- Access to markets: An adequate system that allows access to regional generation
- Generation: Connecting a generator to the electric power grid and delivering to local utilities

The Transmission System Today


- ATC system at its limits
 - Little new growth/generation/service can be accommodated without reinforcement
 - Enabling ongoing reliability requires reinforcement
 - Low voltage problems are a particular concern
 - Very little system operating margin
 - Insufficient import/transfer capability
- Key drivers
 - Load Growth and Location of Growth
 - Generation
 - MISO and Access to Markets
 - Other need drivers





Types of Transmission Solutions

- Line Projects
 - New line
 - Rebuilt line
 - Reconductor line
 - Uprate line
 - Convert voltage
- Substation Projects
 - New substation
 - Existing substation expansion
 - Substation equipment additions and replacements
- Other



Transmission Solutions

- Central Wisconsin
 - One new 345 kV line to accommodate WPS plant (2009)
 - New 345 kV line linking Morgan substation (Oconto Falls) with new sub in New London area (2009)
 - Application filed with PSCW (2005)
 - Expect application approval by end 2006





Transmission Solutions


- Dane County
 - Energy Initiative
 - Upgrade the Columbia-N. Madison 138 kV line to 345 kV
 - Project in-service this spring
 - New 345 kV line from Rockdale to W. Madison
 - In public outreach, pre-application phase
 - Application to be filed in early 2007
 - New 138kV line from N. Madison to Waunakee
 - In public outreach, pre-application phase
 - Application to be filed first quarter 2006



Transmission Solutions

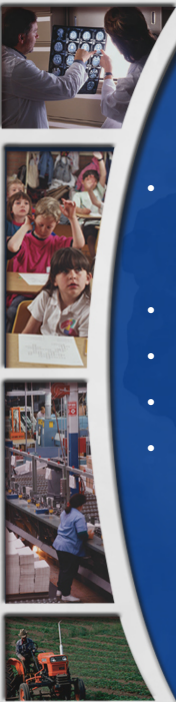

- Arrowhead-Weston
 - Being constructed in Wisconsin (Marathon, Clark, Taylor counties)
 - Construction complete in Minnesota
 - 30 percent of all line miles cleared
 - 18 percent of all foundations poured
 - 10+ percent of all structures erected
 - 62 percent of easements acquired; 67 percent of required miles of ROW obtained
 - Project expected to be finished and in-service mid-2008






Transmission Solutions Regional Access

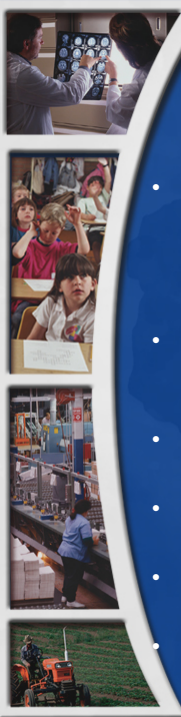
- Examining the value of expanding the transmission system for greater access to regional and in-state generation
- Many meetings held over last 2.5 years with a variety of stakeholders
- 5 geographically diverse options evaluated: 1 to MN; 1 to IL; 1 to IA; 1 to MI under Lake Michigan; 1 to Canada via the UP...examining new option to MN
- Projects to IA and IL hold greatest technical and economic promise



Transmission Solutions Regional Access

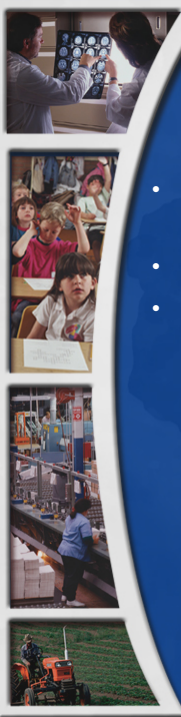
- Have asked PSCW for policy guidance on appropriateness of developing specific proposal for a new line
- PSCW public dialogue this month on ATC proposal
- 2006 begin characterization of potential route corridors
- File application with PSCW in mid-'07
- Proposed in-service date of 2013





CapX 2020-Transmission Infrastructure Investments for Minnesota

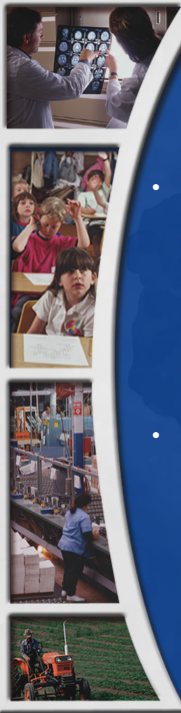
- Joint effort by Minnesota Transmission Utilities to deal with future transmission needs
 - Great River Energy, Minnesota Power, Xcel Energy, Southern Minnesota Municipal Power Agency, Ottertail Power Company, Missouri River Energy Services
- Transmission expansion needed over the next 15 years to serve the projected 4500 to 6300 MWs of increased demand
- As demand for electricity increases and projected generation is built, robustness of grid will deteriorate
- Proactive approach for major grid expansion-informing stakeholders and decision makers
- Future reliability, renewable energy and access to low-cost power at stake
- Translates into economic vitality of the state



Wholesale Energy Market

- Feb. 2002: Midwest Independent System Operator became transmission provider
- April 2005: MISO begins operation of energy markets
- Benefits of a regional market in the Midwest:
 - Reduce costs through more economic and efficient dispatch of generation
 - Monitor and react quickly to grid problems on a wide area basis
 - Solve congestion within the region every 5 minutes, *before* it happens, and resolve most congestion in the day-ahead market
 - Simplify the coordination needed to ensure regional reliability





Wholesale Energy Market

- Concerns for Wisconsin
 - WUMS and Northern WUMS are the only two Narrowly Constrained Areas in the MISO Region
 - Potential for higher local energy prices in Wisconsin due to congestion and lack of sufficient generator competition
- Mitigation efforts
 - Limitations on generator bids in NCA
 - 5 Year protection on congestion from network resources outside of WUMS
 - Congestion from outside resources uplifted to MISO market



Wisconsin Congestion Analysis

Report Issued: Sept. 23, 2005, prepared by: Customized Energy Solutions

Midwest Independent System Operator (MISO)

Real-time LMP Prices

April-August 2005

Location	Average RT LMP (April - August)	LMP Premium (\$/mwh)	LMP Premium (%)
EASTERN WISCONSIN LOAD	\$56.51	--	--
REST of MISO	\$45.46	\$11.05	24%
MINN HUB	\$46.69	\$9.82	21%
ILLINOIS HUB	\$38.87	\$17.64	45%
CINERGY HUB	\$47.43	\$9.08	19%
MICHIGAN HUB	\$49.60	\$6.92	14%

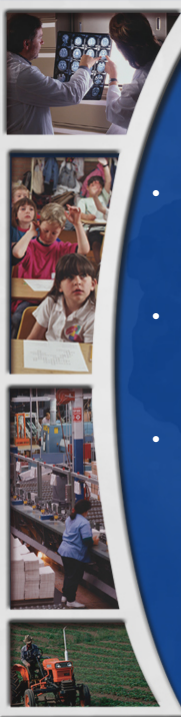
- Much of Wisconsin (Eastern Wisconsin Load) has experienced higher real-time and day-ahead electricity rates than its neighbors over the first five months of MISO operation.

Average Off- and On-Peak LMP Prices

April-August 2005

Location	Average Apr-Aug Off-Peak	Average Apr-Aug On-Peak	Off-Peak Premium	On-Peak Premium
EASTERN WISCONSIN LOAD	\$41.75	\$75.91	--	--
MINN HUB	\$25.85	\$62.56	\$15.90	\$13.35
ILLINOIS HUB	\$33.42	\$63.28	\$8.33	\$12.63
CINERGY HUB	\$34.03	\$63.70	\$7.72	\$12.20
MICHIGAN HUB	\$36.02	\$67.96	\$5.72	\$7.95

- Significant congestion on the transmission system in the Eastern Wisconsin load is a cause of the higher electricity rates in Wisconsin.



Wisconsin Congestion Analysis Causes of Higher Rates in Wisconsin

- **Transmission limitations**
 - Even a very small amount of transmission deficiency will cause significant increases in congestion costs.
- **Fuel price separations**
 - Overall, the premium for natural gas has been increasing, as well as the spread between natural gas and coal.
- **Generation Efficiency Differences**
 - For those hours where natural gas is on the margins in multiple areas and there is still congestion, the degree of the price separation is due to relatively less efficient generation being dispatched in the higher priced area and relatively more efficient generation being dispatched in the lower priced area.



Reliable Transmission

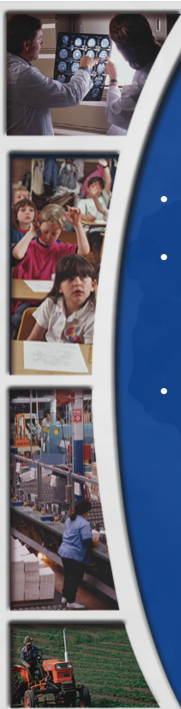
- **Will satisfy the economic needs and generate economic benefits for Wisconsin**
 - By providing reliable electricity for existing jobs
 - By providing reliable electricity for the growth of the high-tech sector






Reliable Transmission

- Will satisfy the social needs and generate social benefits for Wisconsin by providing the reliable electricity needed for
 - Quality health care
 - Education
 - Public safety
 - Public security
- Will provide Wisconsin residents the power they require



Ensuring Reliability

- ATC is a public utility, working for the public good
- Our job is to deliver the electricity that powers homes, businesses, industries and public health and safety organizations
- ATC will help Wisconsin meet its electricity needs



Thank You

Questions?

