



# Interim Taxation Committee

Dale Niezwaag

Sr. Legislative Rep.

# DGC CO2 Capture & Transportation





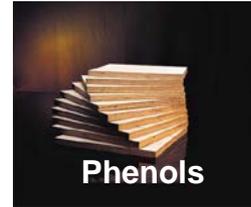
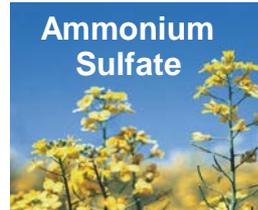
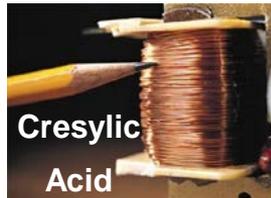
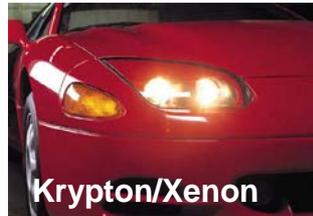
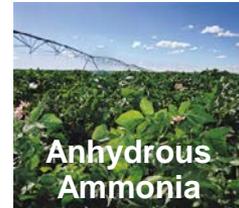
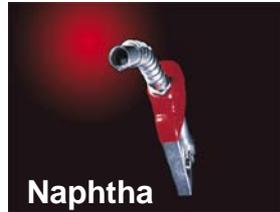
**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy Cooperative

# DGC's Great Plains Synfuels Plant A Unique Facility

- **Only commercial coal gasification facility producing synthetic natural gas**
- **Liquid chemicals production**
- **Fertilizer production**
- **CO<sub>2</sub> capture & transportation**



# Products



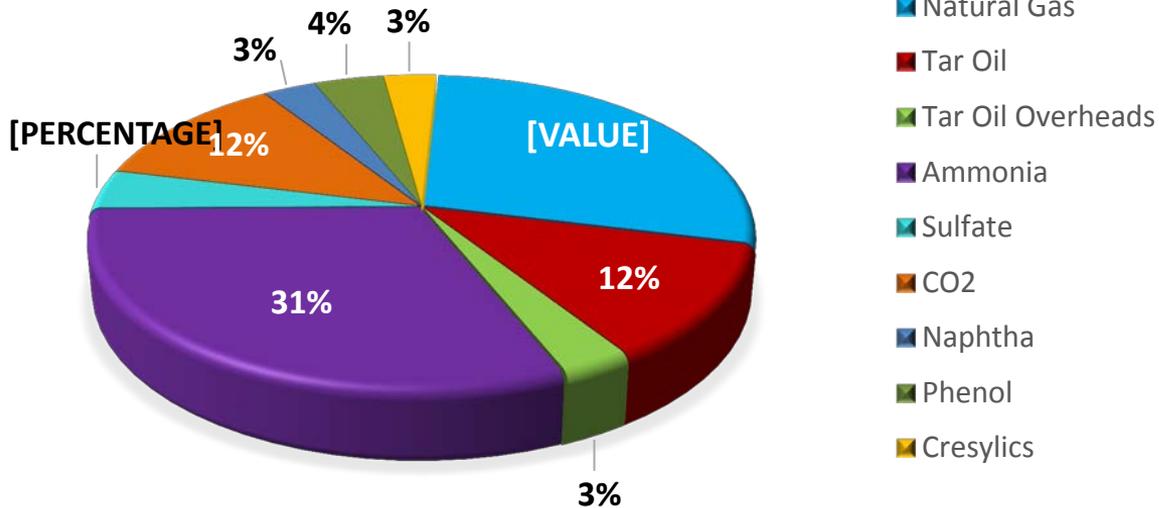
# Great Plains Synfuels Plant Today

- Work Force: about 750 people
- Coal Usage: about 18,000 tons daily
- Daily Production Capacity: 150 mmscfd SNG, along with many byproducts
- Annual Plant Loading Factor: 90-92%
- Environmentally Compliant
- Reduced CO<sub>2</sub> Emissions by 42% to 54% Since 1999



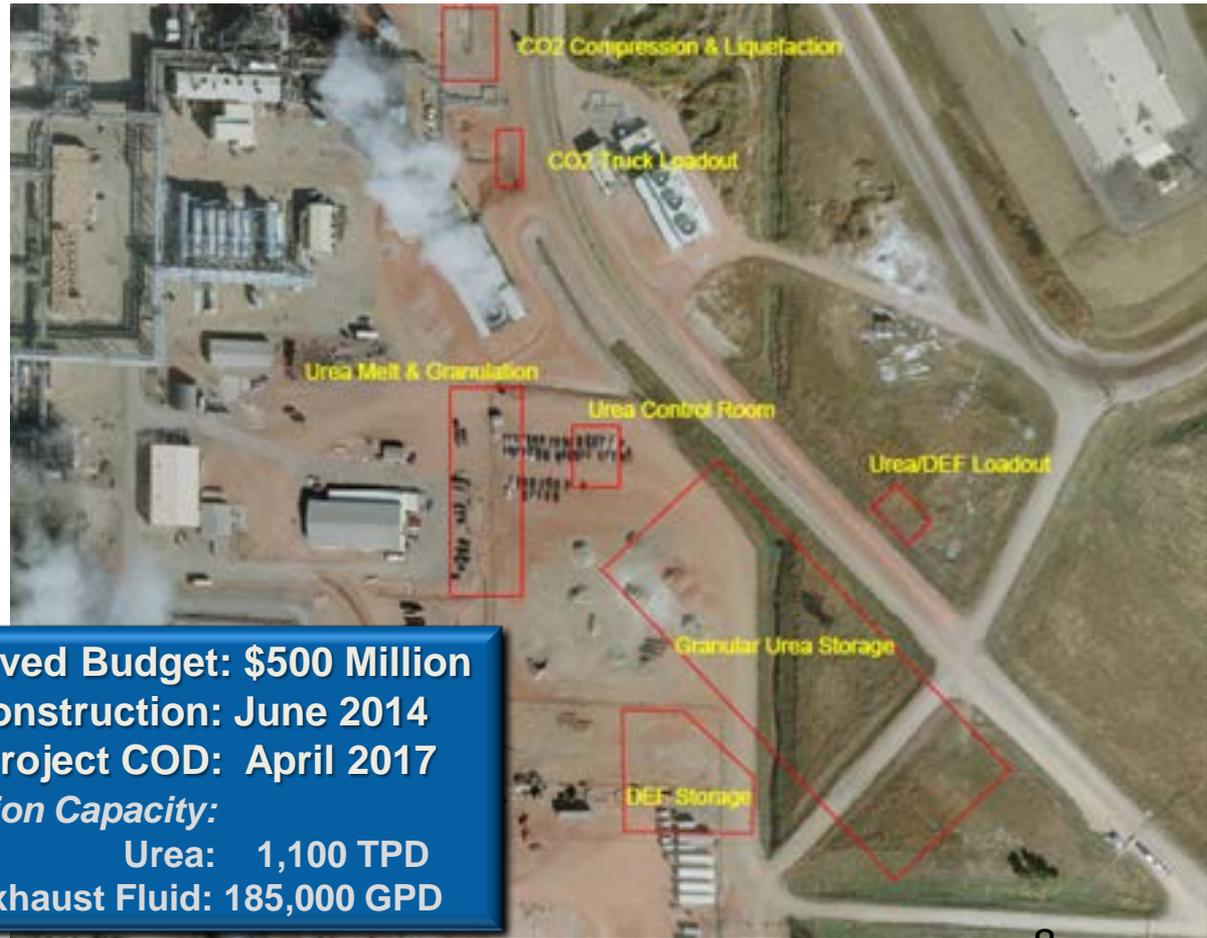
# DGC's Revenue Mix is Changing

## 2016 % OF REVENUES



When Basin Electric purchased Dakota Gasification, only 2% of the revenue was from a product other than natural gas. By 2017, 75% of DGC's revenue is projected to be derived from byproducts.

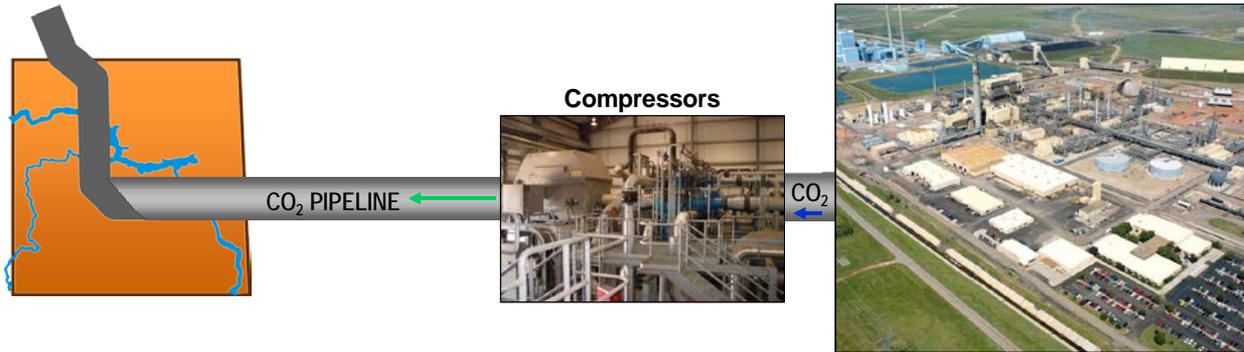
# Urea Project



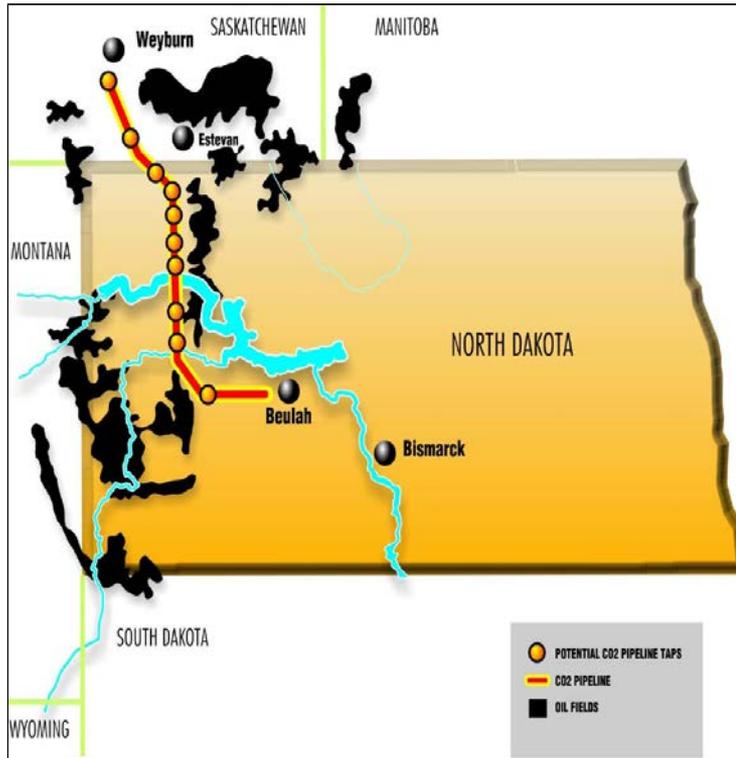
**Approved Budget: \$500 Million**  
**Start of Construction: June 2014**  
**Project COD: April 2017**  
**Production Capacity:**  
**Urea: 1,100 TPD**  
**Diesel Exhaust Fluid: 185,000 GPD**

# CO2 Capture & Transportation

## Part of the World's Largest Anthropogenic Carbon Capture & Sequestration Project



# CO<sub>2</sub> Pipeline



- 205 miles
- 14" & 12" carbon steel pipe
- Strategically routed through Williston Basin oil fields

# DGC CO<sub>2</sub>

## Capture & Transport

- **BEPC's subsidiary, Dakota Gasification, began capturing & transporting CO<sub>2</sub> in 2000**
- **In February of 2015, DGC delivered its 30 millionth metric ton of CO<sub>2</sub> to Saskatchewan, Canada**
- **DGC captures approximately 3 million tons of CO<sub>2</sub> per year, 7,000-8,000 metric tons per day.**



# ND CO2 Capture Tax Credit

- **2009 Legislative Bill**
- **20% reduction in coal conversion taxes for a 20% reduction in CO2 emissions**
  - An additional 1% tax reduction can be obtained for each additional 2% reduction of CO2.
  - Maximum 50% reduction in Coal Conversion Tax
  - 10 year life

# ND CO2 Capture Incentive

- **DGC Incentive**
  - 2010 \$2.2 million
  - 2011 \$2.5 million
  - 2012 \$2.8 million
  - 2013 \$2.6 million
  - 2014 \$3.0 million
  - 2015 \$1.9 million
- **DGC 2015 Coal Conversion Taxes \$7.5 million**
- **DGC 2015 ND Taxes \$10.3 million**

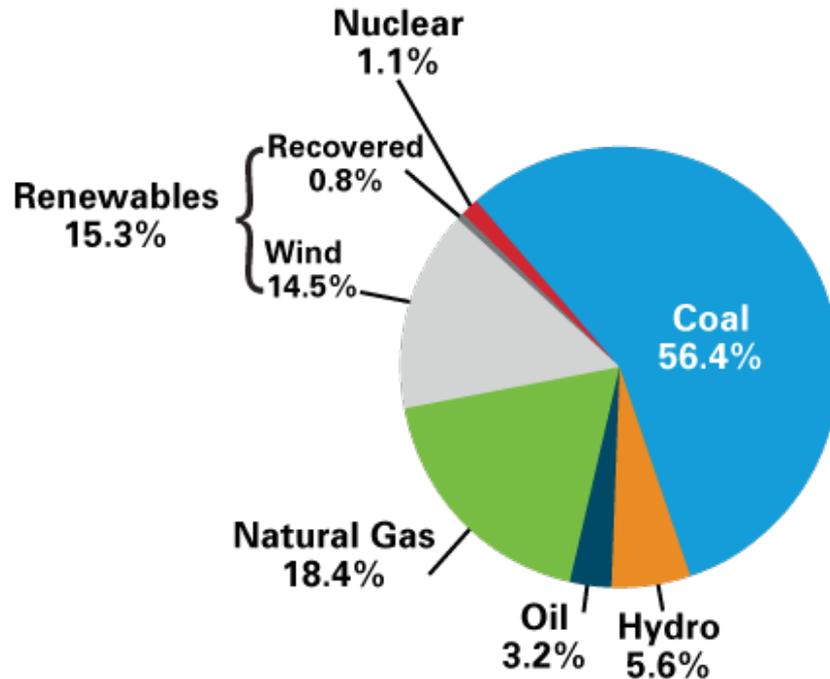


**BASIN ELECTRIC  
POWER COOPERATIVE**

A Touchstone Energy® Cooperative 

# Response to the Clean Power Plan

# 2015 Maximum winter capability in MW



Coal-based	– 3,154.1
Hydro	– 315.7
Oil	– 180.8
Natural gas	– 1,026.5
Wind	– 810.7
Recovered	– 44
Nuclear	– 62.2
<b>TOTAL</b>	<b>=5,594 MW</b>

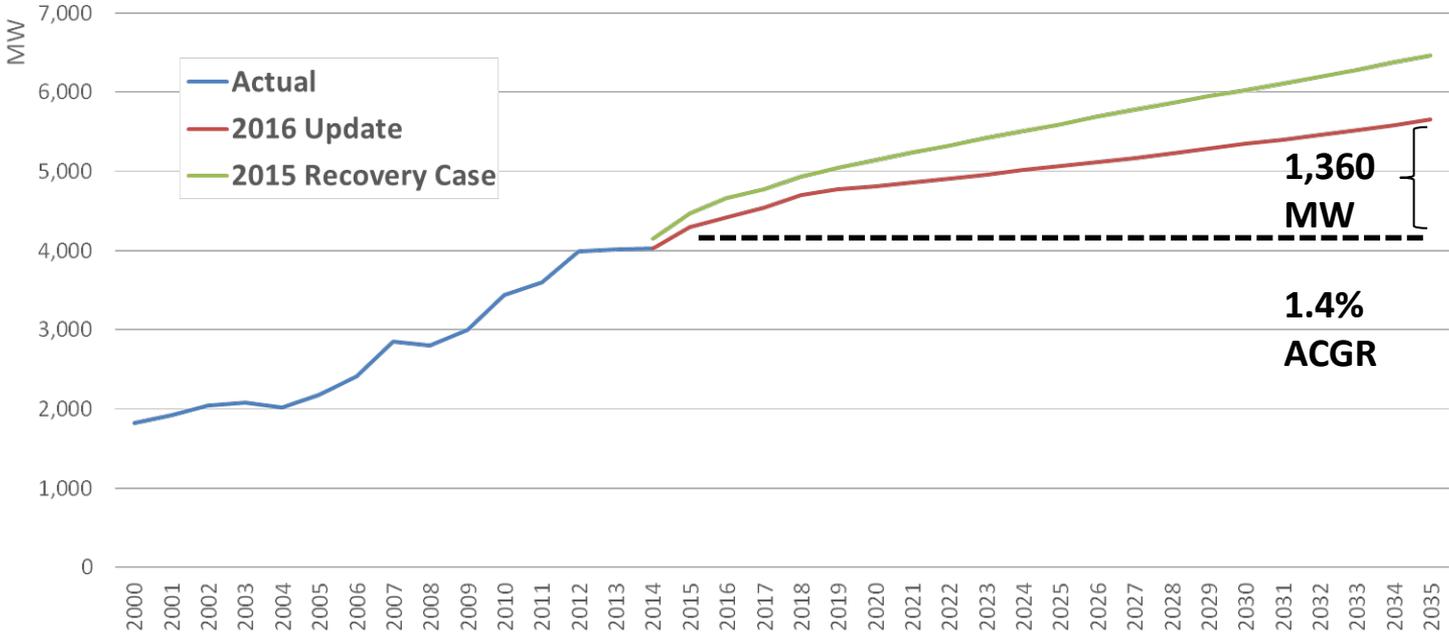
Basin Electric's Resource Portfolio (above) consists of generation in megawatts (winter ratings) from owned facilities and purchased power contracts longer than 3 years. The renewables percentage includes wind, recovered energy generation, and flare gas totals.

# Generation by Fuel

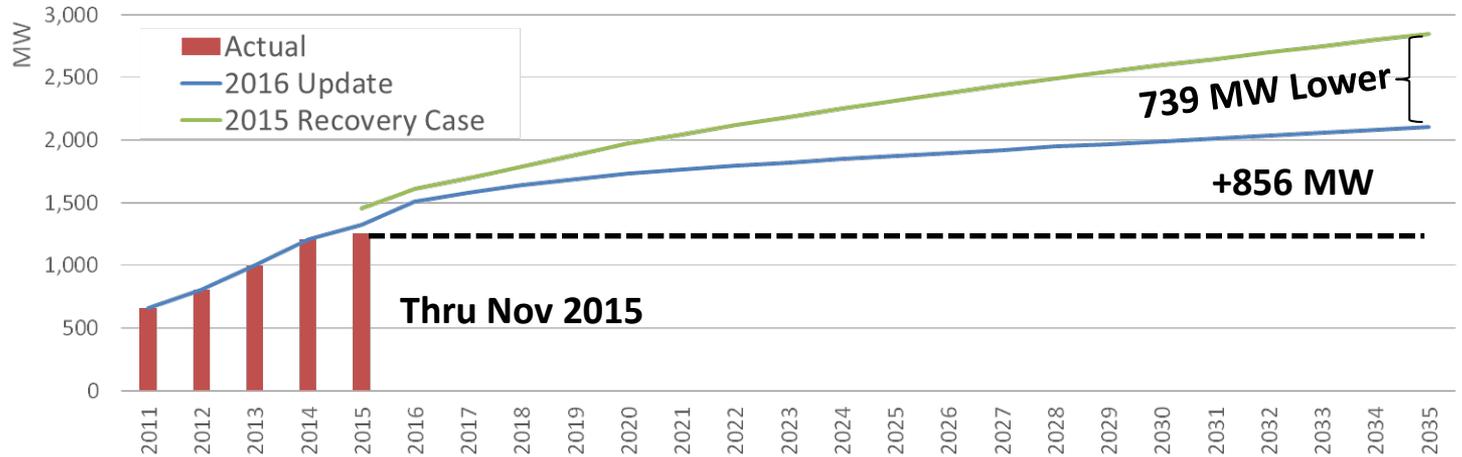
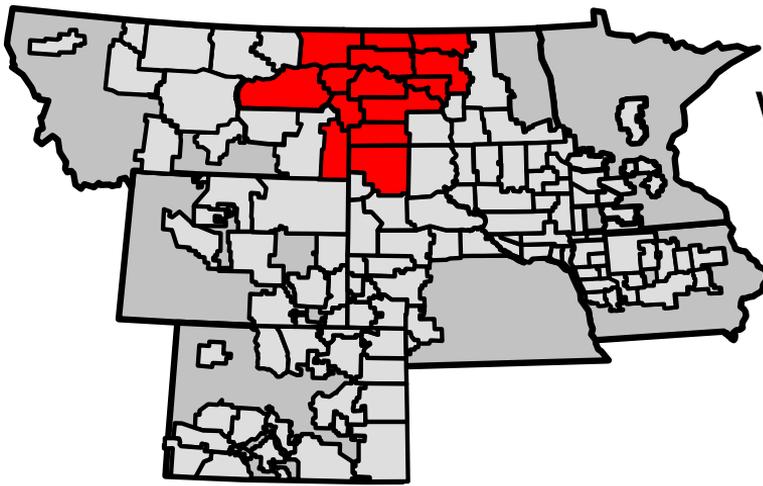
Fuel	2014 Avg.
Coal	80%
Hydro	1%
Natural Gas	3%
Nuclear	2%
Oil, diesel and jet fuel	<1%
Biogas/Flamegas	<1%
Recycled Energy	1%
Wind	<u>12%</u>
	100%



# Total BEPC Load Growth



# Williston Basin Loads



# Our Response to the Clean Power Plan (CPP)



**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy® Cooperative 

# Dealing with the CPP

- Beat the Rule
  - Support Efforts to Delay or Overturn Rule
- Meet the Rule
  - Determine If or How the Rule Can be Met
- Change the Rule
  - Work on Possible Legislative Items to Modify Rule If Legal Actions Fail

# CPP – What we don't know

- Exact rate impacts
- How states will implement their plans
  - (Rate based / Mass based)
- How will state plans treat generation and credits?
- How will trading programs be developed?
- How will this impact infrastructure & pricing for natural gas and electricity?

# Beat the Rule



**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy® Cooperative 

# Principal Legal Issues

- EPA can't regulate under Section 111 if subject to regulation under Section 112 of the Clean Air Act
- EPA has issued firm performance standards versus issuing a guideline document as required by the Clean Air Act
- EPA only has the authority to regulate a generating facility and can't go "outside-the-fence"

# Other Legal Issues to Consider

- The large change in numbers from proposed to final without the any notice/time to comment
- It was arbitrary and capricious to select 2012 as the cut-off for wind generation to be built.
- It was arbitrary and capricious to give credit for hydro-power generation to some states and not others.

# Current Legal Situation

- **Petition for Reconsideration Filed** - this is an opportunity to comment on EPA's changes from the proposed to final rule (i.e., issues BEPC did not have an opportunity to comment on previously).
- **Motion to stay the rule pending appeal filed** - this is a request for the courts to stop implementation of the rule until there is a final court decision on the merits (legality) of the rule.  
Motion denied by DC Circuit Court on January 21, 2016. Appeal filed with SCOTUS.
- **Merits Briefing** begins the challenge to the legality of the rule and is filed in the D.C. Circuit Court of Appeals (appeal). Oral arguments to begin in the June 2016 term of court.

# Meet the Rule



**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy® Cooperative 

# State Implementation Plan (SIP) Options

- Emission-based Plan Options
  - Rate-based State Plan (Existing Sources have to meet the average rate for that State)
  - Mass-based State Plan (Existing Sources have to stay under the mass-based cap set for that State)
- “State Measures” State Plan
  - Has to meet the mass goal for the State, but can include things such as end-use efficiency and other options
- Does not allow rate-based States to trade with mass-based States

# Issues with a Rate-based Plan

- ND, WY, and MT, standard would require approximately 1MWh of wind or other renewable for every MWh of coal gen.
  - *(2.5 times the net capacity needed at a 40% net-annual-capacity factor)*
- Can only use wind generation that came on-line after January 1, 2013
- Transmission cannot currently handle the nameplate capacity when wind turbines produce at maximum capacity
- Baseload coal cannot chase that amount of wind capacity



# Issues with a Mass-based Plan

- Reduces “allowable” tons of emissions approximately 40% from 2012 “Baseline” CO<sub>2</sub> emissions
- Has “anti-leakage” provisions that requires additional renewable generation for new Natural Gas generation that offsets coal generation.
- Allows each State to allocate the allowances.
  - States that import coal-based power may not allow coal-based exporting States to easily buy allowances from the importing State.



# Model State Plan/Federal Implementation Plan (FIP)

- EPA will choose only one type of plan for the FIP for the whole country (*either rate or mass*).
  - It appears EPA is leaning toward mass, if they do, in effect, EPA will create a de facto federal cap-and-trade program for all States that are FIP'ed or choose a mass-based approach
- A FIP will be implemented if;
  - A state fails to submit a SIP
  - A state submits what EPA considers an inadequate SIP



# SIP Issue Considerations (cont.)

- Consider a SIP that follows CAA Section 111 as it relates to state authority.
- It will be difficult for EPA to defend the implementation of a FIP if the state can show that EPA has not followed the Statute.
  - Especially as it applies to Remaining Useful Life and other factors as laid out in the definition of Standards of Performance.

# Basin Electric Internal Analysis

## Preliminary Analysis

- Consultant
- Internal Analysis

## Long-Term Power Supply Analysis

## Long Term Plan



# Internal CPP Analysis

- Comply with Projected Load needs
- Comply with Clean Power Plan as-is
  - Various rate-based scenarios
  - Various mass-based scenarios
- Alternative CPP analyses?
  - Time needed to meet goals “naturally”
  - No interim period
  - Compliance options/goals similar to proposed rule
  - Other?



# Impact of the Rule



**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy® Cooperative 

# Estimated Impact Assumptions

- Basin Electric alone solution
- Generation construction/shut down only
- No electric transmission or gas pipeline infrastructure additions
- No Credit Trading Program Available

# Initial Assessment

- What a compliance plan for 2022 might look like:
  - 1,350 MWs of new wind capacity in addition to wind already contracted for development.
  - 1,740 MWs of new natural gas fired capacity.
- Effort would be unprecedented in Basin history.
  - Over 500,000 acres of land likely required (vast majority for wind farms).
  - Assuming 100% success; 15 almost simultaneous permitting processes and major projects.
  - Over 1,000 major pieces of equipment; 900 wind turbines alone.
  - Over \$5.0 billion in project costs.

# Change the Rule



**BASIN ELECTRIC  
POWER COOPERATIVE**  
A Touchstone Energy® Cooperative 

# Political Climate

- Federal Situation
  - House will support any pushback on EPA
  - Senate MAY support some pushback on EPA
  - President will veto any anti-EPA or CPP legislation
  - House and Senate currently lack votes to override veto
- Based on the Final Rule there MAY be enough votes to override a Presidential veto

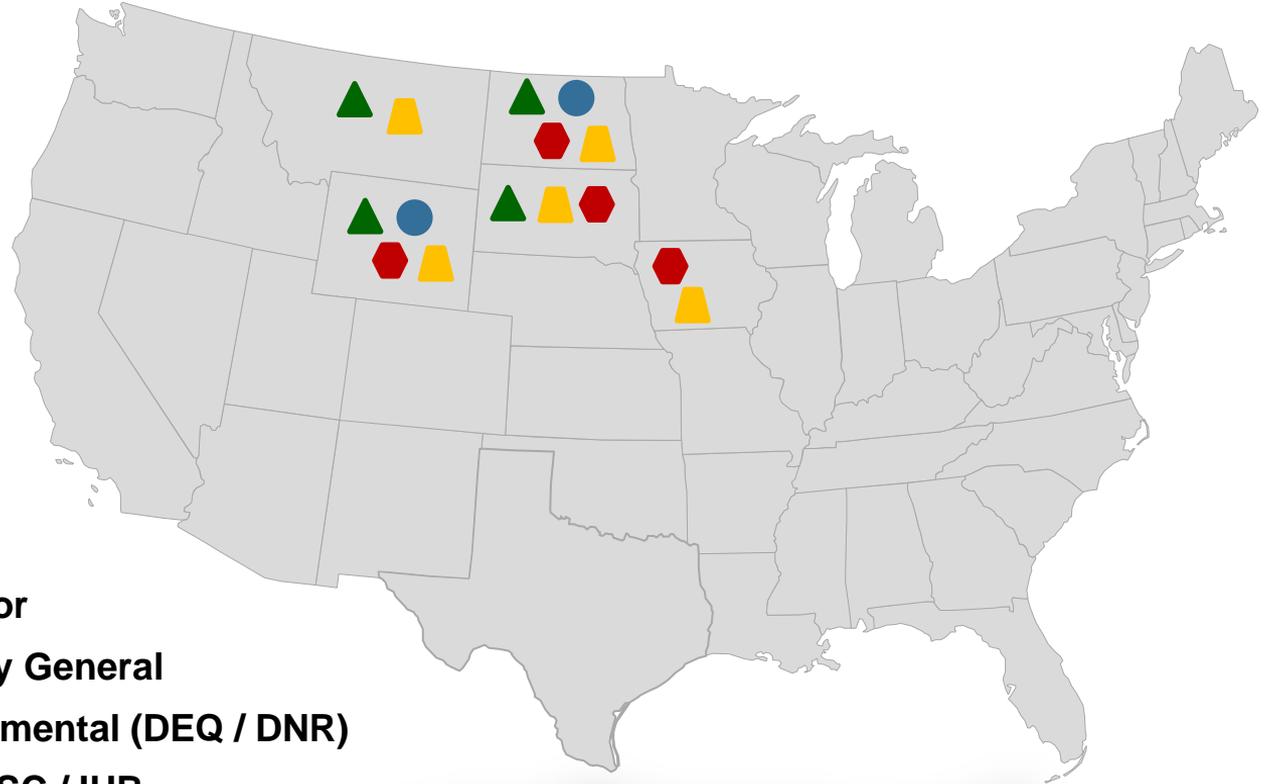
# Presidential Election Impacts

- If a Republican is Elected
  - Could force the EPA to make changes to the CPP
  - A full roll back or elimination of the plan is not likely.
  - The Supreme Court ruled that CO2 is a pollutant and that EPA has the authority to regulate it, so some sort of regulation of CO2 is likely.
  - International treaties and commitments make national policy changes difficult.
  - Public opinion favors doing something to address “climate change.”
- If a Democrat is elected
  - Could build on and expand the CPP
  - Could support some reasonable fixes to the CPP

# Potential Legislative Fixes to Make the CPP More Achievable

- Any renewable energy built since 2005 should qualify toward compliance of the rule.
- The interim goals should be eliminated.
  - The 2022 goal is 65%-75% of the final 2030 goal for Basin States

# CPP Briefings



- ▲ Governor
- Attorney General
- ▲ Environmental (DEQ / DNR)
- ⬡ PUC / PSC / IUB

# Issues States Should Consider Regarding a SIP

- Do necessary activities to obtain two-year extension for SIP submittal
- Delay a decision on Rate vs Mass
- Consider the availability and price uncertainty of Emission Reduction Credits and allowances.
- Allow for the remaining useful life of generation facilities.

