



The Kemper Project IGCC Project Overview – Richard Esposito SECARB Stakeholders' Briefing

The Kemper Project IGCC

- **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



The Kemper Project IGCC

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.

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Why IGCC?

- Use coal as fuel for highly efficient combined-cycle plant
- Clean coal technology - less NO_x, SO₂ and Mercury
- Less CO₂ than conventional coal-fired power plants
- Greatest potential for future CO₂ capture

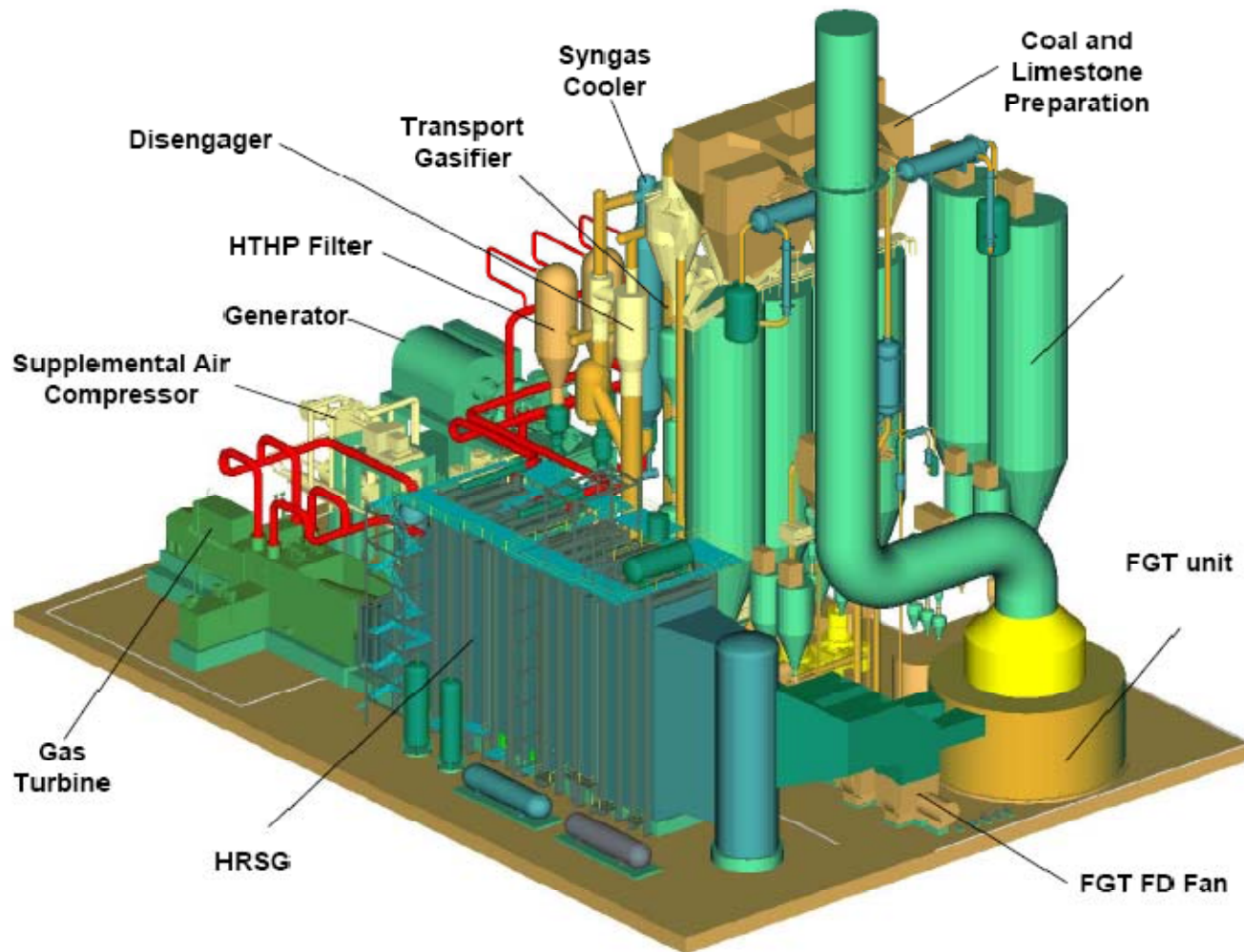
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The TRIG™ Gasification Process

- 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

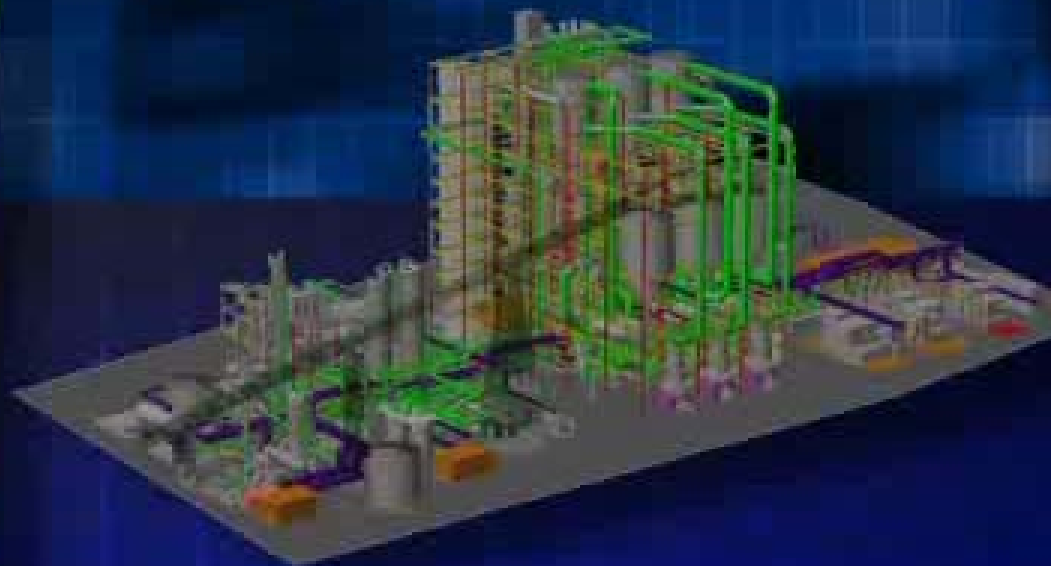
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Integrated Gasification Combined Cycle Plant



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Kemper County IGCC Project



The Right Mix for Mississippi's Energy Future.



natural gas

+



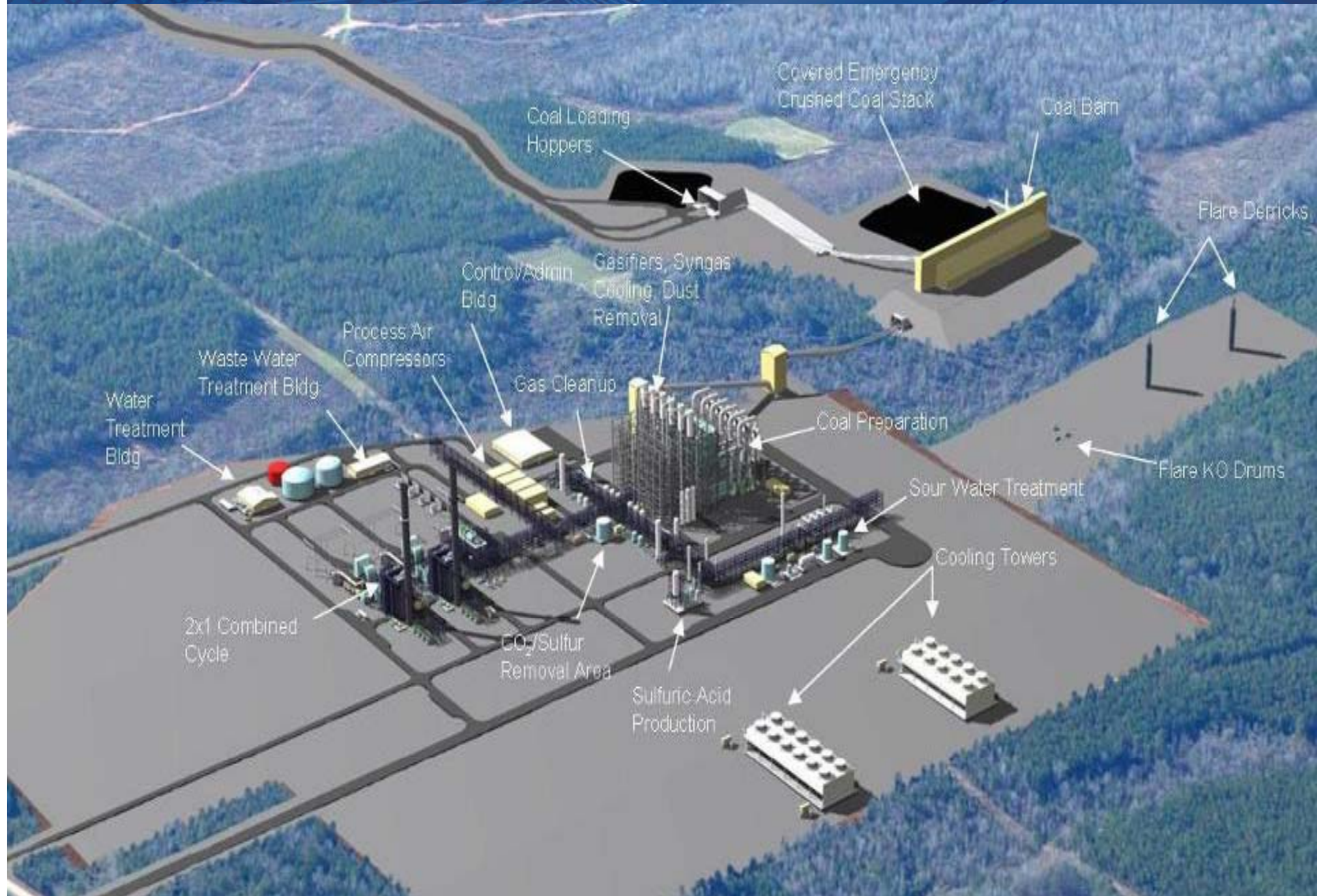
coal

+



mississippi lignite

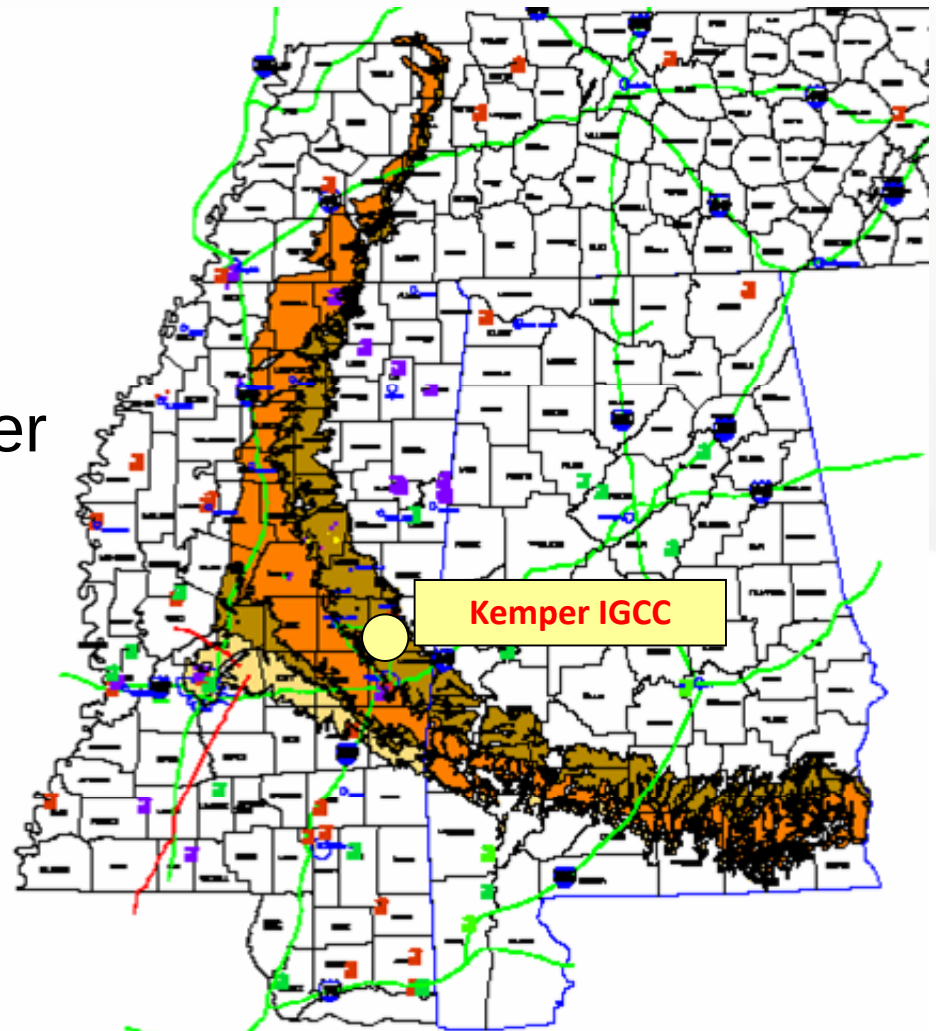
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Why Lignite?

- 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



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Mississippi Lignite Mining

- Surface mine
- Multiple seams
- Typically 2 - 10 feet thick
- 100 to 300 feet deep



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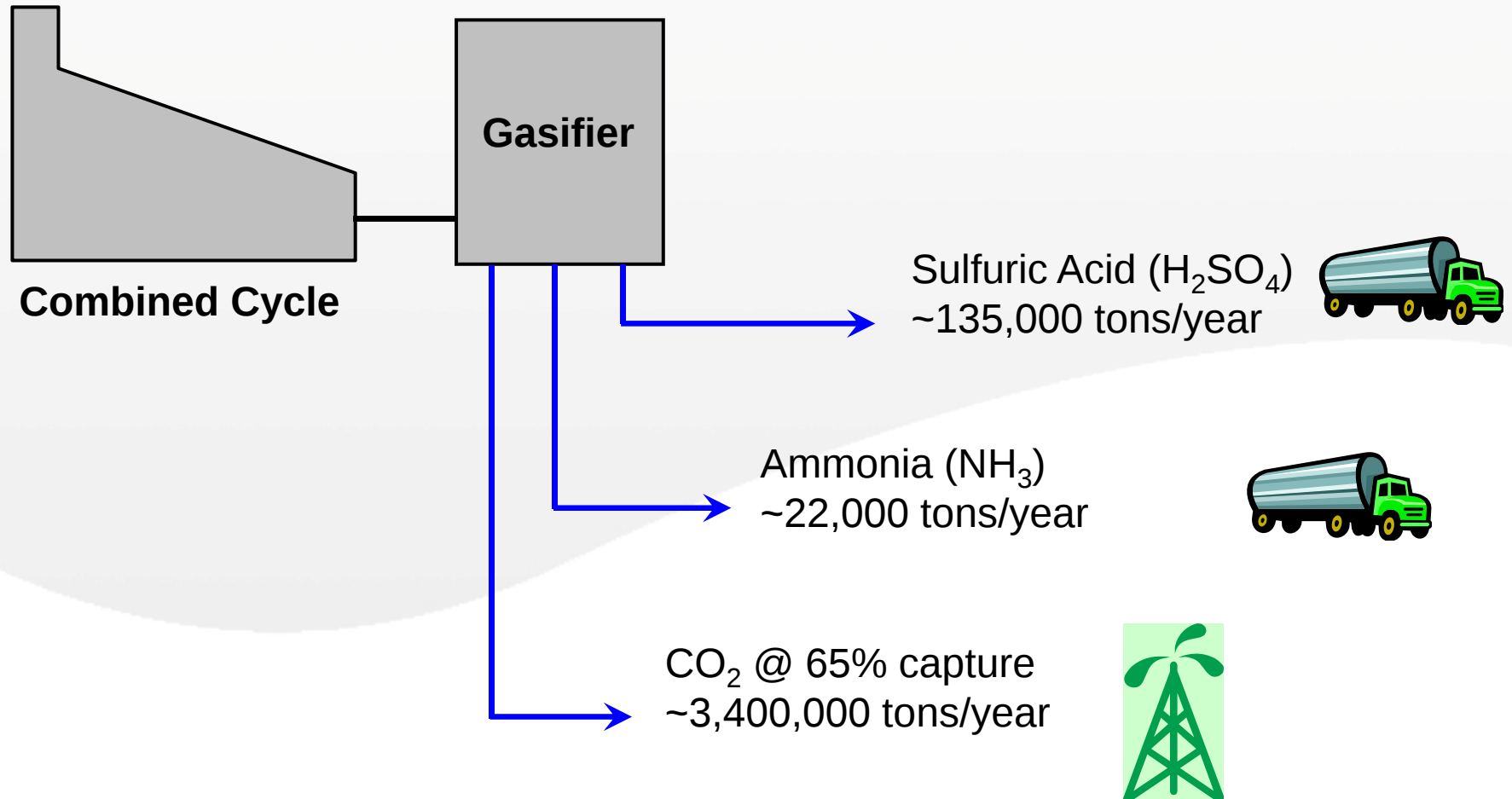
Jobs – Construction, Plant & Mine

Type/Number	Peak	Average/Final
Plant Construction	1,000	500
Mine Construction	240	160
Plant Operation	80	80
Mine Operation	180	180

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IGCC By-Products

Integrated Gasification Combined Cycle



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Coal Gasification with CO₂ Capture

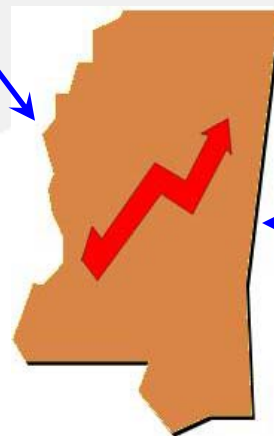


CO₂

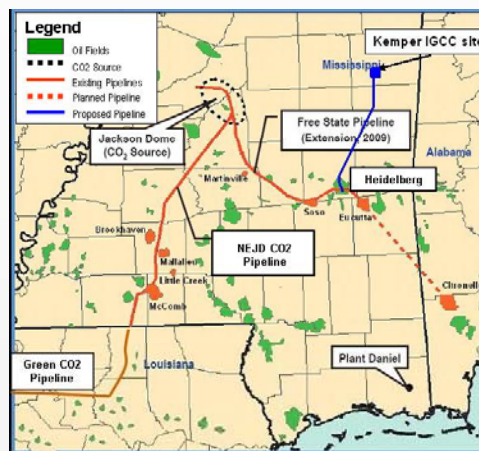
Low Cost
Energy



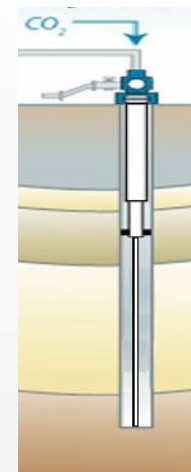
Economic
Growth



Enhanced Oil Recovery



Sequestration

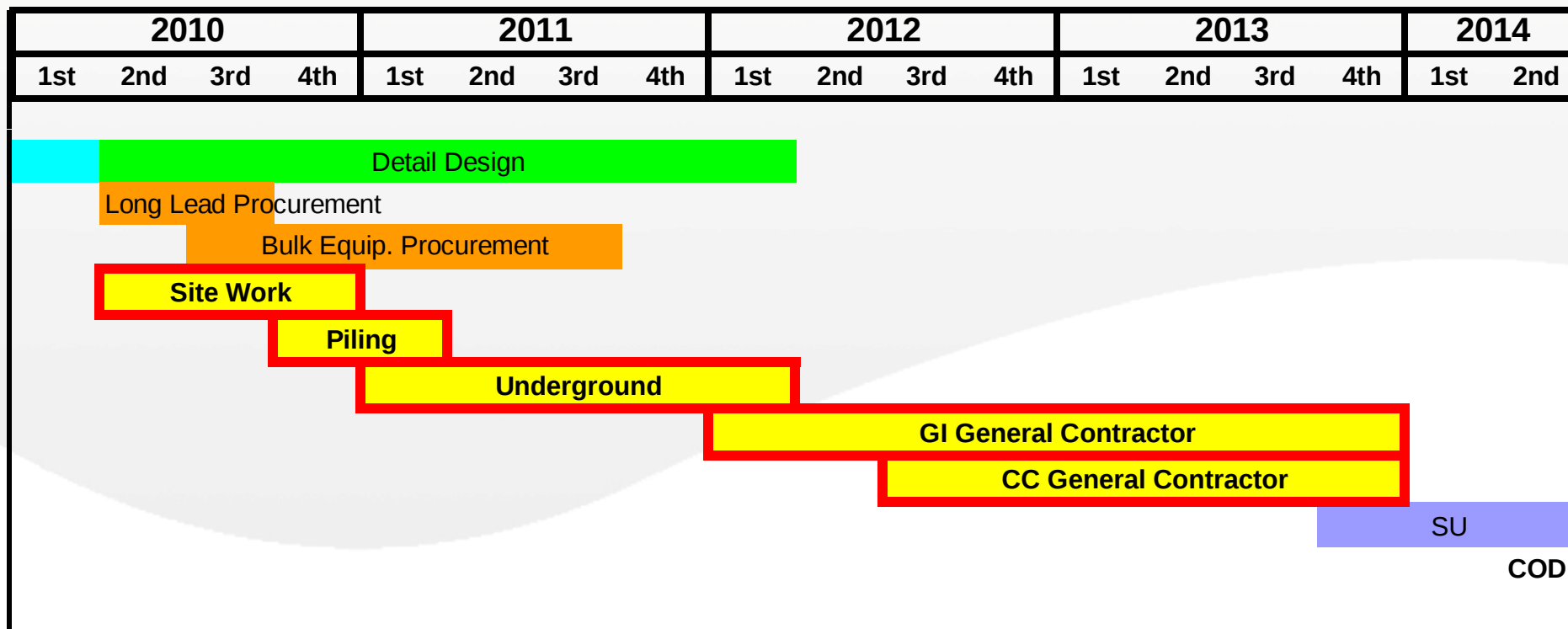


Oil
Production



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Schedule



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Questions?