

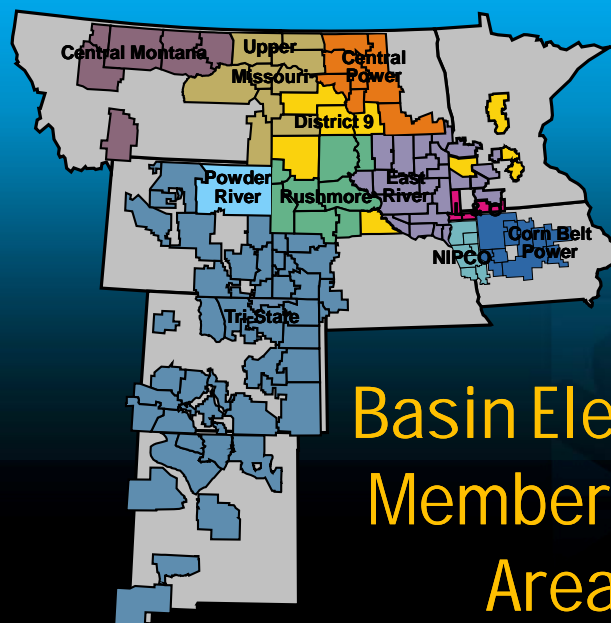


AVS CO₂ Project & MISO Update

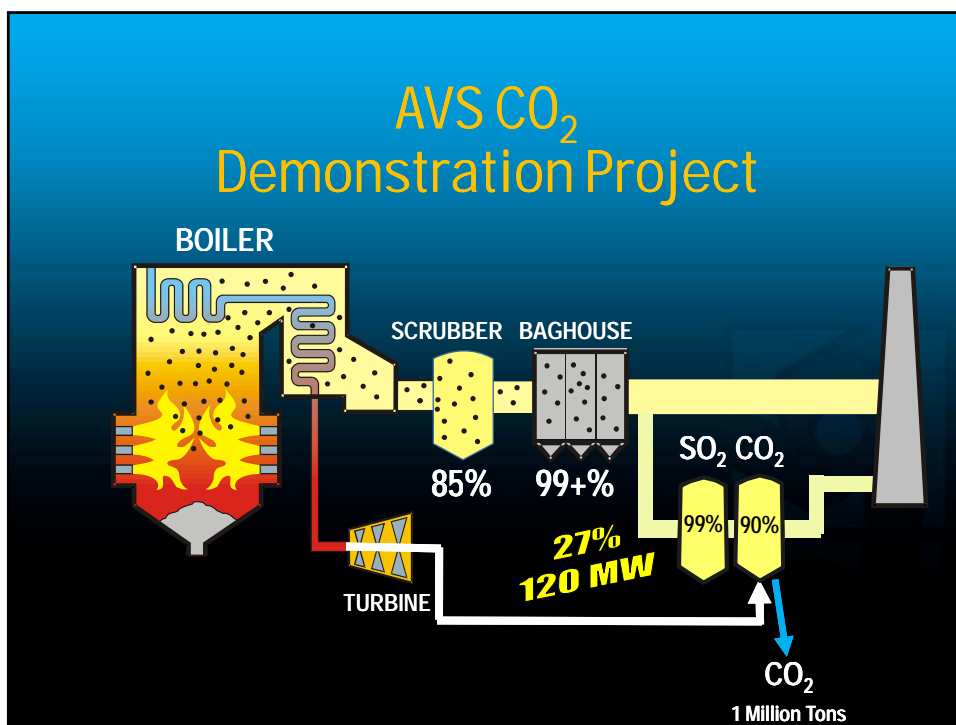
August 18, 2011

Dale Niezwaag
Basin Electric Power Cooperative

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**Basin Electric
Membership
Area**



AVS Carbon Capture Project

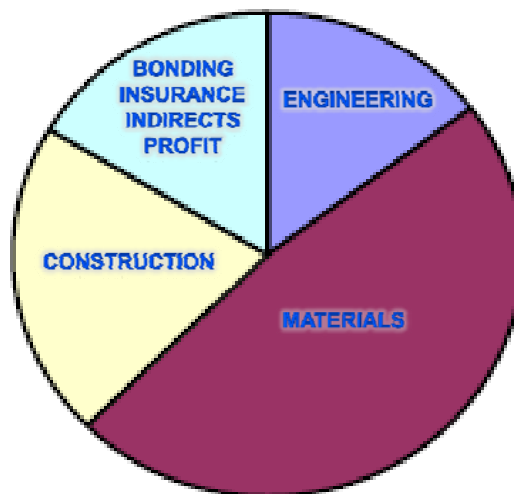
Requirements:

- Technology
- Oil Company CO₂ Sales Contract and Transport
- Environmental Assessment (NEPA)
- FEED Study
- Financing

“Strong Business Case”

Capital Cost Estimate

Doosan Estimated \$282.5 million +/- 15%



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Doosan Estimate Did Not Include

- Costs to modify the boiler and turbine
- Cost of CO₂ sequestration
- Cost for environmental permitting
- Costs for project contingency and risk
- Interest during construction
- Project management and engineering

All Inclusive Capital Cost up to \$500 Million

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Total Cost To Capture

**Doosan estimated
(\$282.5 million)**

\$50 - \$60 per ton CO₂

**All inclusive cost
(\$500 million)**

\$65 - \$75 per ton CO₂

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Current Status

- **Project on Hold**
 - Lack of regulation development
 - Present economic conditions
 - Full cost of the project
- **Too difficult to develop a compelling business case**
- **Dec. 2010 Basin Board placed the project on hold until further notice.**

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Knowledge Gained & Shared

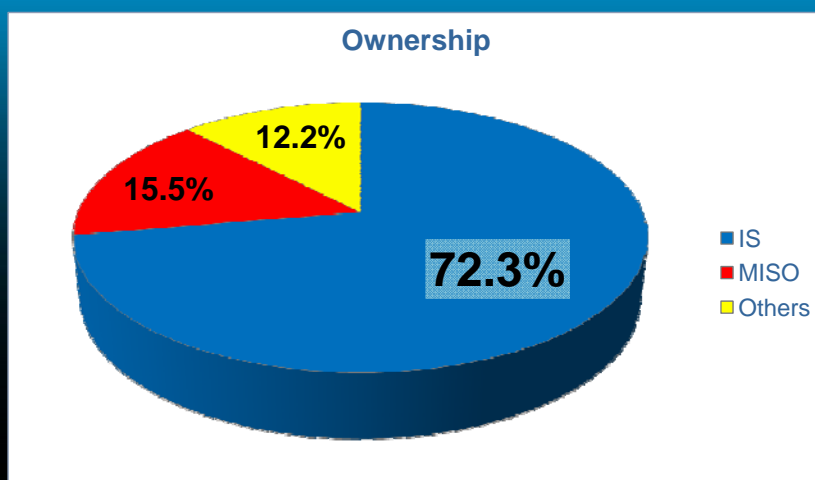
- **Identified viable approach to technical challenges**
- **Developed Capital and O&M cost est.**
- **Refined known economic challenges**
- **Utilities able to understand impacts to their station if this technology is applied**

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Transmission Update

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North Dakota Area Transmission



Current Activities

- **Placing some generation & load into the MISO system**
- **Studying several options**
 - Stay independent
 - Join MISO or SPP
 - Develop Hybrid Type of System
- **Discussing with members**
- **Monitoring cost allocation debate**

Protest of MISO Filing

- **Members of the Integrated System (IS) opposed recent tariff changes by MISO before FERC**
- **If MISO & Customer have path to same entity, each partner may use the others contract path capacity**

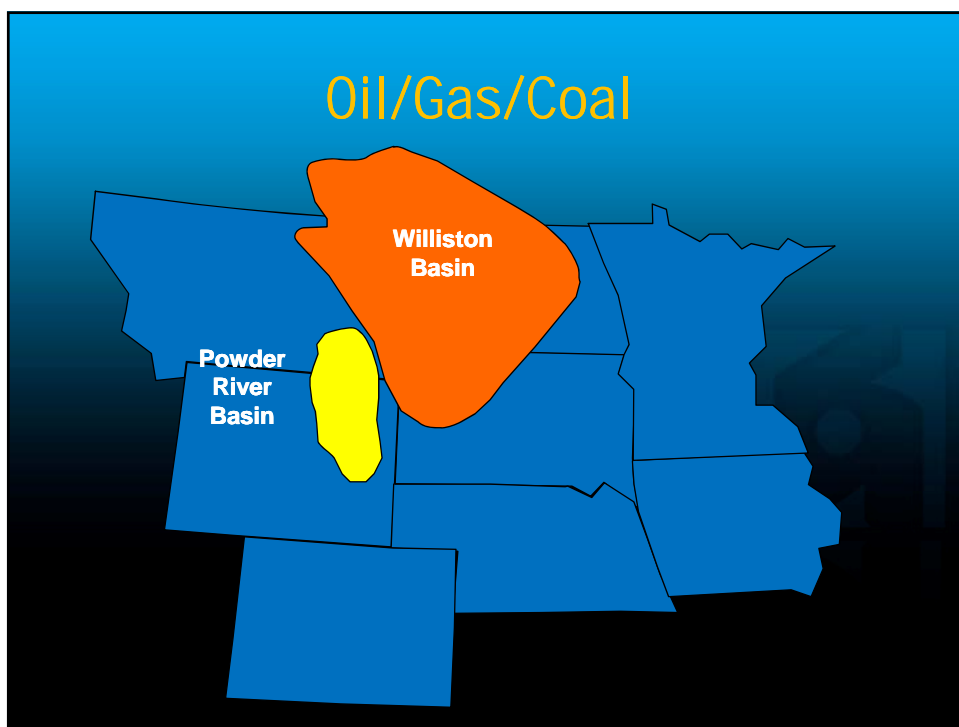
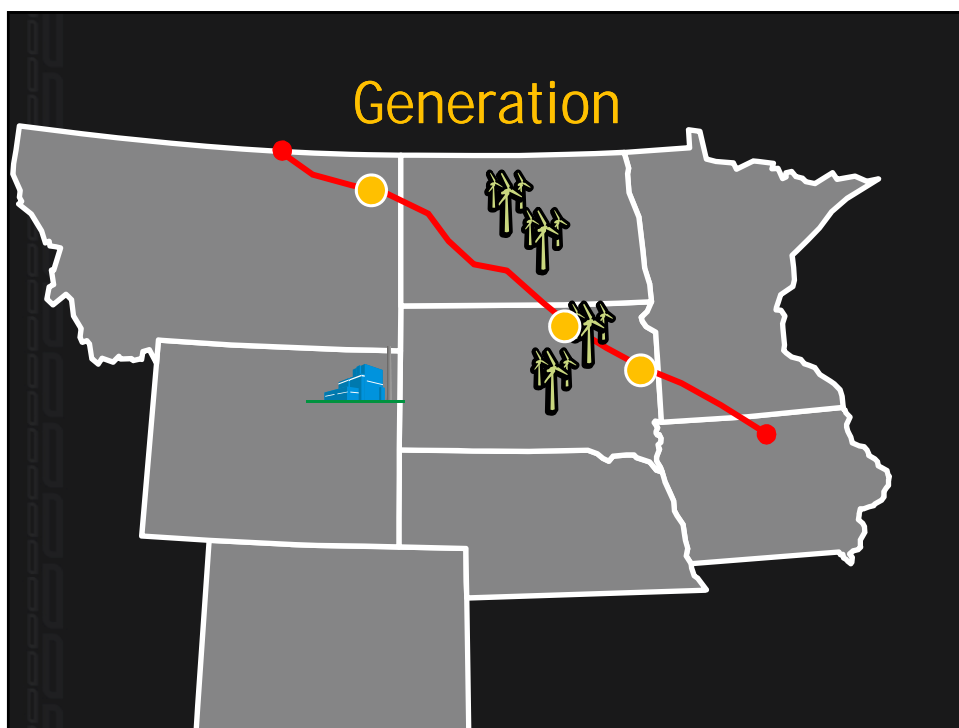
Protest of MISO Filing

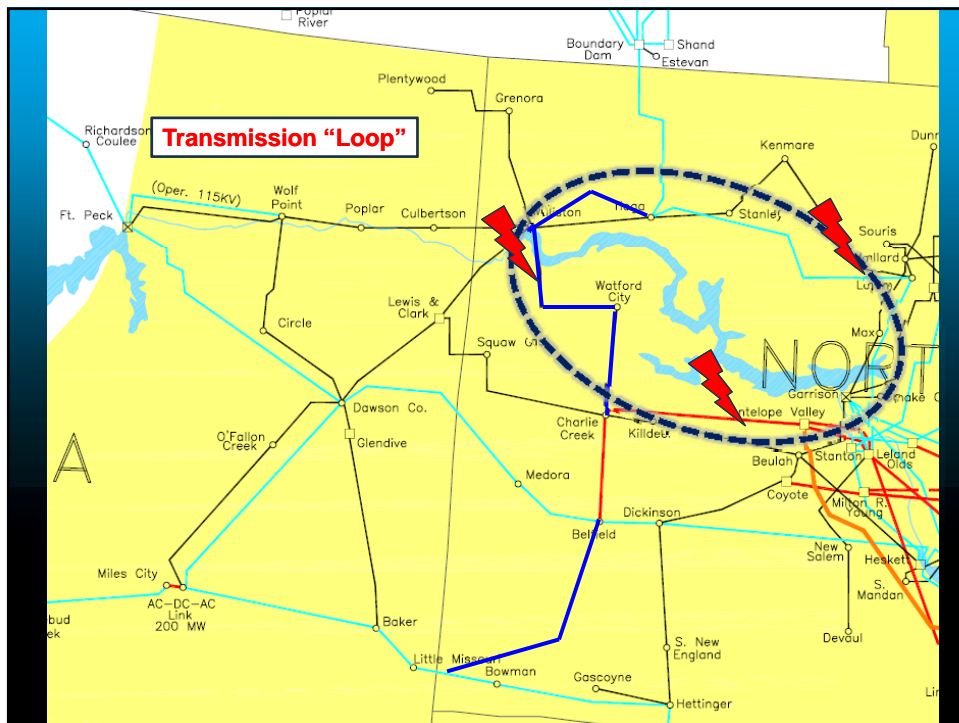
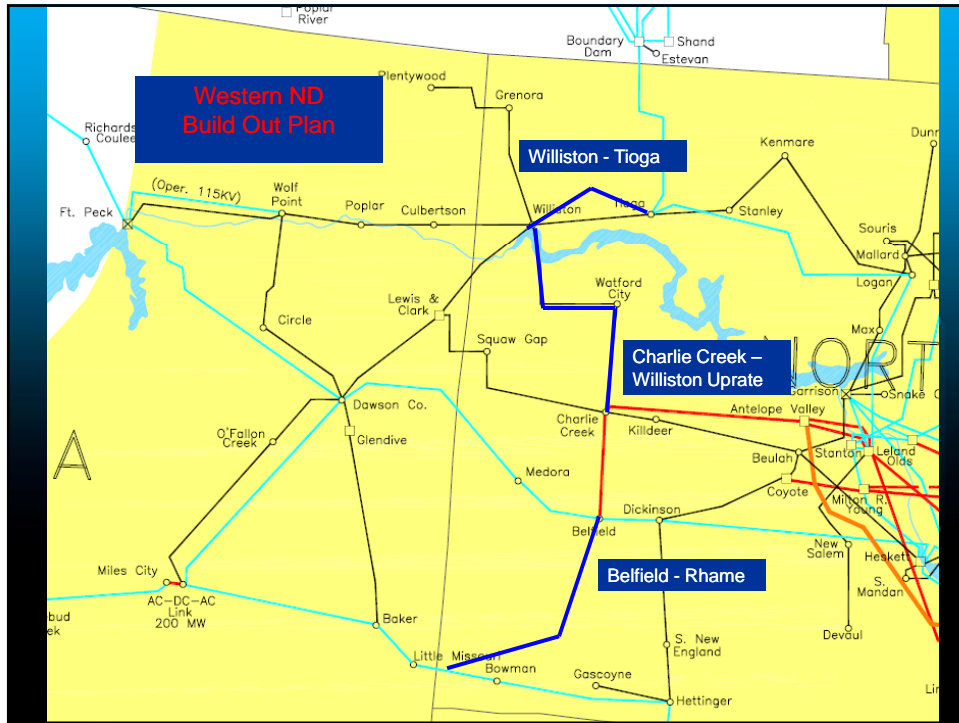
- Allows MISO to use a path that it has no rights for without paying any compensation
- FERC approved MISO's request
- IS partners are exploring options

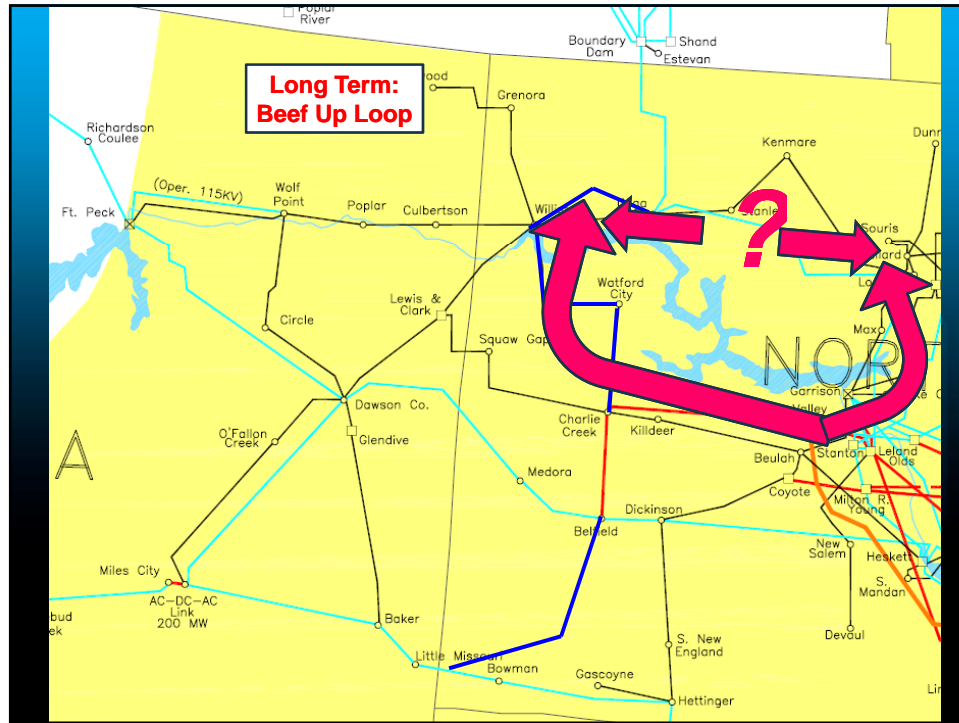


Recent Construction Activities

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Questions?

Pooling Agreement - 1962



Basin / Western / Heartland Integrated System

