

Southeast Regional Carbon Sequestration Partnership

Site and Regional Commercialization



*13th Annual Stakeholders'
Briefing
Atlanta, GA
March 7, 2018*



Brian W. Hill
Energy Finance & Infrastructure
Consultant
Southern States Energy Board

Acknowledgements

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.



Site & Regional Commercialization Plan

SECARB Task 13 Objective

“Provide research findings and lessons learned to regulators and industry representatives engaged in the commercial deployment of carbon capture and storage technologies”

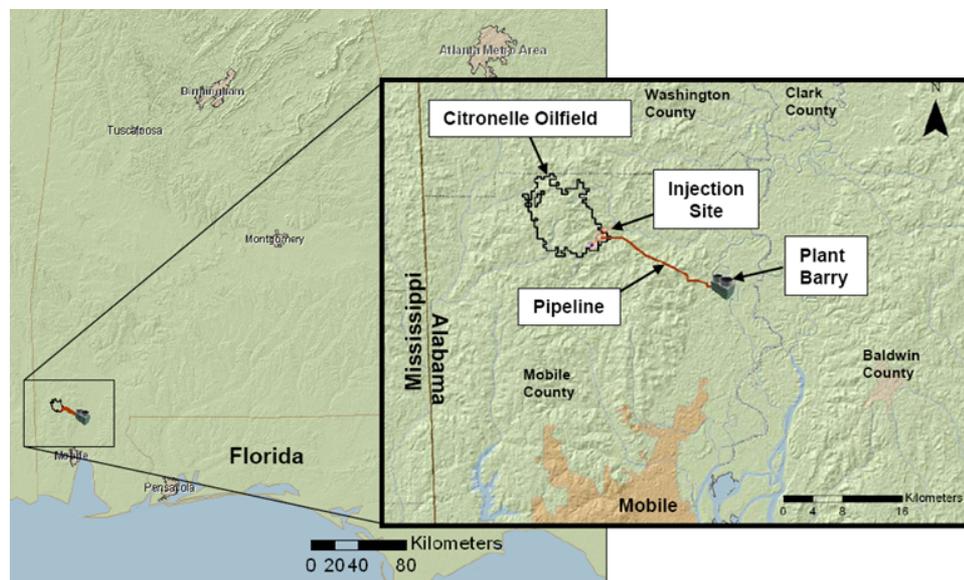
SUMMARY

“The Plan is linked with the regional partnership’s outreach and education initiatives, with emphasis on:

- first movers in commercial deployment, and
- regulators who will be tasked with approving carbon capture and storage projects.”

SECARB Integrated Field Demonstration Project

- Carbon capture from Plant Barry (equivalent to 25MW of electricity).
- 12 mile CO₂ pipeline constructed by Denbury Resources.
- CO₂ injection into ~9,400 ft. deep saline formation (Paluxy) above Citronelle Field
- Monitoring of CO₂ storage during injection and three years post-injection.



Power Plant



Capture



Transport



Storage

Site Specific Commercialization: WA Parish Petra Nova

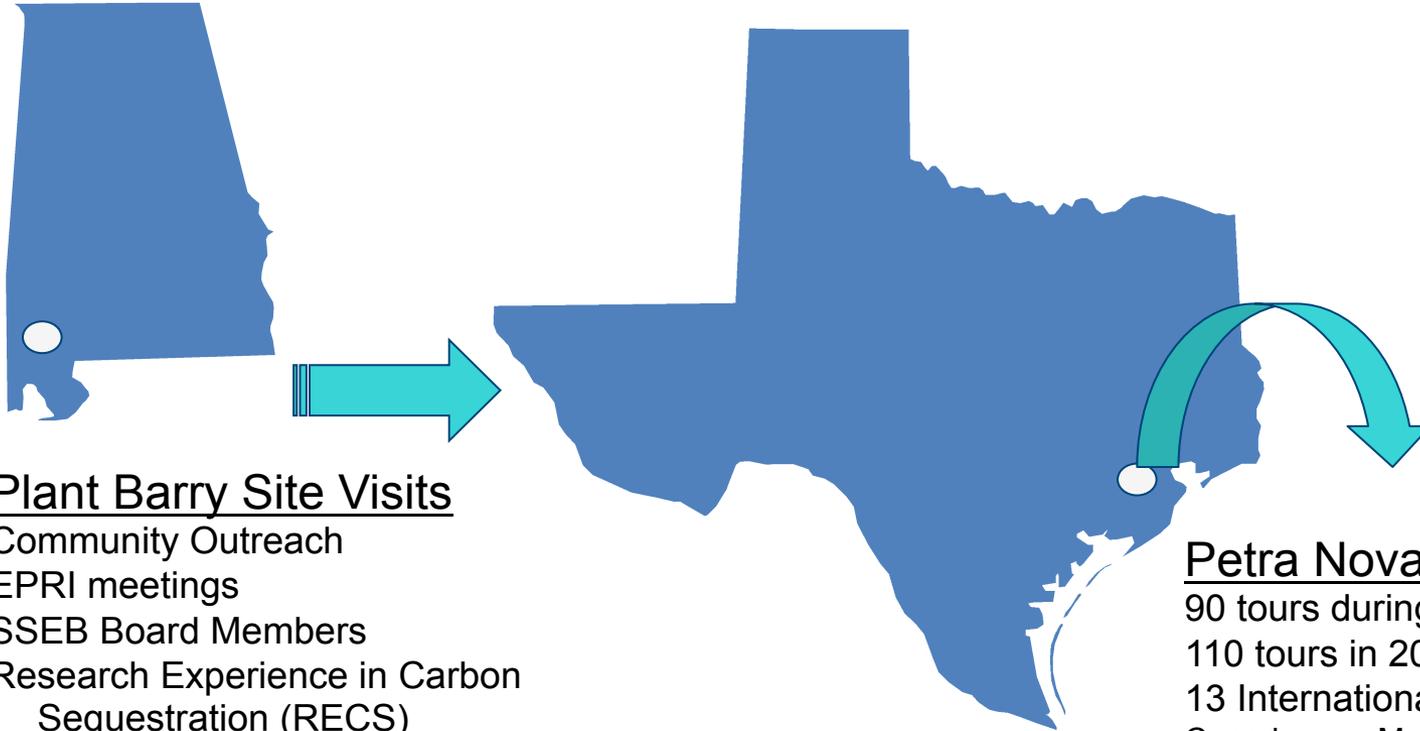
250 MW MHI CCUS Commercial Scale Up (10x Plant Barry)



Source: <http://www.nrg.com/>



Knowledge sharing started with Plant Barry and continues with Petra Nova



Plant Barry Site Visits

- Community Outreach
- EPRI meetings
- SSEB Board Members
- Research Experience in Carbon Sequestration (RECS)
- 8 International Delegations
- Belgium Canada
- Italy Japan
- Norway Spain
- Taiwan UK

Source: SSEB

Petra Nova Site Visits

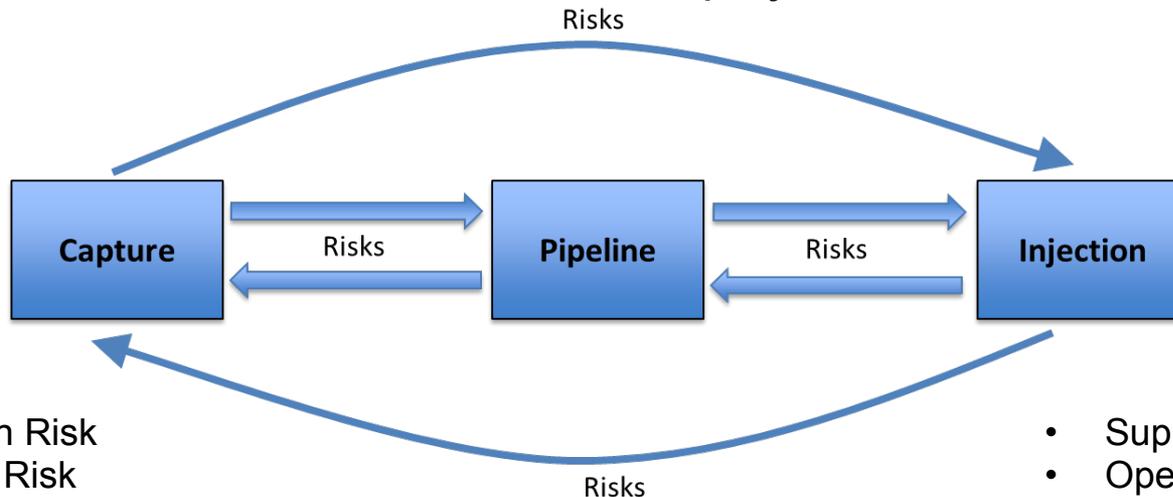
- 90 tours during construction
- 110 tours in 2017 (post construction)
- 13 International Delegations
- Canada Mexico Chile
- UK Norway Australia
- Singapore Thailand India
- Pakistan China S. Korea
- Japan

Source: NRG



Project Risks

- The decision to build a project involves evaluating multiple factors but, in general, for a project to move forward it needs to be able to meet a couple of parameters:
 - Does the project provide an attractive return on capital to the company when compared to other possible uses of capital?
 - Is the potential financial return to the company greater than the potential risks associated with the project?



- Construction Risk
- Commodity Risk
- Financing Risk
- Regulatory Risk

- Supply Risk
- Operations Risk
- Legal Risk
- Bankruptcy Risk

Looking forward - 2018

The Bipartisan Budget Act of 2018 was passed by congress and signed by the President on February 9th 2018. Included in the Act was the **F**urthering carbon capture, **U**tilization, **T**echnology, **U**nderground storage, and **R**educed Emissions (FUTURE Act). The FUTURE Act provides for tax credits (45Q) for CO₂ capture, utilization, and/or storage.

- 45Q provides a tax credit of
 - \$12.83 per metric ton captured rising to \$35 per metric ton captured in the next 10 years for CO₂ utilization
 - \$22.66 per metric ton captured rising to \$50 per metric ton captured in the next 10 years for geologic storage without utilization
- Construction must begin prior to January 1, 2024
- Credit is received for 12–year period after equipment is originally placed in service