



National and Regional Perspective on CCUS and ICCUS

Brian Hill, Finance and Commercialization Consultant

BHill@CrescentRI.com

980-322-8122

May 21, 2019

Disclaimer

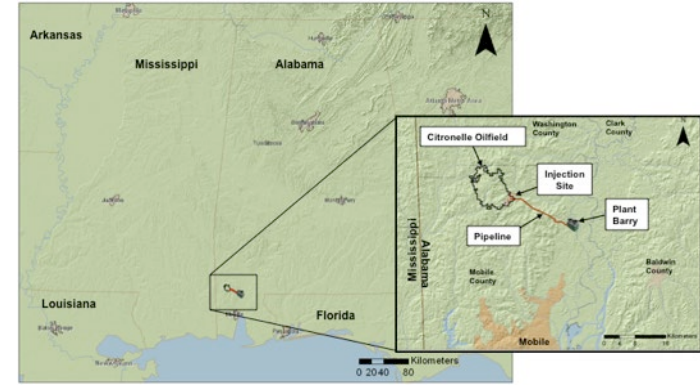


This presentation is based upon work supported by the Department of Energy and was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

SECARB CCUS Demo



- SSEB's SECARB Demo at Plant Barry (Bucks, AL)
- 25 MW post-combustion slip-stream carbon capture
- 12 mile pipeline to Citronelle, AL for storage
- Potential for EOR



Power Plant



Capture



Transport



Storage

Petra Nova- Emergence of CCUS in South



SSEB Demo Goes Commercial!

- NRG Energy (Houston, TX)
- Interest in Plant Barry Demonstration
- Plant scale-up to 240 MW
- Post-combustion slip-stream
- Captures 5,200 tons CO₂/day or 90% of CO₂
- Pipeline to Petra Nova West Ranch Oil Field (81 miles)
- EOR 300 bbls/day to 15,000 bbls/day!
- 60 million bbls Recoverable Reserves



45Q Update – Key Dates

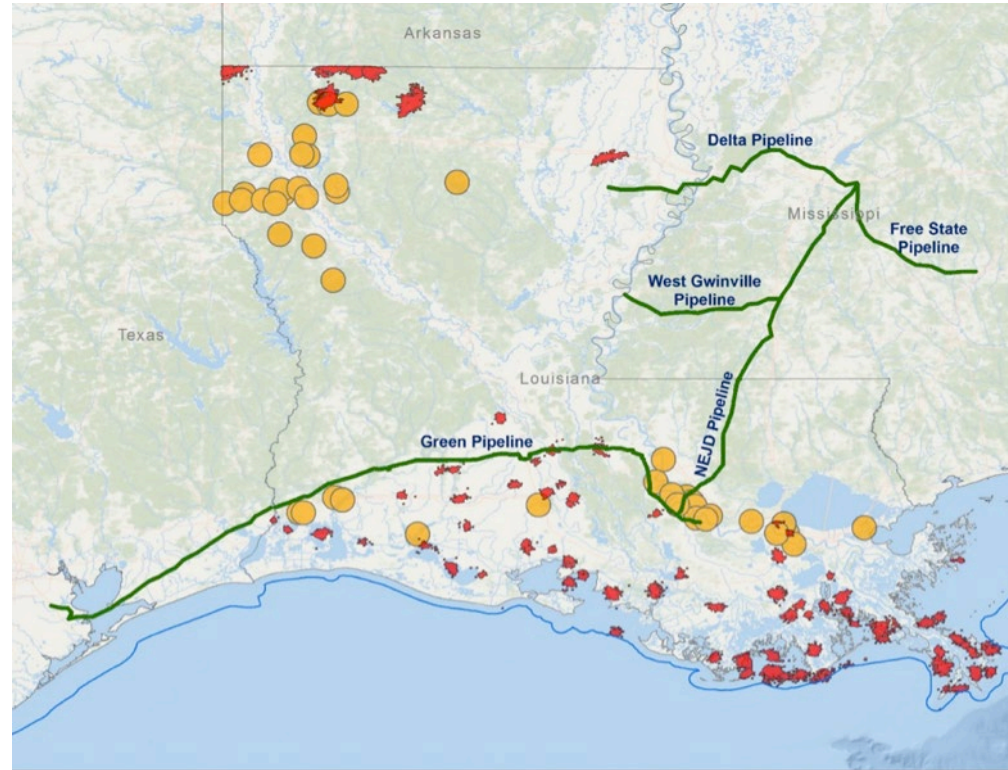


- **February 9, 2018**
 - The Bipartisan Budget Act of 2018 (the ACT) was passed by Congress and signed by the President
- **May 2, 2019**
 - Internal Revenue Service (IRS) released Notice 2019-32 requesting comments on anticipated regulations and other guidance under section 45Q of the Internal Revenue Code
- **June 16, 2019**
 - Last date to submit comments under Notice 2019-32 (45 days)
- **December 31st, 2023**
 - Construction must commence by December 31st, 2023 to qualify for 45Q tax Credits



- CO₂ Utilization and Storage Acceleration (CO₂ USA) - Gulf Coast used a market-driven approach to identify opportunities to accelerate CCUS commercialization within the industrial sector
- SSEB and DOE-FE developing roadmap and toolkit
- Central Gulf Coast Region is prime area for Industrial-CCUS
- Louisiana and industrial corridor along Mississippi uniquely situated to benefit from integrated CCUS System
 - Industrial sources produce large amount of CO₂
 - Green pipeline runs across southern Louisiana
 - Many existing oilfields could benefit from Enhanced Oil Recovery (EOR)

**Orange = Industries Red = Oil Fields*



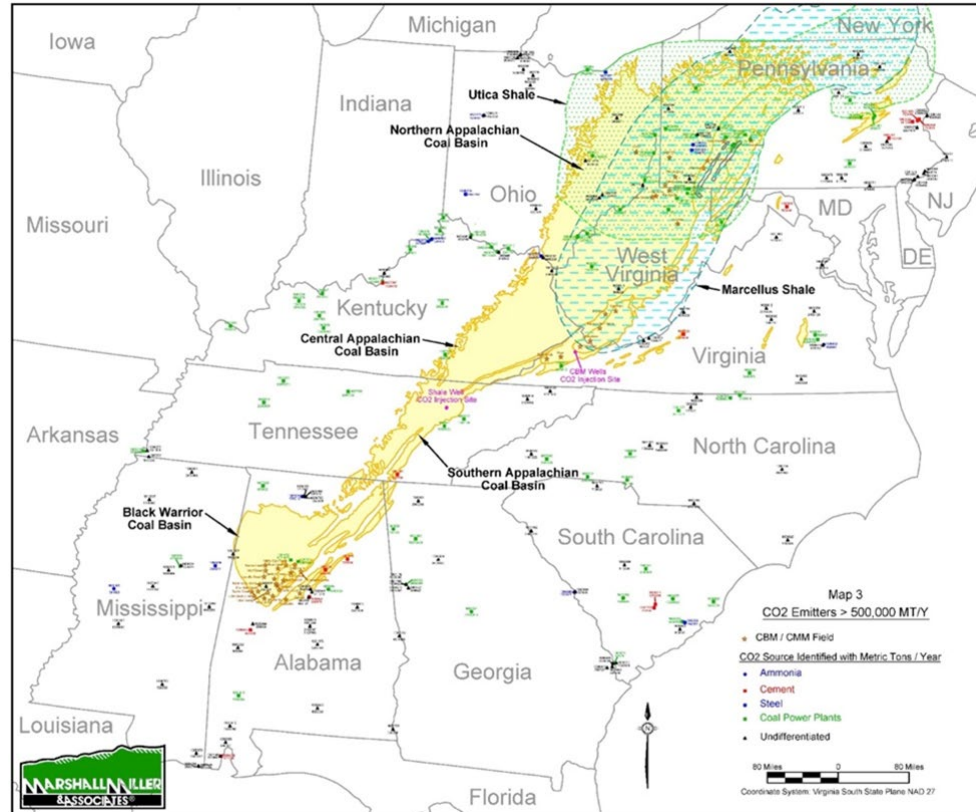
CO₂ Emission Clusters, Pipeline Infrastructure, and Oil Fields

Source: Louisiana State University, Center for Energy Studies, 2016

CO₂ USA - Appalachia

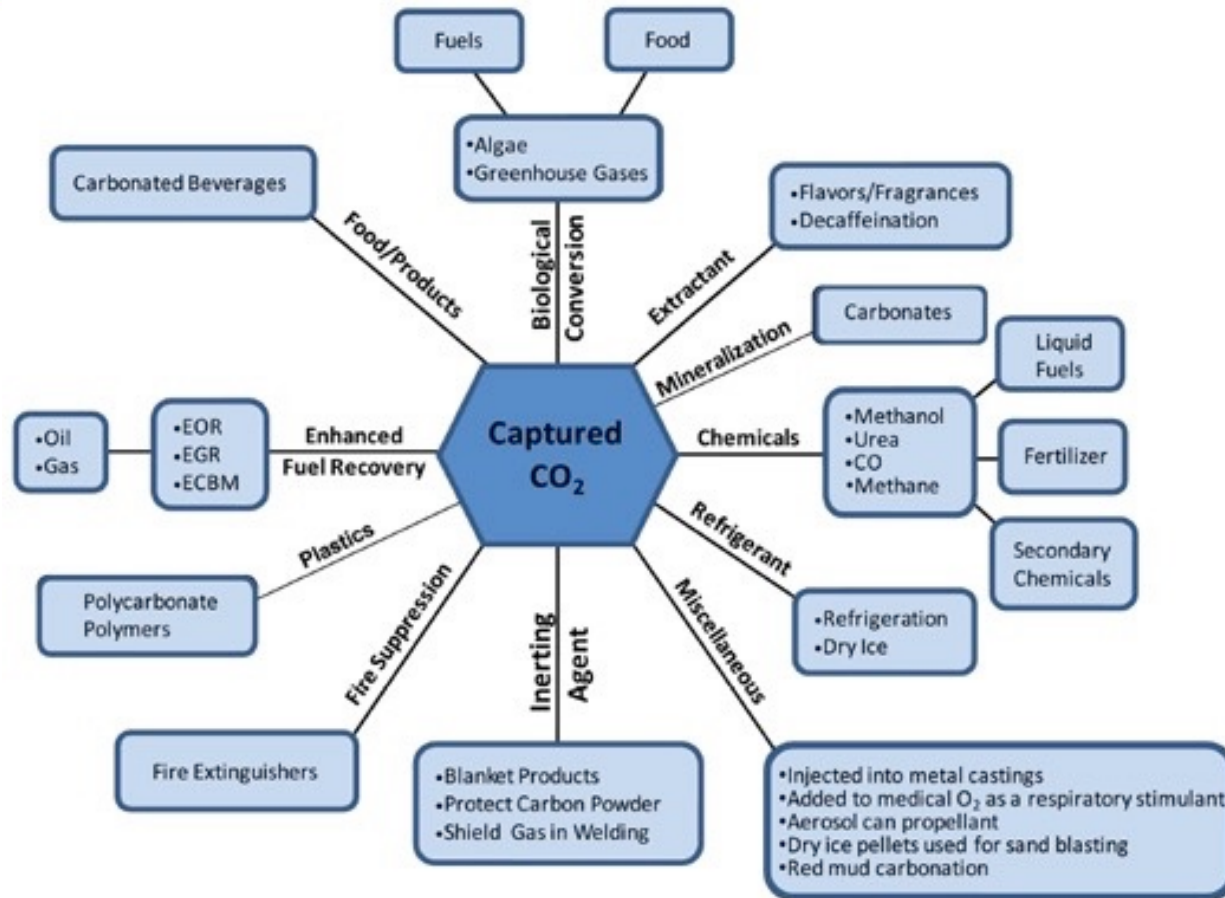


- Closely related to CO₂ USA - Gulf Coast and designed to educate and inform interested parties about possible beneficial uses of CO₂ across Appalachia
- Project is comprised of three regions within Appalachia (Northern, Central and Southern).
- Within each region, specific opportunities may exist that could lead to viable business opportunities to capture and utilize existing CO₂ emissions
- Regional workshops have been held in each region to explore potential business opportunities and solicit feedback on perceived barriers to advancing these potential business opportunities
- Feedback may be used to identify additional research that could reduce existing data gaps and assist market participants in advancing potential CO₂ focused business opportunities.



CO₂ Emitters greater than 500,000 tons per year

Industrial and Commercial CO₂ Utilization Applications





Transcending Boundaries



Southern States Energy Board

6325 Amherst Court

Peachtree Corners, Georgia

(770) 242-7712 phone

(770) 242-9956 fax

www.sseb.org