

# Southern States Energy Board

Wednesday, May 20, 2015

Commissioner Brian Kalk

North Dakota Public Service Commission

[www.psc.nd.gov](http://www.psc.nd.gov)

## Commissioners



Brian P. Kalk  
Chairman



Randy  
Christmann



Julie Fedorchak



# Overview

- Background
- Opportunity in North Dakota
- Empower North Dakota
- Lignite Coal
- Path Forward!!

# Background

- Born & raised in North Dakota
- U.S. Marine Corps Retired
- Professor at North Dakota State University
- Elected to ND Public Service Commission (2008 & 2014)
- NARUC “Chair of the Clean Coal Cmte – Jon McKinney”

# Where is North Dakota??



## **Regional Map of U.S. & Canada**

This map represents a general outline of Regions.

Puerto Rico U.S.V.I.

Antigua

# Opportunity in North Dakota



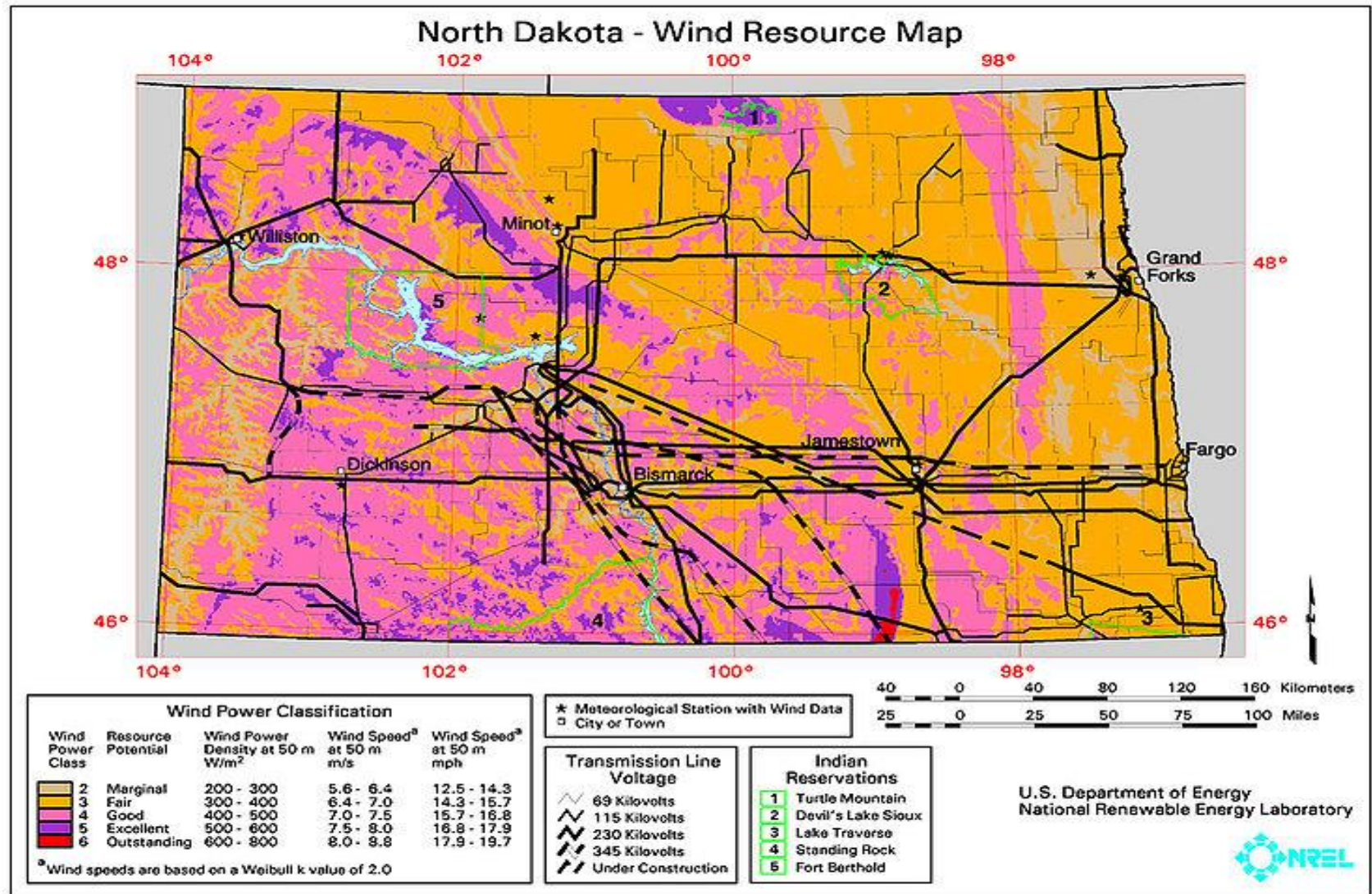
# Energy Situation

- Coal Generation is on the range of 4300 MW
- Hydroelectric Power (Garrison Dam) 510 MW
- Wind Power (PSC approved over 2000 MW) built ... 1250 MW
- Natural Gas (PSC approved over 700 MW) built ... 400 MW
- ND “needs” another 2500-3000 MW in next 20 years.

# Energy Situation

- MISO & SPP are the RTO's in our area.
- 2<sup>nd</sup> largest oil producer in the U.S. (1.2 Million Barrels a day)
- Less than 10% of the oil in North Dakota is being “recovered”
- Natural Gas processing plants (by product of the oil wells)
- CO2 has been used for EOR in our region for 30 years.
- Several companies are exploring how to expand CO2 use.

# Wind Potential & Transmission Lines



# Empower ND

- Established by the ND Legislature to bring energy representatives together that would lead to growing state's energy interests. (prior to oil & gas revolution)
- Political Philosophy in North Dakota.

# Coal is important to North Dakota

- Provides for 15,000 direct and indirect jobs; supported by both political parties.
- 2 million people in the upper plains states depend on North Dakota-generated electricity for their low-cost, dependable power
- Fifth largest industry in the state; \$100 million annually paid in state taxes



# *Technical*

- **Composition of lignite versus PRB subbituminous**
  - **Higher ash, higher moisture, lower BTU**
  - **Potential solution: DryFining™**



# ***Technical***

- Lack of export potential**
  - Mine-mouth ND power plants**
  - Exception is Spiritwood Station (beneficiated coal)**
  - No ND lignite is sold outside state boundaries**

# ***Technical***

- Lignite is volatile fuel source**
  - Best suited for gasification**
  - Gasification is pathway to polygeneration**
    - Syngas, liquid fuels, chemicals, hydrogen**
  - Allam Cycle uses supercritical CO<sub>2</sub>; higher efficiency; near zero emissions**

# ***Technical***

- ND has potential for EOR**
  - Geology is ideal for enhanced oil recovery**
  - Coal reserves are near existing oil producing basins**
  - Existing CO2 pipeline infrastructure**

# *Regulatory*

- **Clean Power Plan for Existing Plants**
  - **EPA is attempting to establish national energy policy with unrealistic timelines**
  - **Three of four building blocks in CPP are ‘outside the fence’ and beyond EPA jurisdiction.... Litigation.....litigation.....**

# *Regulatory*

## – Waters of the USA

- Like CPP, CWA rule would increase EPA's oversight of waters beyond previous 'navigable waters'
- ND Congressional Delegation opposed to expansion

# *Regulatory*

## – Federal coal leases

- Nearly impossible to secure federal coal leases
- Solution is increasingly eliminating federal leases from mining plans; private leases are plentiful and often more affordable

# *Environmental*

- **ND Lignite R&D program**
  - **Unique state/industry partnership established in 1980s to provide funding for lignite R&D programs**
  - **Energy & Environmental Research Center provides premier low-rank coal technology expertise**

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# *Environmental*

## – Carbon dioxide

- DOE and EPA differ on timelines for commercially available CO<sub>2</sub> capture technology
- ND lignite industry is fully engaged both domestically and internationally

# Final Thoughts

- We need more baseload power. **(KEMPER II in North Dakota!)**
- Only a small portion of North Dakota oil is being recovered.
- EOR is being used and will be used on a larger scale.
- Policy makers and coal companies can't "give up" the fight.
- Coal is a strategic resource that must be used, if we are ever going to truly have energy security.

# Questions & Thank You!

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**701-328-2400**

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