



# CapX 2020

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***A Vision for Transmission Infrastructure  
Investments for Minnesota***



# Project Sponsors



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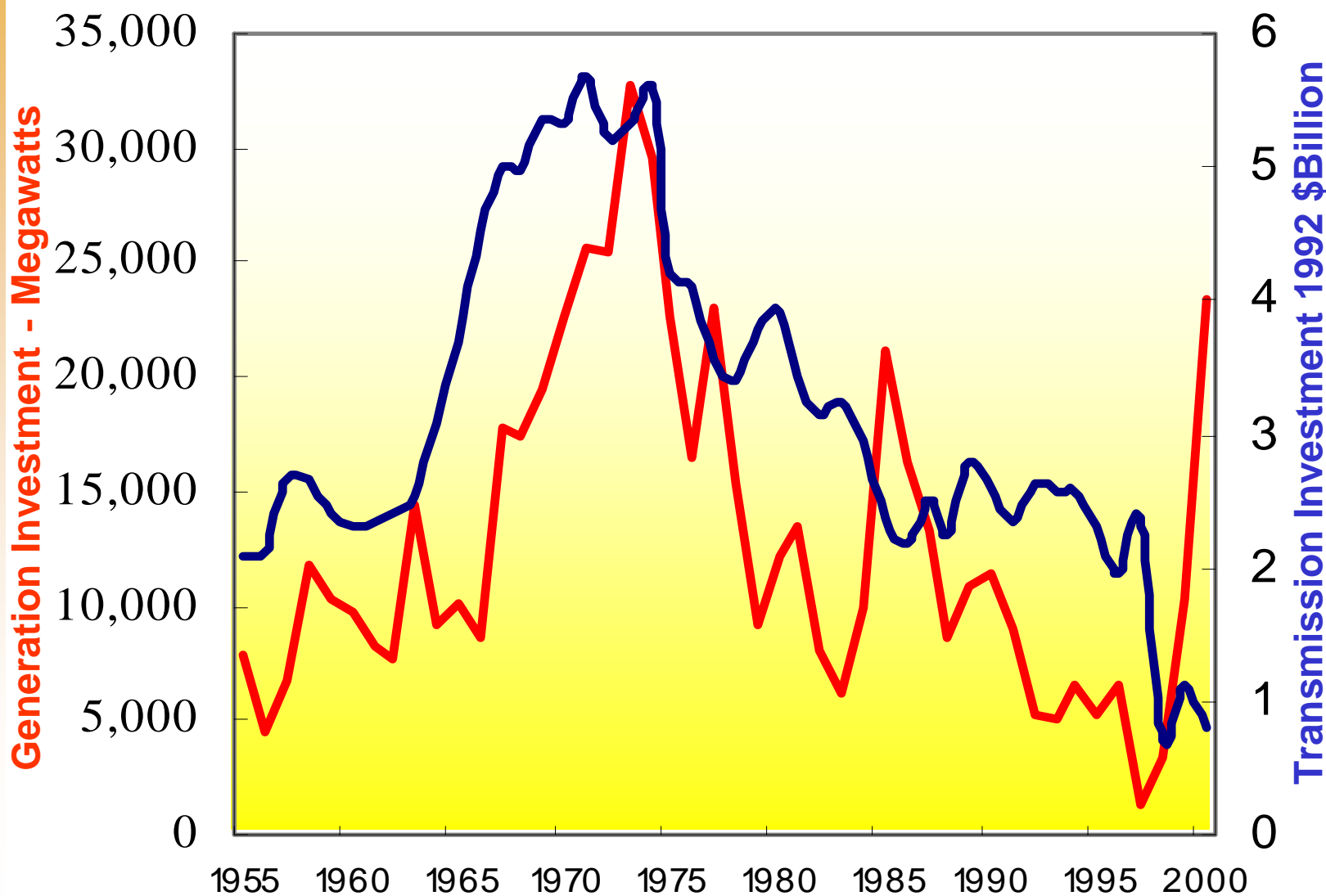
# CapX 2020 – What is it?

- ▶ **A long-range vision for transmission infrastructure investments for Minnesota**
- ▶ **Higher level of joint planning among transmission owners**
- ▶ **A planning study with a 15-year horizon**
- ▶ **It will put risk issues in focus for utilities, legislators, regulators and other stakeholders**

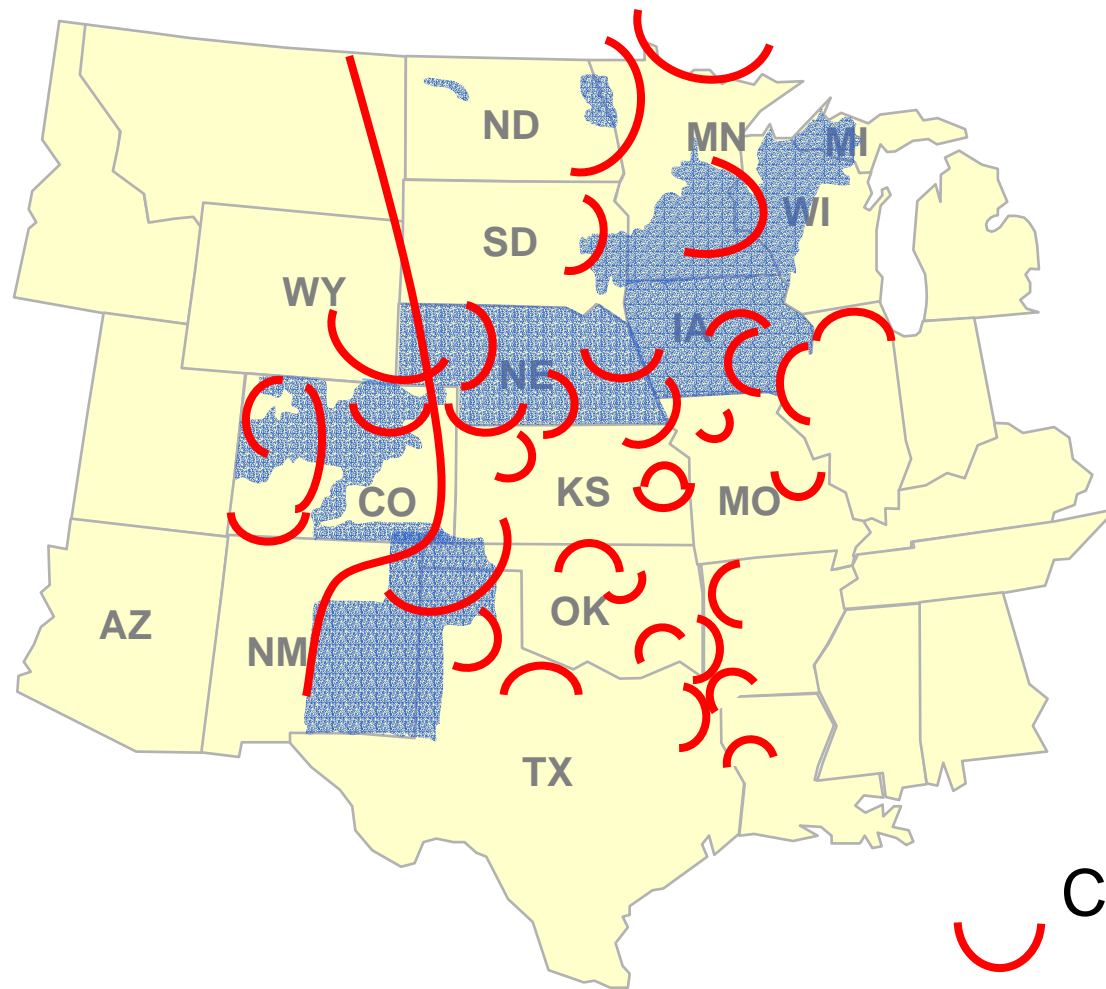
# Key Drivers

- ▶ **Load growth in Minnesota is continuing**
- ▶ **New generation, including base load, is needed**
- ▶ **Major transmission projects are needed**
- ▶ **Some plans exist, but lack commitment**
- ▶ **Regulatory and business challenges must be addressed**

# Transmission Investment

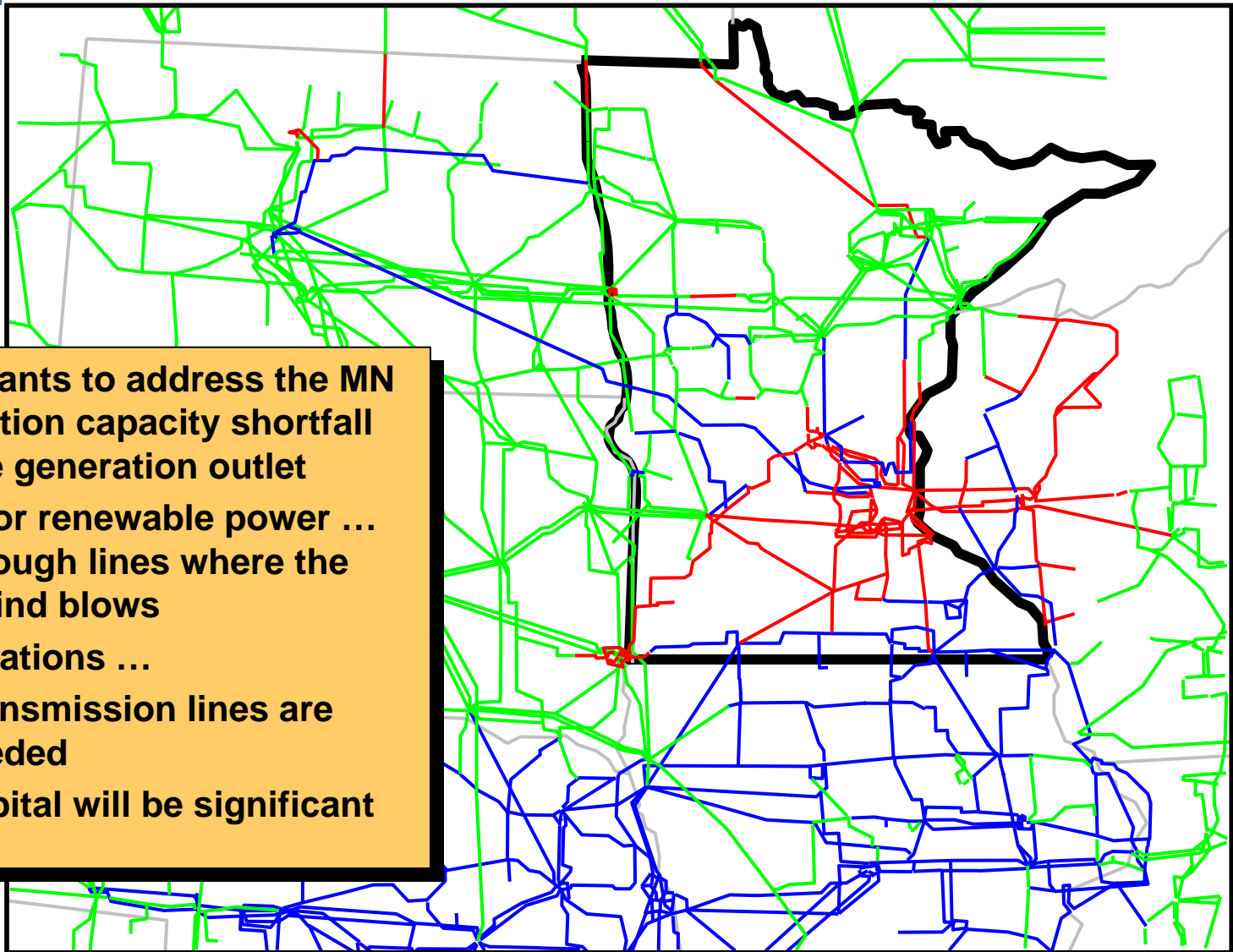


# Constraints

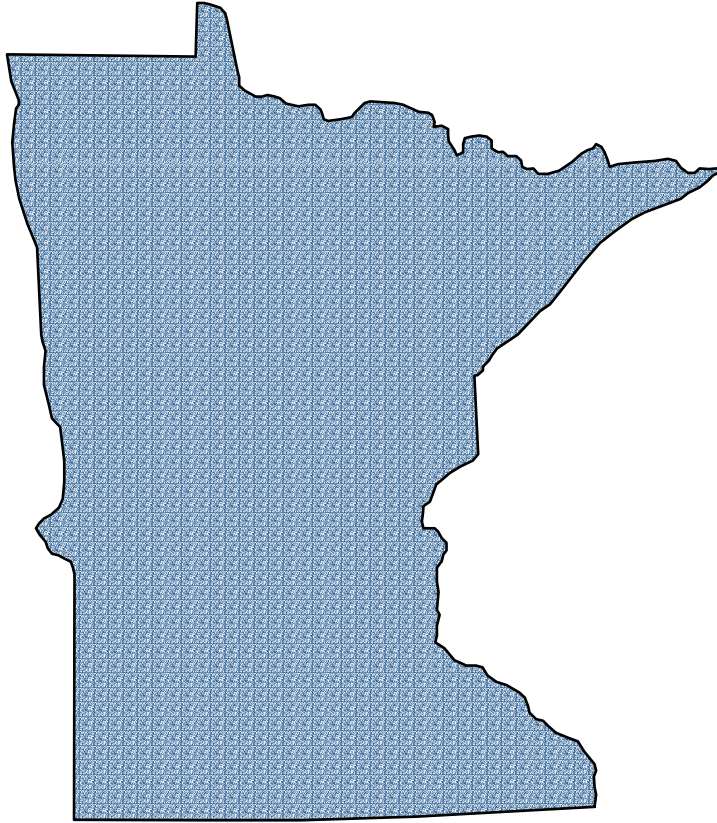


# Regional Grid Growth: MN

- ▶ New plants to address the MN generation capacity shortfall require generation outlet
- ▶ Push for renewable power ... not enough lines where the best wind blows
- ▶ Expectations ...
  - ▶ Transmission lines are needed
  - ▶ Capital will be significant



# CapX 2020 Technical Scope



- ▶ **Intent is to meet growing electricity demand with high reliability**
  - **Geography defined by service territories, plus**
  - **Regional facilities for capacity and reliability that support load serving, plus**
  - **Generation transmission to serve load**



# CapX 2020 Technical Scope

- **Will include new generation scenarios**
- **Will address transmission needs anticipated for Minnesota Renewable Energy Objective**
- **Will address issues related to achieving market efficiency**
  - **Congestion relief**

# CapX 2020 Coordination

## ▀ Studies

- **Upper Great Plains Transmission Coalition**
  - Northwest Exploratory Study
- **Northern IA/Southern MN Exploratory Study**
- **Red River Valley Transmission Improvement Planning Study (TIPS)**
- **Dakota Wind Studies 2004 (WAPA)**
- **MISO Baseline Reliability**

## ▀ Groups

- **MISO**
- **SPGs**
- **MN State Transmission Plan**

# CapX 2020 Study Schedule

<b>Stakeholder Input</b>	<b>August 04- December 04</b>
<b>Technical Studies</b>	<b>September 04 – February 05</b>
<b>Preliminary Report</b>	<b>October 04</b>
<b>Final Report</b>	<b>March 05</b>

# CapX 2020 Assumptions

## Load Levels

- MAPP 2009 models with loads adjusted to 2020 levels based on MAPP Load and Capability Report



## Generation Levels

- Known planned resource additions
  - Buffalo Ridge Wind, Faribault, etc
- Resource planners
  - Identify locations where they are studying
- Generation interconnection queue
  - MISO
- Stakeholder input

# CapX Study Timeline

<b>Task</b>	<b>Start</b>	<b>Finish</b>
<b>Develop scope</b>	<b>July 15</b>	<b>Aug. 15</b>
<b>Model development</b>	<b>Aug. 9</b>	<b>Sept. 1</b>
<b>Study analysis</b>	<b>Sept. 1</b>	<b>Feb. 15</b>
<b>Interim updates</b>		<b>Oct/Jan</b>
<b>Final report</b>		<b>March 1</b>

# Next Steps



- **Move forward with scope development and model development**
- **Develop a plan to address business and public policy concerns**
- **Work with stakeholders to implement vision**

# Technical Study Contacts

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