



Anthropogenic CO₂ Sources

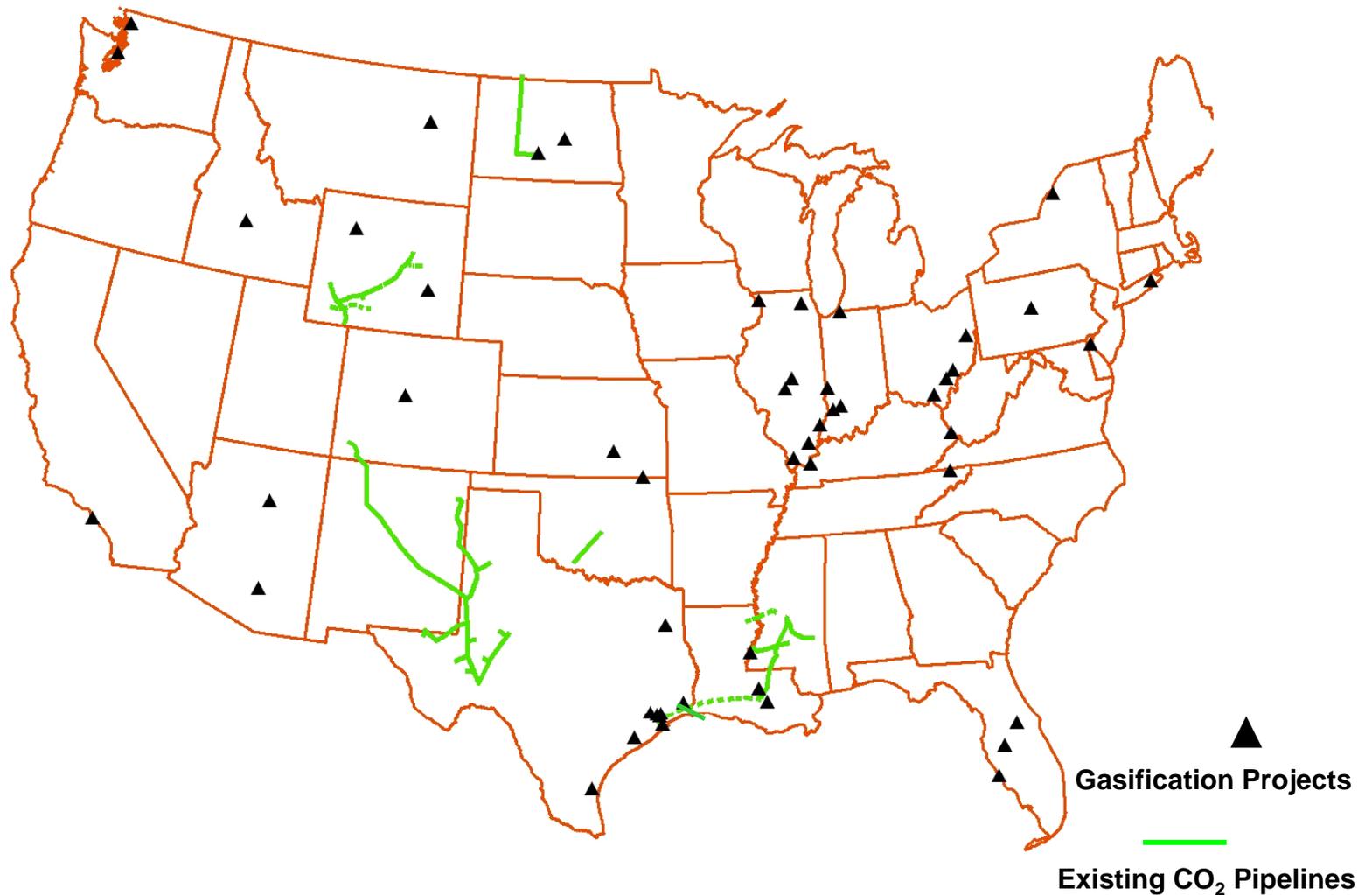
Denbury Resources Inc.

March 2009

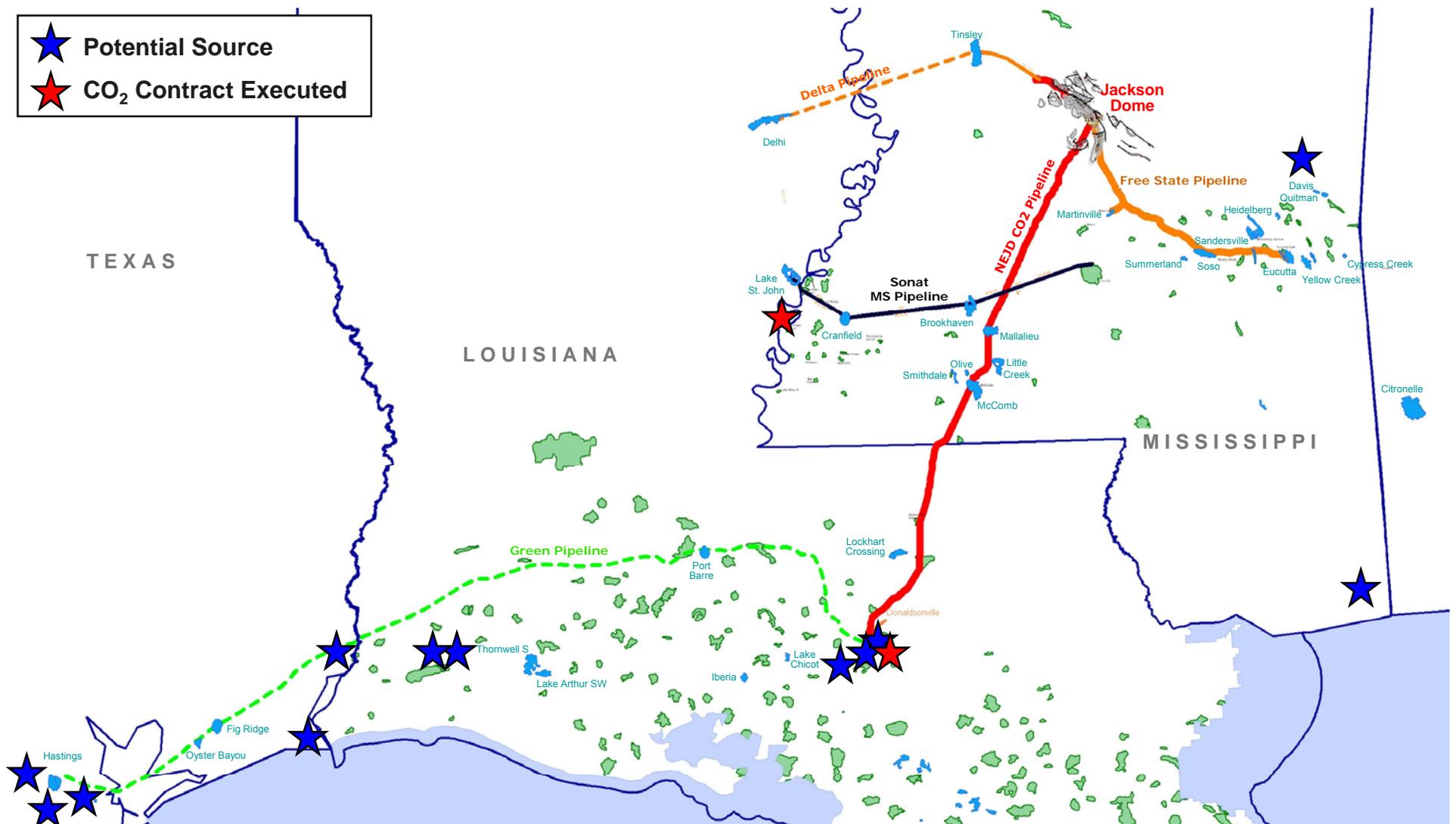
Company Snapshot

- ✿ **Denbury is the largest oil and gas producer in the State of Mississippi**
- ✿ **Denbury currently operates twelve (12) active CO₂ EOR projects in Mississippi, one (1) project in Louisiana and will initiate up to two (2) new additional projects in 2009**
- ✿ **Denbury currently injects approximately 700 MMcf (+/-41,000 tons) of CO₂ per day into the thirteen (13) active projects**
- ✿ **Based on our injection volumes we believe we are the largest injector of additional CO₂ on a daily basis in the U.S.**
- ✿ **Denbury currently operates approximately 440 miles of CO₂ pipelines and is in the process of constructing an additional +/-320 miles of CO₂ pipelines**

US CO₂ Pipelines vs Proposed Gasification Projects



Gulf Coast Anthropogenic Sources of CO₂



Key to Success: CO₂ Pipeline Network



- ❧ CO₂ pipelines operate at higher pressures (2000+ psi) than oil or natural gas pipelines
- ❧ CO₂ EOR projects require constant supplies of relatively pure CO₂ (+/- 95%)
- ❧ Denbury's proposed CO₂ pipeline network will connect to both natural and man-made sources, providing flexibility to manage daily supply and demand imbalances

Green Pipeline Project



Projected Costs & Timing (Millions)	2007	2008	2009	2010	Total
Right-of-way	\$12	\$ 58	\$ 17	\$ 7	\$ 94
Pipe & Materials	--	107	82	2	191
Engineering	1	11	48	13	73
Installation	--	26	283	63	372
Total	\$13	\$202	\$430	\$85	\$730

Anthropogenic CO₂ Issues

• Anthropogenic Sources

• Existing Sources

- Either low volumes < 30MMcf/d (ammonia, SMRs)
- Too expensive (power plants, cement plants, etc)

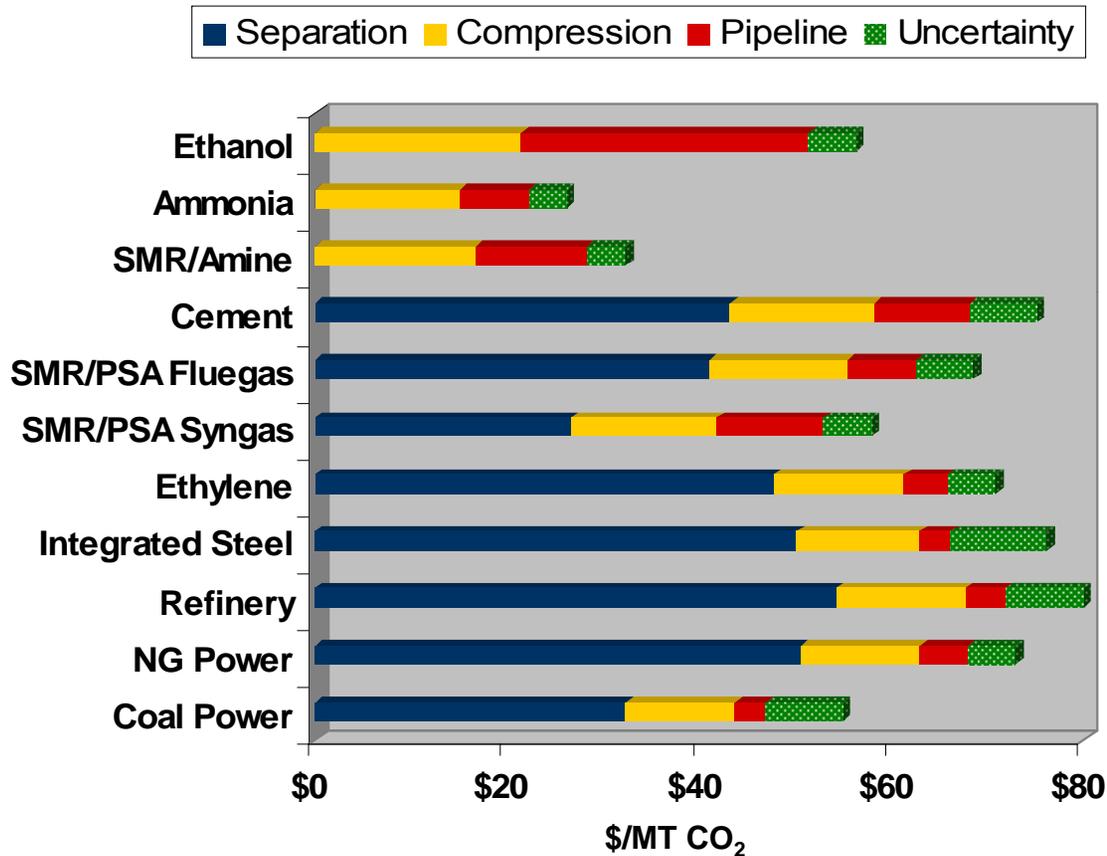
• Future Sources

- Gasification projects need access to capital
- Capital markets are essentially closed

• Existing and Future Sources

- Need assurance that CO₂ EOR will qualify as permanent storage

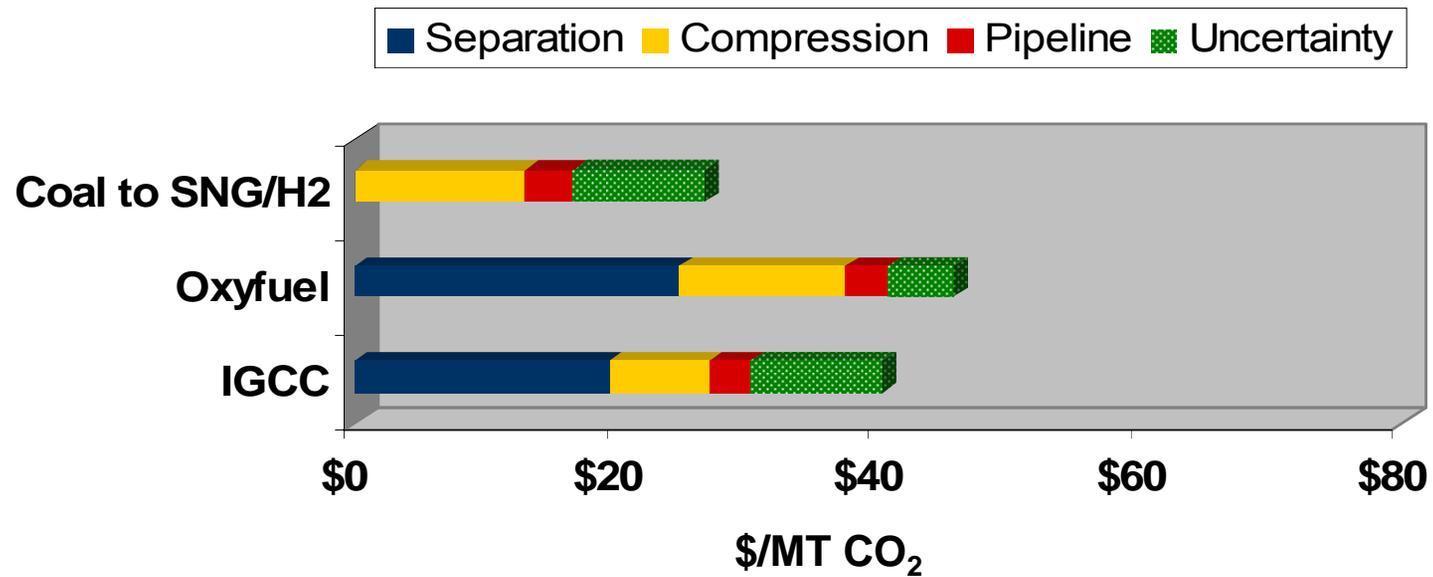
Existing Anthropogenic Sources



Assumptions

- Capture from flue gas by amine
- 25 mile pipeline connects each source to major CO₂ pipeline
- Additional \$2/MT for transport in major pipeline
- COE - \$0.05/kWh for utilities and \$0.06/kWh for others
- NG - \$6/MMBtu HHV
- Coal - \$1.5/MMBtu HHV
- Capital recovery factor – 14%/yr

Future Anthropogenic Sources



Current Incentives

🗺️ Energy Improvement and Extension Act of 2008

- **SEC. 45Q. CREDIT FOR CARBON DIOXIDE SEQUESTRATION**

- \$20/ton for non-EOR Sequestration
- \$10/ton for man-made CO₂ utilized in CO₂ EOR

- **SEC. 116. CERTAIN INCOME AND GAINS RELATING TO INDUSTRIAL SOURCE CARBON DIOXIDE TREATED AS QUALIFYING INCOME FOR PUBLICLY TRADED PARTNERSHIPS**

- Majority of existing CO₂ pipelines are operated by PTPs
- Majority of new pipeline construction is performed by PTPs

🗺️ SEC. 43. Enhanced Oil Recovery Credit – (Obama Budget Plan would Repeal)

- 15% of Qualified Capital Investments

Sequestration and CO₂ EOR

✦ Regulatory Framework Exists for CO₂ EOR and Sequestration

- Right to Inject CO₂ Exists under our Mineral Leases
- Injection Wells are Permitted Under Existing EPA UIC Regulations
- CO₂ Pipelines are Regulated by the DOT and OPS Under Existing Regulations
- Oil and Gas Operations are Regulated by State Regulators
- Geologic Description of Reservoirs are Well Understood
 - We know where the CO₂ will be
 - CO₂ EOR projects already perform significant MMV activities.
 - CO₂ EOR projects store CO₂ volumes from the start of injection
- The Only Regulatory Piece that is Missing is Post Injection Monitoring
 - Based on initial indications from regulatory workshops, the cost of post injection monitoring appears reasonable
 - Post injection monitoring stage for CO₂ EOR is 20 to 40 years into the future

The Future is Now

CO2 EOR Projects are Already Achieving “Next Generation” Results:

- A NETL report estimated CO₂ storage levels in CO₂ EOR projects based on projects using Water Alternating Gas (WAG) methods; Continuous injection, 100% CO₂ (no water), stores almost double the CO₂ of WAG methods
- Continuous injection CO₂ EOR projects inject from 0.52 to 0.64 metric tons of CO₂ for every recovered barrel of oil (which releases ~0.42 metric tons of CO₂), *storing* between 24% and 52% *more* CO₂ than the recovered oil will produce

Advancing U.S. Energy Independence:

- CO₂ EOR can recover billions of barrels of identified oil from existing US oilfields, providing additional domestic energy production.
- The environmental impact of every barrel of recovered US oil could be offset by carbon capture and storage (CCS), versus no CO₂ reduction for imported oil

Infrastructure for Future CCS Solutions:

- A CO₂ pipeline network will enable large-scale CCS during enhanced oil recovery and in post-production utilization of underlying saline formations
- CO₂ pipeline networks provide the basic infrastructure needed for development of carbon solutions for environmentally-sensitive industrial developments including innovative gasification projects that can produce, power, substitute natural gas, fertilizer and chemicals from plentiful U.S. natural resources

Summary

- **Depending on Emission Source, Distance, Through-Put and Oil Price - CO₂ EOR can Cover All or a Portion of the Capture Costs**
- **CO₂ EOR Projects Can Provide the “Costs” of Transportation, and Sequestration**
- **Emission sources need regulatory certainty that anthropogenic CO₂ injected and stored in CO₂ EOR projects will qualify as permanent sequestration of their CO₂ emissions. (Offsets or Credits)**
- **CO₂ EOR is the Only CCS Method that can be Applied Now at Commercial Scale**
- **CO₂ EOR is the Only CCS Method that Generates Additional Domestic Energy in Addition to Capturing and Permanently Storing CO₂**

Questions