



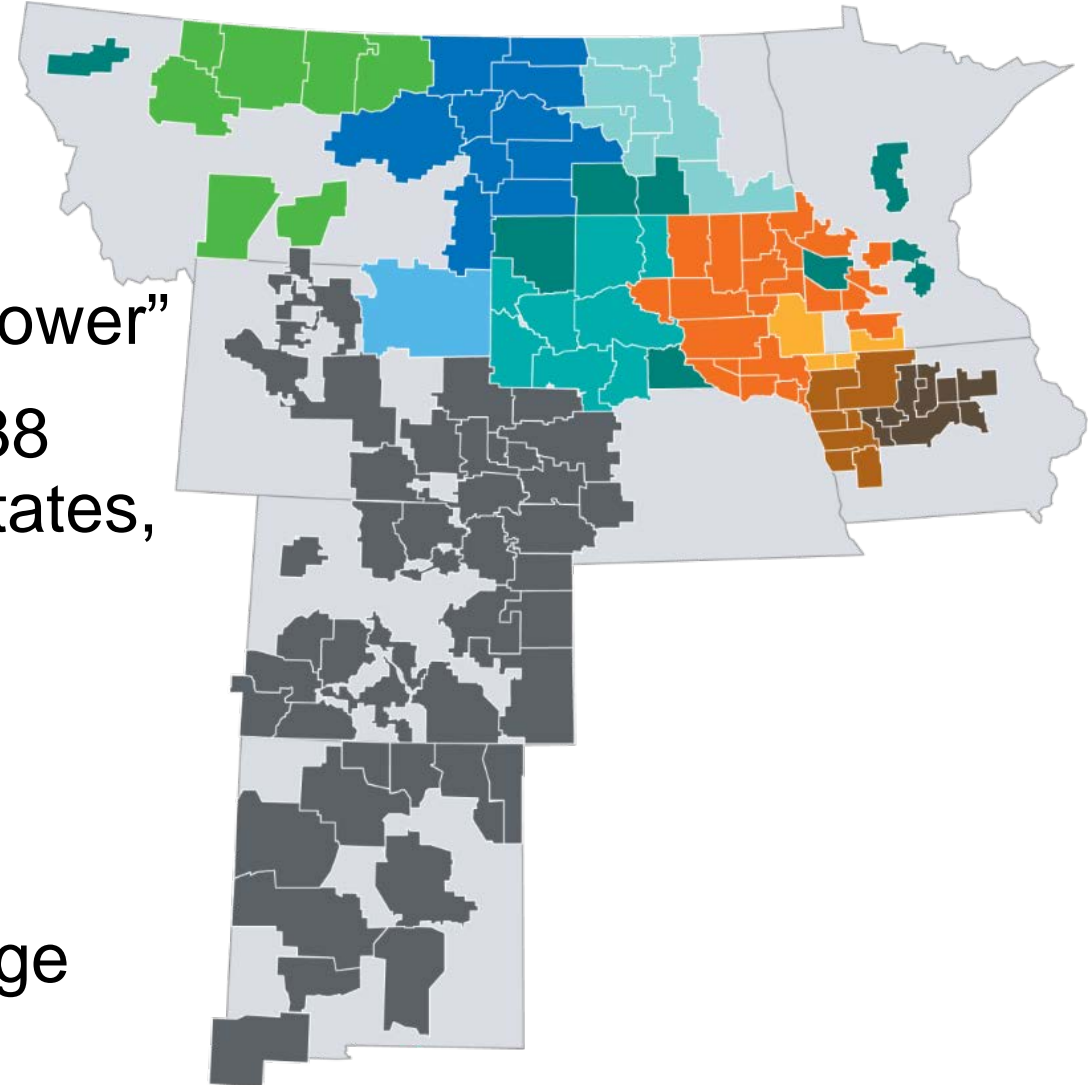
**BASIN ELECTRIC  
POWER COOPERATIVE**

A Touchstone Energy® Cooperative 

## Clean Coal Forum

# Overview

- Generation & transmission cooperative headquartered in Bismarck, ND
- Incorporated in 1961 - “Giant Power”
- Wholesale power supplier to 138 member cooperatives in nine states, who ultimately serve 2.9 million consumers
- 5,594 megawatts of electrical generation in portfolio
- Owns 2,164 miles of high-voltage transmission



# Overview

- Employs about 2,300 people
- 2014: \$2.3 billion in consolidated gross revenue; \$6.4 billion in total assets
- Seven subsidiaries, including
  - Dakota Gasification Company
  - Dakota Coal Company
  - PrairieWinds ND 1
  - PrairieWinds SD 1



**2.9 million member consumers**

**128 distribution  
cooperatives**

**10 distribution  
cooperatives**

**Powder River  
Energy Corporation**

**9 G&T  
cooperatives**

**9 board seats**

**1 board seat**

**1 board seat**

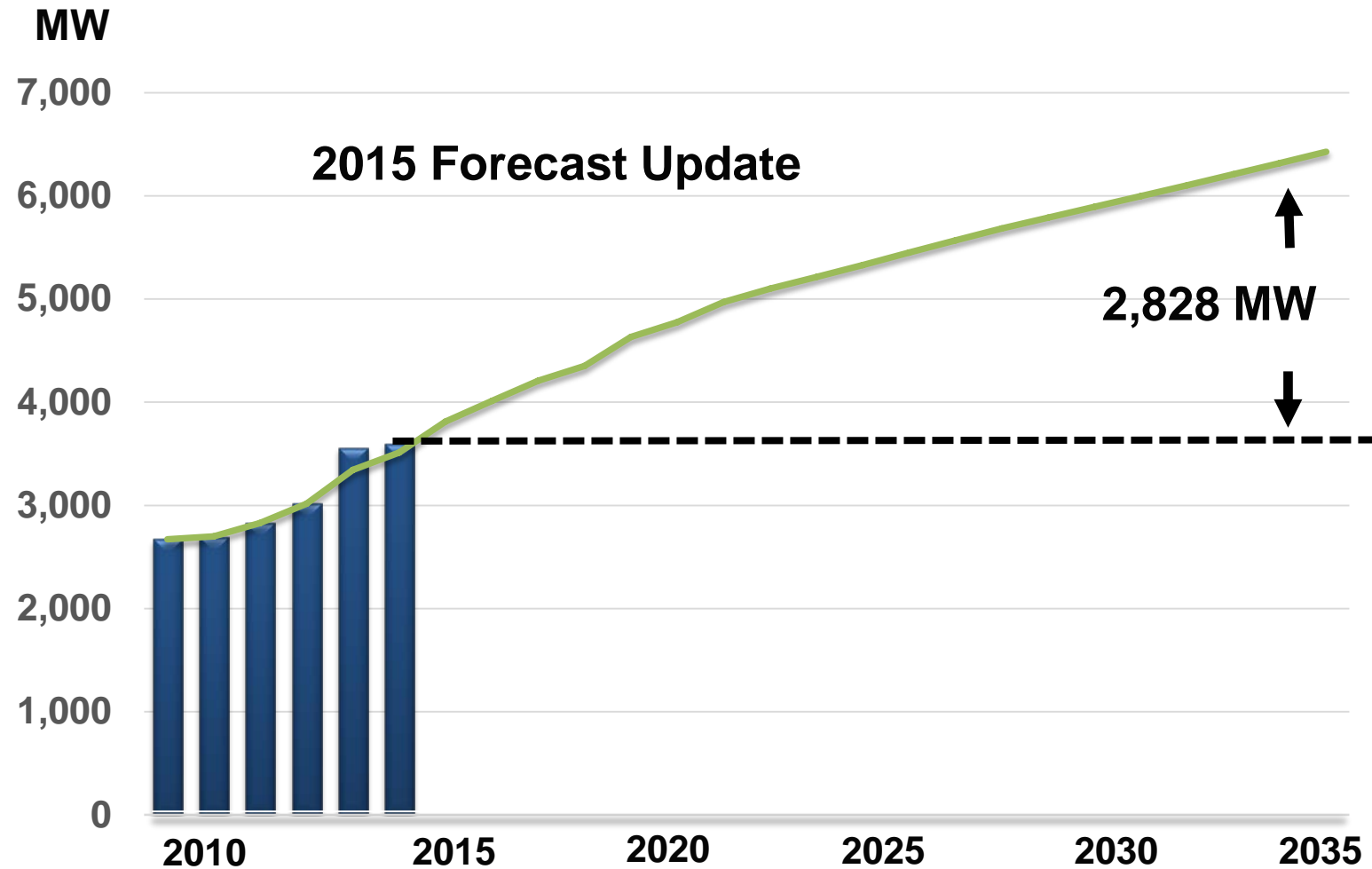


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# Total BEPC Load Growth







# DAKOTA GASIFICATION COMPANY

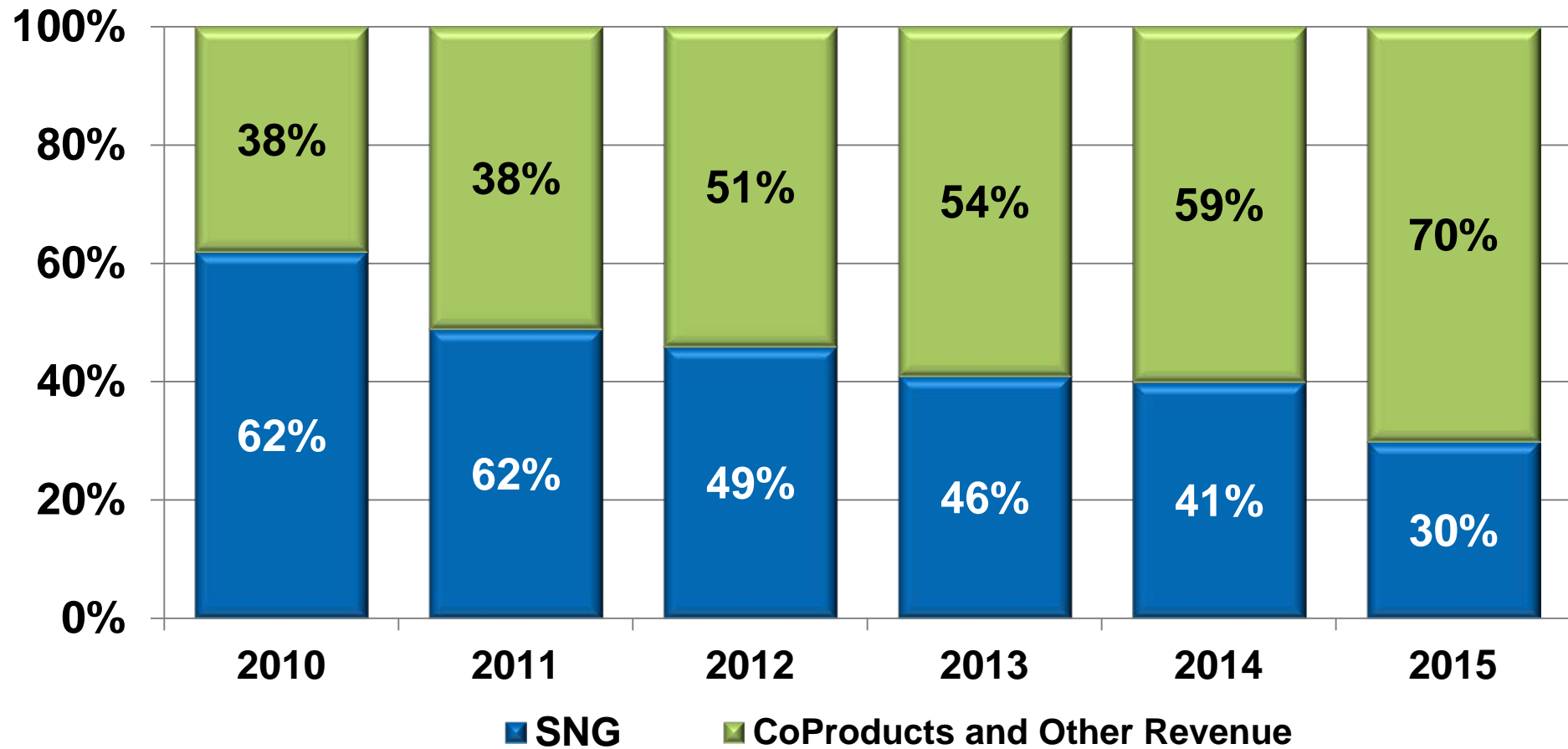
*A BASIN ELECTRIC POWER  
COOPERATIVE SUBSIDIARY*



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# DGC Total Revenue



# Dakota Gasification

## Technology Development

- Dakota Gasification Company  
Great Plains Synfuels Plant,  
Beulah, ND
  - Produces natural gas from lignite coal
  - Array of other products including fertilizers and chemicals
  - Captures CO<sub>2</sub> and sends it via pipeline to Canada for enhanced oil recovery.
  - Tar Oil sold into the fuel blending market
  - Targeting Urea plant commercial operation in the spring of 2017



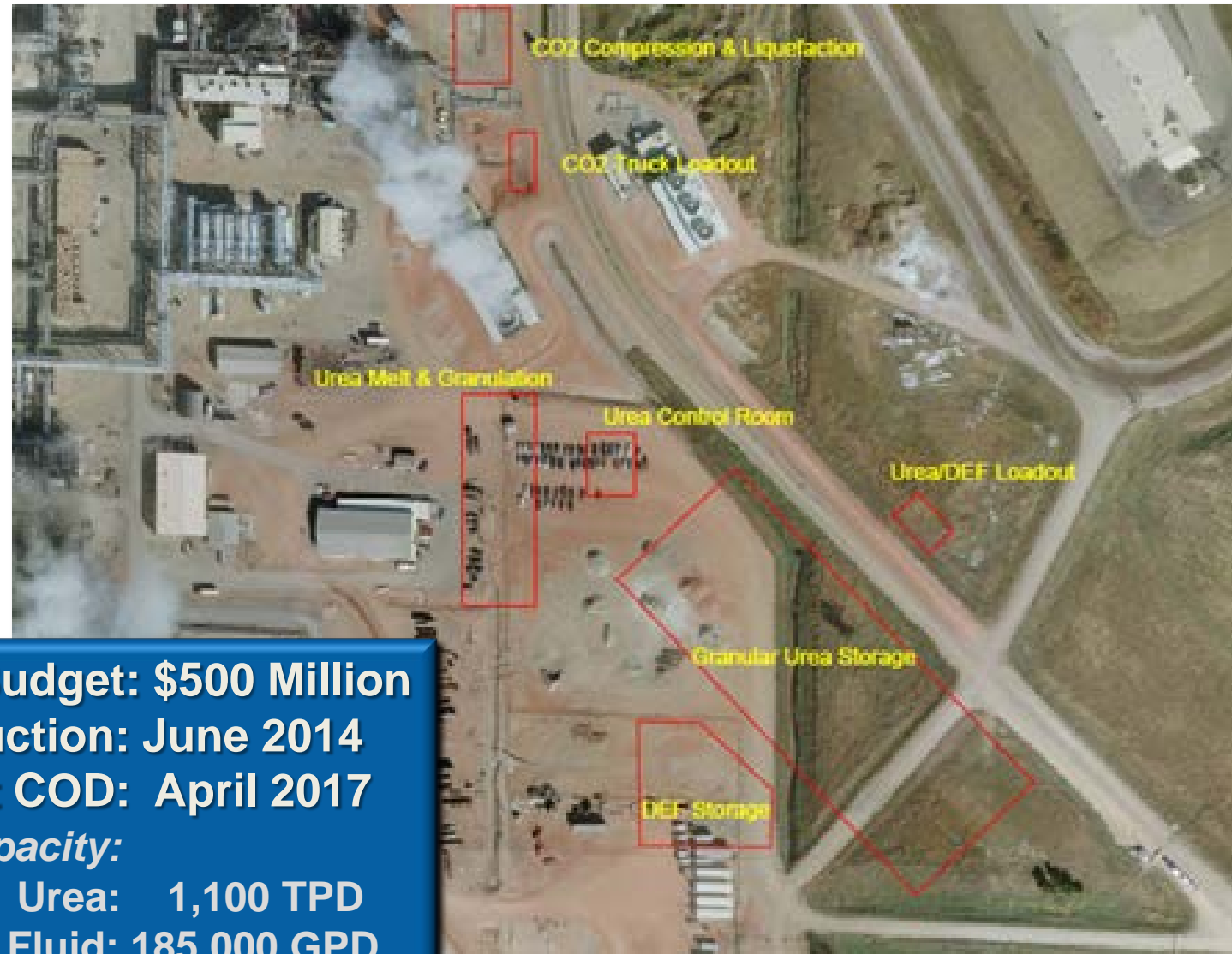


# Carbon Capture

- Great Plains Synfuels Plant has sequestered more than 30 million tons of CO<sub>2</sub> since 2000
- “This facility is about the innovation in the United States. This facility is about what we can do when we work together.” *EPA Administrator Gina McCarthy (March 2014)*



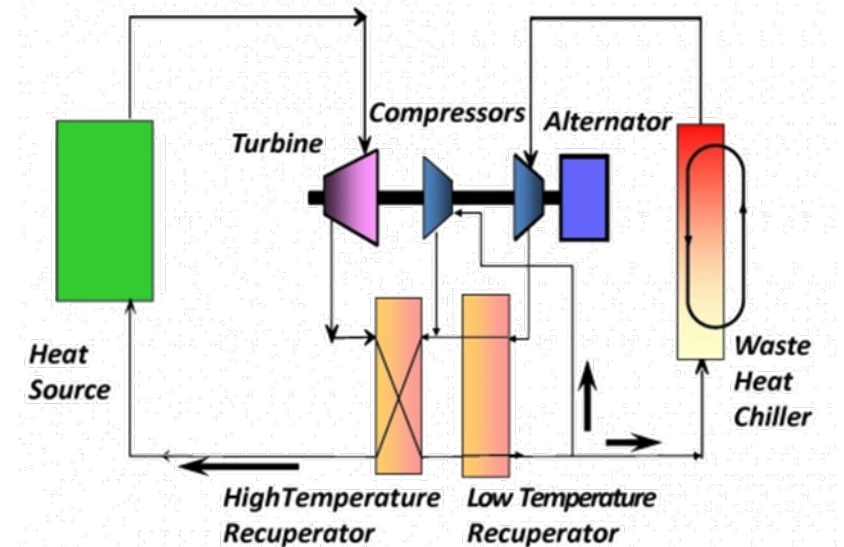
# Urea Project



**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**

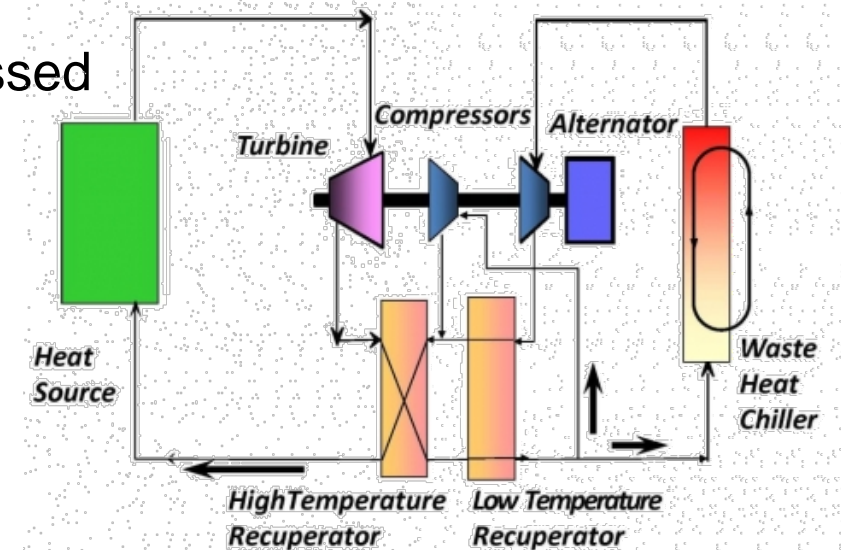
# Further Efforts - Allam Cycle

- Allam Cycle - Basin Electric partnering toward an innovative coal fueled, high efficiency project to aid in EOR and carbon sequestration efforts
  - Salable byproduct of carbon dioxide due to high pressure, high quality



# Allam Cycle

- Allam Cycle has focused on building support for a coal fueled FEED Study that would lead to a ND demonstration site.
- Supercritical CO<sub>2</sub> Power Cycle (*aka Allam Cycle*)
  - Developed by Rodney Allam; Senior partner 8 Rivers Capital and NET Power
- Closed-loop, High Pressure Brayton Cycle
  - Working fluid is CO<sub>2</sub>. Carbon dioxide is compressed and remains gaseous at lower temperature.
- Salable byproduct of carbon dioxide due to high pressure, high quality





# AVS CO<sub>2</sub> Project

## Previous post-combustion effort

- CO<sub>2</sub> Capture System
- \$5.4 million FEED Study
- Clean Coal Power Initiative Award of \$100 million
- \$435.4 total project cost
- Placed on hold



# Developing Legislative Framework

## North Dakota CO<sub>2</sub> legislation

- Statutory framework for geologic storage of carbon dioxide
- Pore Space – owned by the surface owner and may not be severed
- Tax incentive for coal conversion facilities that capture carbon dioxide – 20% threshold. Maximum 50% reduction in CO<sub>2</sub>
- Tax incentives for CO<sub>2</sub> used in EOR in North Dakota
- Ongoing studies of use of CO<sub>2</sub> in oil recovery
- Allam Cycle funding



# Questions?