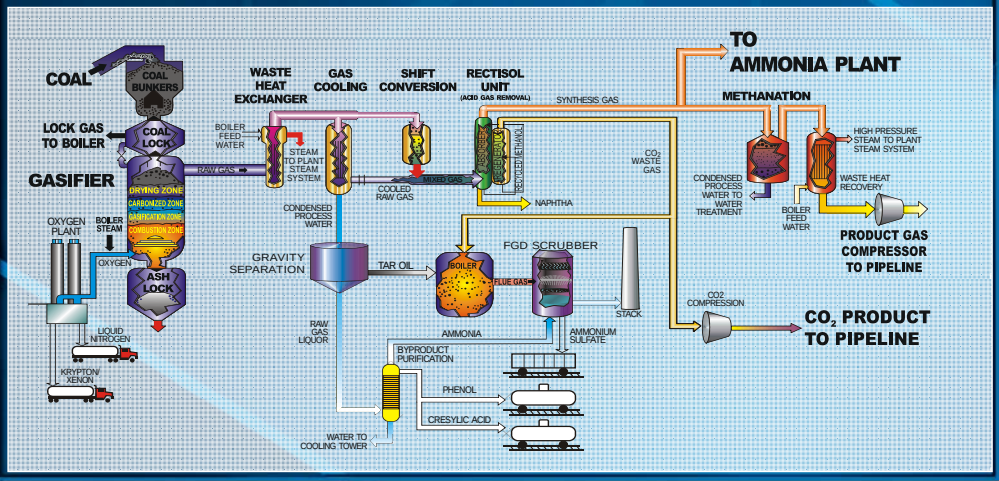
History of the Facility

- Concept started in early 1970s Construction began in 1981
- Production began in 1984
- DOE assumed ownership 1985
- Acquisition by Basin Electric Power Cooperative in 1988

DGC is unique

- Only commercial coal gasification facility producing synthetic natural gas
- Liquids production
- Fertilizer production
- CO_2 capture and sequestering

Great Plains Synfuels Plant Process Flow



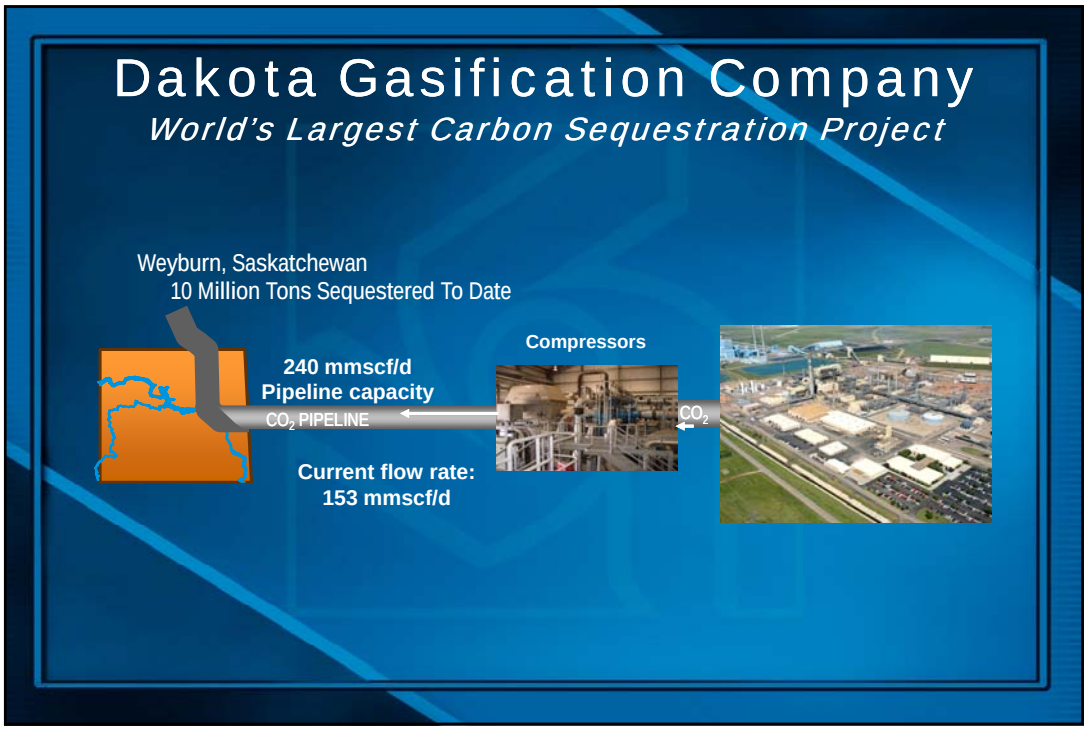
Synfuels Plant Today

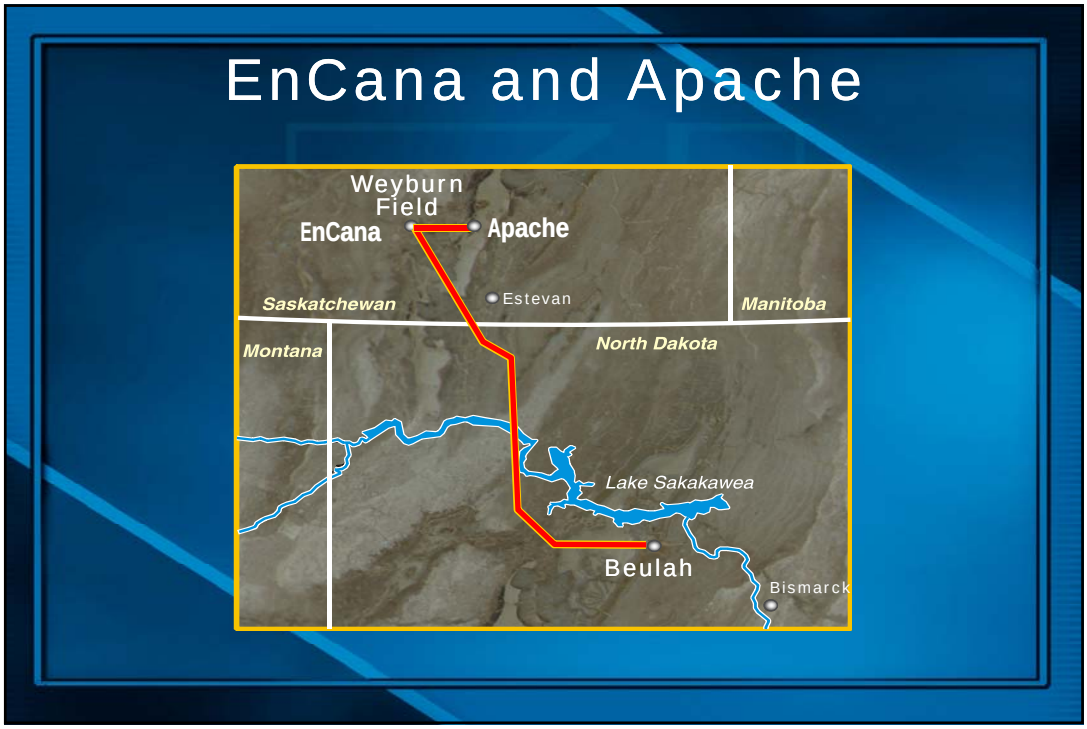
- Work Force: more than 700 people
- Coal Usage: ~ 18,000 tons daily
- Daily Production Capacity: 170 mmscfd SNG, along with many by-products
- Annual Plant Loading Factor: 90-92%
- Environmentally Compliant
- Reduced CO_2 Emissions by: 49%

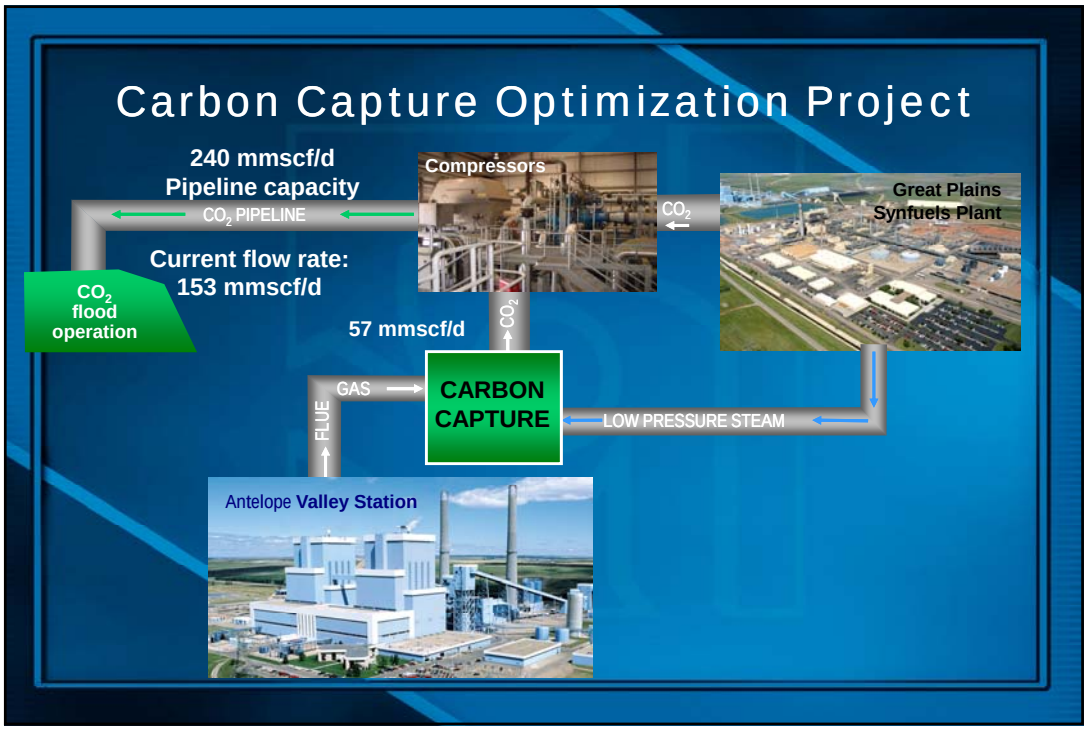
Environmental Controls

- Unique Scrubber – flue gas desulphurization system, removes Sulfur Dioxide by producing a saleable Ammonium Sulfate fertilizer.
- $121 million in Environmental Controls – Meet all Federal and State Air Quality Standards
- $6 million in controlling Fugitive Odors


Byproducts
Naphtha
Krypton/Xenon
Carbon Dioxide
Anhydrous Ammonia
Liquid Nitrogen
Phenols
Natural Gas
Ammonium Sulfate
Cresylic Acid


Dakota Gasification Company
World's Largest Carbon Sequestration Project
Weyburn, Saskatchewan
10 Million Tons Sequestered To Date
240 mmscf/d
Pipeline capacity
CO2 PIPELINE
Compressors
CO2
Current flow rate:
153 mmscf/d


EnCana and Apache
Weyburn Field
EnCana
Apache
Saskatchewan
Estevan
Manitoba
Montana
North Dakota
Lake Sakakawea
Beulah
Bismarck


Carbon Capture Optimization Project
240 mmscf/d
Pipeline capacity
CO2 PIPELINE
Compressors
CO2
Great Plains
Synfuels Plant
Current flow rate:
153 mmscf/d
CO2
flood
operation
57 mmscf/d
CO2
GAS
FLUE
CARBON
CAPTURE
LOW PRESSURE STEAM
Antelope Valley Station

CO_2 Pipeline

- 205 miles
- 14” and 12” carbon steel pipe
- Strategically routed through Williston Basin oil fields

Carbon Capture & Storage

Challenges

- Great risk in being the first to commercialize the newest technology
  - Reliability
  - Cost
  - Station Power for CCS
  - Performance/guarantees

Carbon Capture & Storage

- Opportunities
  - EOR is a driver for our AVS CCS project
  - EOR is a bridge for understanding future sequestration in saline aquifers & unrecoverable coal seams
  - Our industry needs Carbon Capture Technology demonstrated – R & D must continue
  - Policies and regulations must be developed for CCS

Questions?


Great Plains Synfuels Plant
A Stepping Stone to the Future
Great Plains
SYNFUELS
DAKOTA GASIFICATION COMPANY
BASIN ELECTRIC POWER COOPERATIVE
A Touchstone Energy® Cooperative