

# McIlvaine Hot Topic Hour

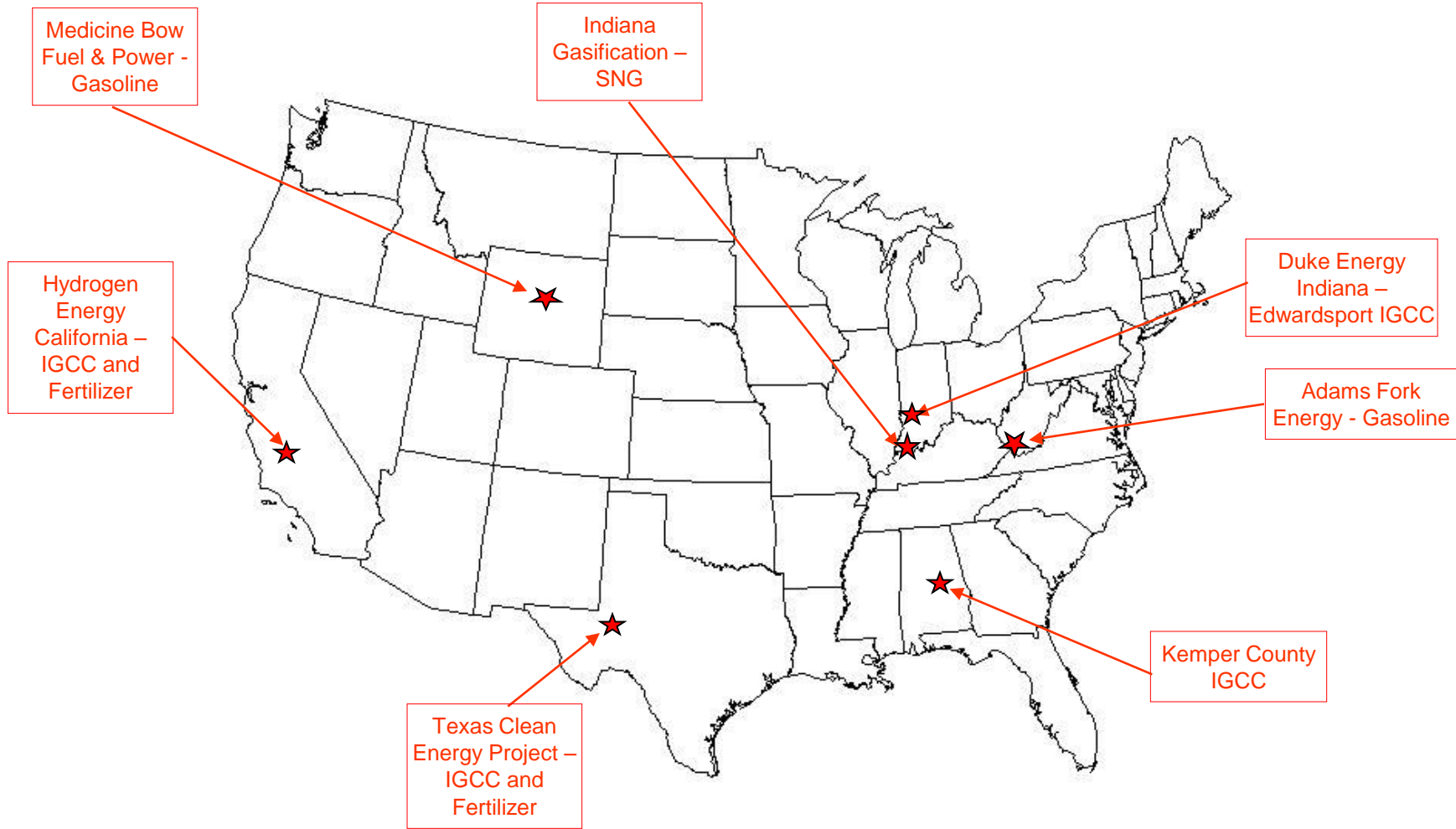
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## Status of Large-scale Gasification and IGCC Projects

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Vice President,  
Gasification Services  
CH2M HILL, Inc.

April 5<sup>1</sup> 2012

# Examples of Current Large-scale Coal Gasification Projects

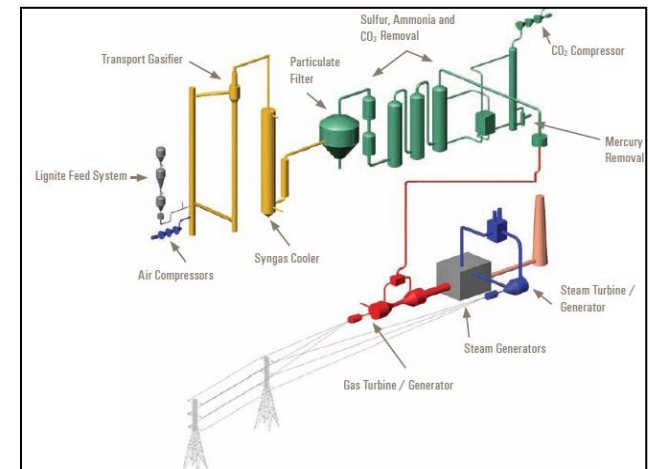


# Duke Energy Indiana Edwardsport IGCC Project

- Edwardsport, IN
- IGCC
- 1.8 million tons/year of Indiana No. 5 coal
- 618 MW net output
- GE Energy gasification and power block
- In construction
- Operation in 2012

# Mississippi Power Company Kemper County IGCC Project

- Liberty, MS
- IGCC
- 582 MW net output
- 5 million tons/year of lignite
- TRIG<sup>TM</sup> transport reactor gasification technology and Siemens power block
- Capture and sale of 65% of CO<sub>2</sub> for Enhanced Oil Recovery (EOR)
- In construction
- Operation in 2014



Source: Southern Company

# Summit Power Group



- Penwell, TX
- Poly-generation: IGCC and urea production
- 2 million tons/year PRB sub-bituminous coal
- 400 MW gross output
- >700,000 tons/year urea fertilizer
- Siemens Fuel Gasification Technology and Siemens combined cycle power block
- >90% CO<sub>2</sub> capture and sale for EOR

# Texas Clean Energy Project

- \$450 million co-funding from U.S. Department of Energy's Clean Coal Power Initiative
- Federal and state tax credits
- Contracts in place for:
  - Power to CPS Energy
  - Urea to major fertilizer company
  - CO<sub>2</sub> into local pipeline for EOR in west Texas
  - EPC for entire facility
    - Linde and SK Engineering & Construction for Chemical Block
    - Siemens for Power Block
  - 15-year O&M services contract for entire facility

# Indiana Gasification

- Rockport, IN
- Coal to SNG
- 3.5<sup>+</sup> million tons/year Illinois Basin coal
- GE Energy gasification technology
- Sale of SNG to Indiana Finance Authority, which will then sell to gas utilities
- CO<sub>2</sub> capture for EOR (needs long-distance pipeline)
- Applied for \$1.875B federal loan guarantee
- Awaiting state legislation for tax benefits

# Hydrogen Energy California

- Bakersfield, CA
- Original project was IGCC only
- Project acquired by SCS Energy in 2011
- Project will now be poly-generation: IGCC and urea fertilizer products
- 400 MW gross output
- 1.8 million tons/year western bituminous coal and/or pet coke

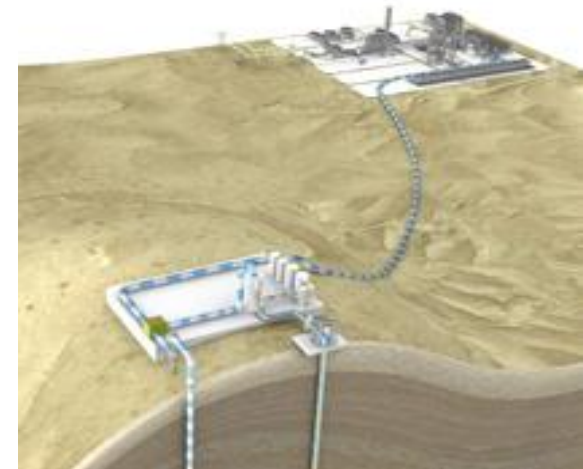


Source: HECA



# Hydrogen Energy California

- Mitsubishi Heavy Industries gasification and power block
- 1.3 million tons/year urea-based fertilizers
- 90% CO<sub>2</sub> capture and use for EOR at nearby Elk Hills oil reserves
- \$408 million co-funding from DOE Clean Coal Power Initiative
- Operation in 2017



Source: HECA

# DKRW Advanced Fuels

## Medicine Bow Fuel & Power

- Medicine Bow, WY
- 1.8 million tons/year of local bituminous coal
- GE Energy gasification technology
  - Davy process to convert syngas to methanol
  - ExxonMobil methanol-to-gasoline technology
- 10,600 barrels/day gasoline
- Capture and sale of CO<sub>2</sub> for EOR
- Operation in December 2015

# U.S. TransCarbon Adams Fork Energy

- Wharncliffe, WV
- Coal to gasoline
- 2.3 million tons/year of local bituminous coal
- Uhde Prenflo gasification technology
- Syngas converted to methanol
- ExxonMobil methanol-to-gasoline process for 18,000 barrels/day of gasoline
- Operation in 2016



Source: U.S. TransCarbon

# Contact Info

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