The Kemper Project IGCC
Project Overview – Richard Esposito
SECARB Stakeholders’ Briefing
• **Plant**: 582MW electric power plant
• **Technology**: Advanced coal-gasification technology, developed in partnership with DOE
• **Fuel**: Mississippi lignite
• **MPC Investment**: $2.4B
• **CO₂ Capture**: 65% equivalent to natural gas
• **In-service**: May 2014
Advanced Technology – What is “IGCC?”

• IGCC stands for “Integrated Gasification Combined Cycle.”

• It’s a combined-cycle power plant and a coal-gasification plant designed specifically to work with each other.

• There are currently only two of these plants in the U.S.
Why IGCC?

- Use coal as fuel for highly efficient combined-cycle plant
- Clean coal technology - less NOx, SO$_2$ and Mercury
- Less CO$_2$ than conventional coal-fired power plants
- Greatest potential for future CO$_2$ capture
The TRIG™ Gasification Process

- TRIG™ - Transport Integrated Gasification
- Product of more than 15 years research
- Developed at the Power Systems Development Facility (PSDF) in Wilsonville, Alabama
- Sponsored by the DOE, Southern Company and KBR
The Kemper Project IGCC

Integrated Gasification Combined Cycle Plant
The Kemper Project IGCC

Kemper County IGCC Project
The Right Mix for Mississippi’s Energy Future.

natural gas + coal + mississippi lignite
The Kemper Project IGCC
Why Lignite?

- Natural Mississippi resource
- Estimated 4 billion mineable tons
- 160 million needed for Kemper over 40-year plant life
- Low commercial value
  - 5K btu/lb
  - 45% moisture
- TRIG™ technology designed for coals like lignite
Mississippi Lignite Mining

- Surface mine
- Multiple seams
- Typically 2 - 10 feet thick
- 100 to 300 feet deep
## Jobs – Construction, Plant & Mine

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Integrated Gasification Combined Cycle

**Gasifier**

- **Sulfuric Acid (H₂SO₄)**
  - ~135,000 tons/year

- **Ammonia (NH₃)**
  - ~22,000 tons/year

- **CO₂ @ 65% capture**
  - ~3,400,000 tons/year
Coal Gasification with CO₂ Capture

Enhanced Oil Recovery

Low Cost Energy

CO₂ Sequestration

Mine-Mouth Lignite

Economic Growth

Oil Production
The Kemper Project IGCC

Schedule

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- **Long Lead Procurement**
- **Bulk Equip. Procurement**
- **Detail Design**
- **Site Work**
- **Piling**
- **Underground**

**Contractors:**
- **GI General Contractor**
- **CC General Contractor**

COD
SU
Questions?