Main Breakthroughs in Carbon Storage in the Gulf Coast

Susan Hovorka and GCCC team

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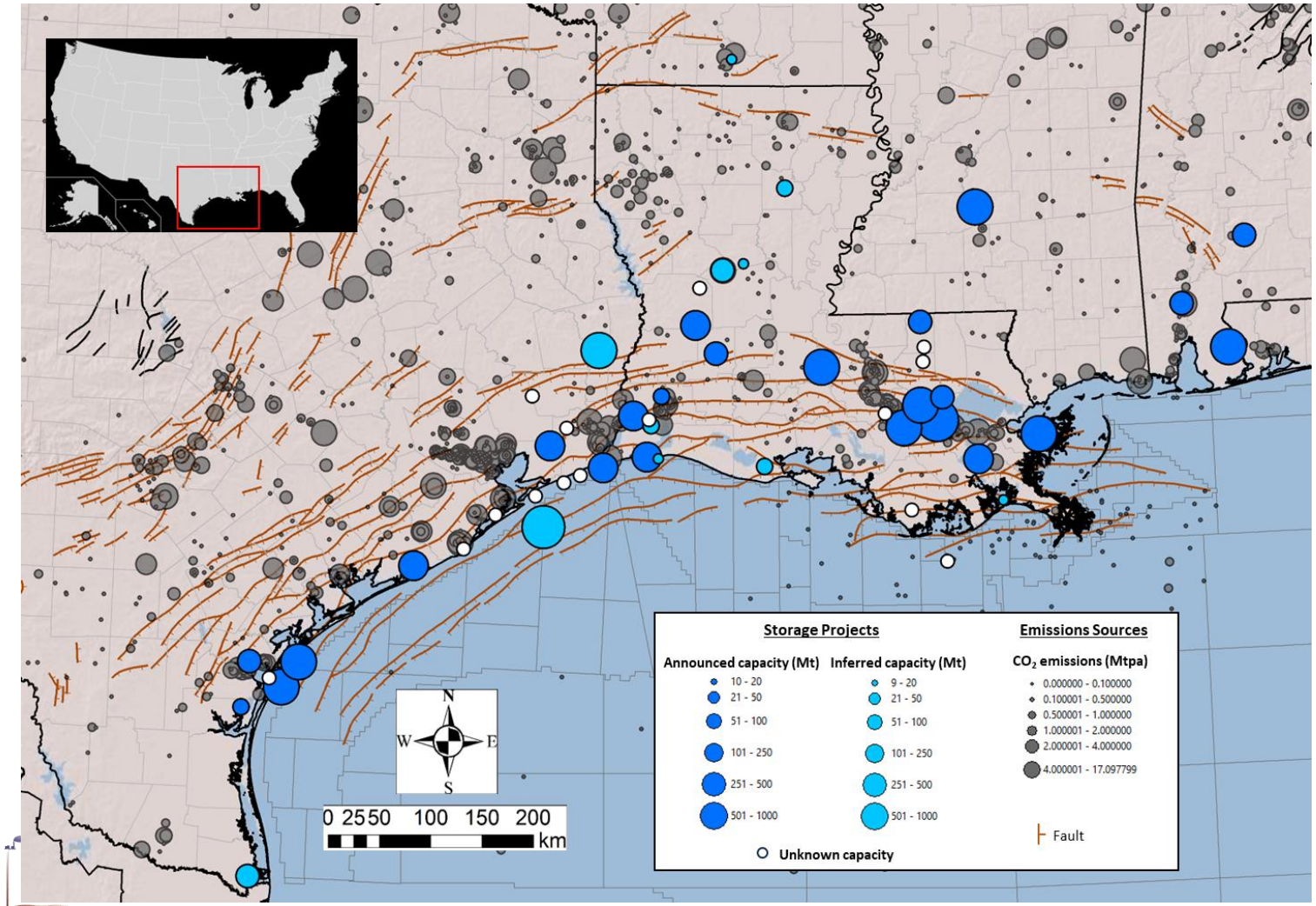
UTCCS-7
January 23–25, 2024
UT Austin, Austin, TX

Action!

- Announcements of 50 projects in Gulf Coast and permitting underway



30 permit applications posted in this area https://www.epa.gov/uic/current-class-vi-projects-under-review-epa

DOE Funding to 7 capture projects and 7 storage projects

Bump, 2024
Please see talk 2a this afternoon

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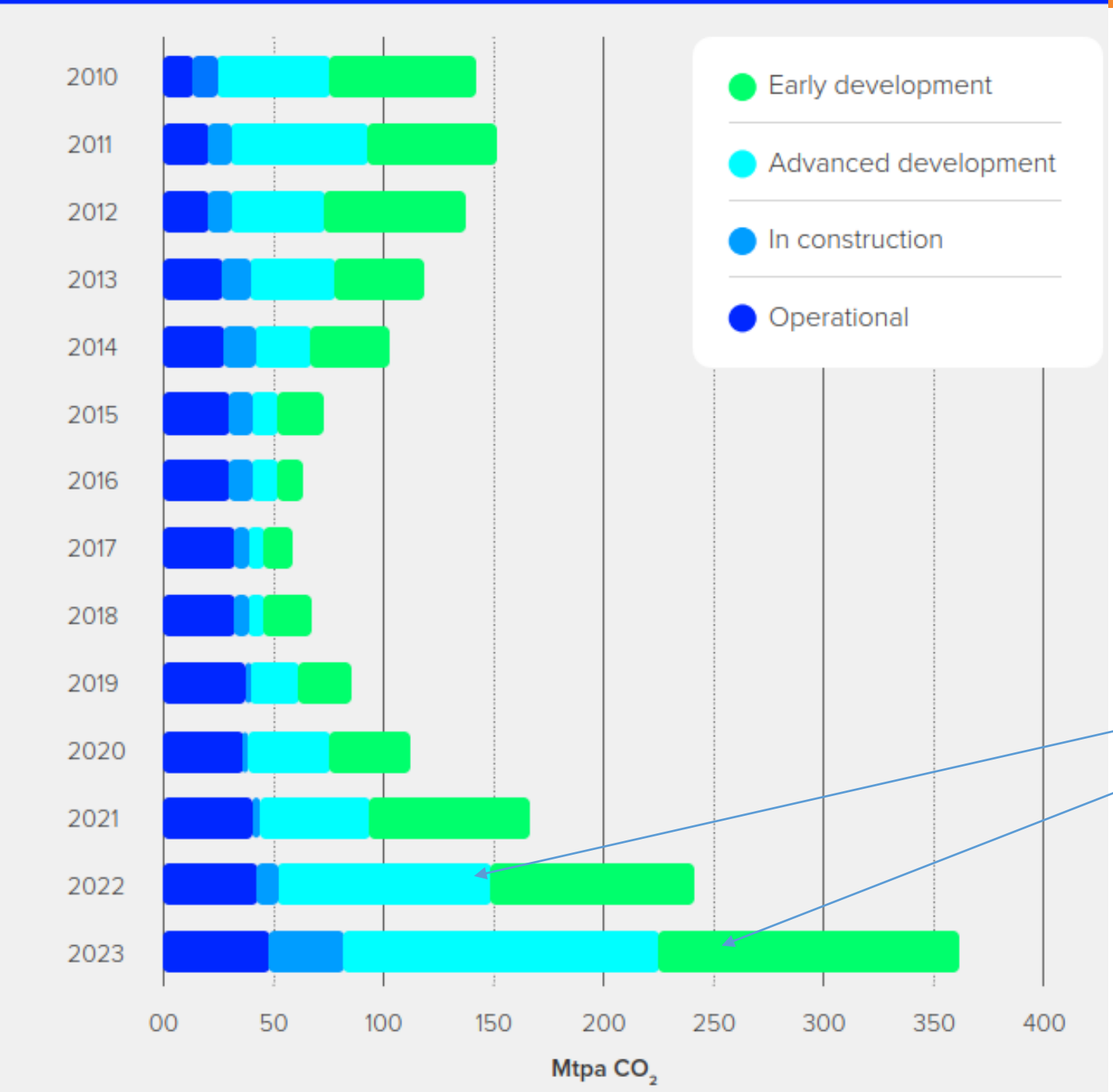
Figure 3.1–1: Capacity of commercial facility pipeline since 2010

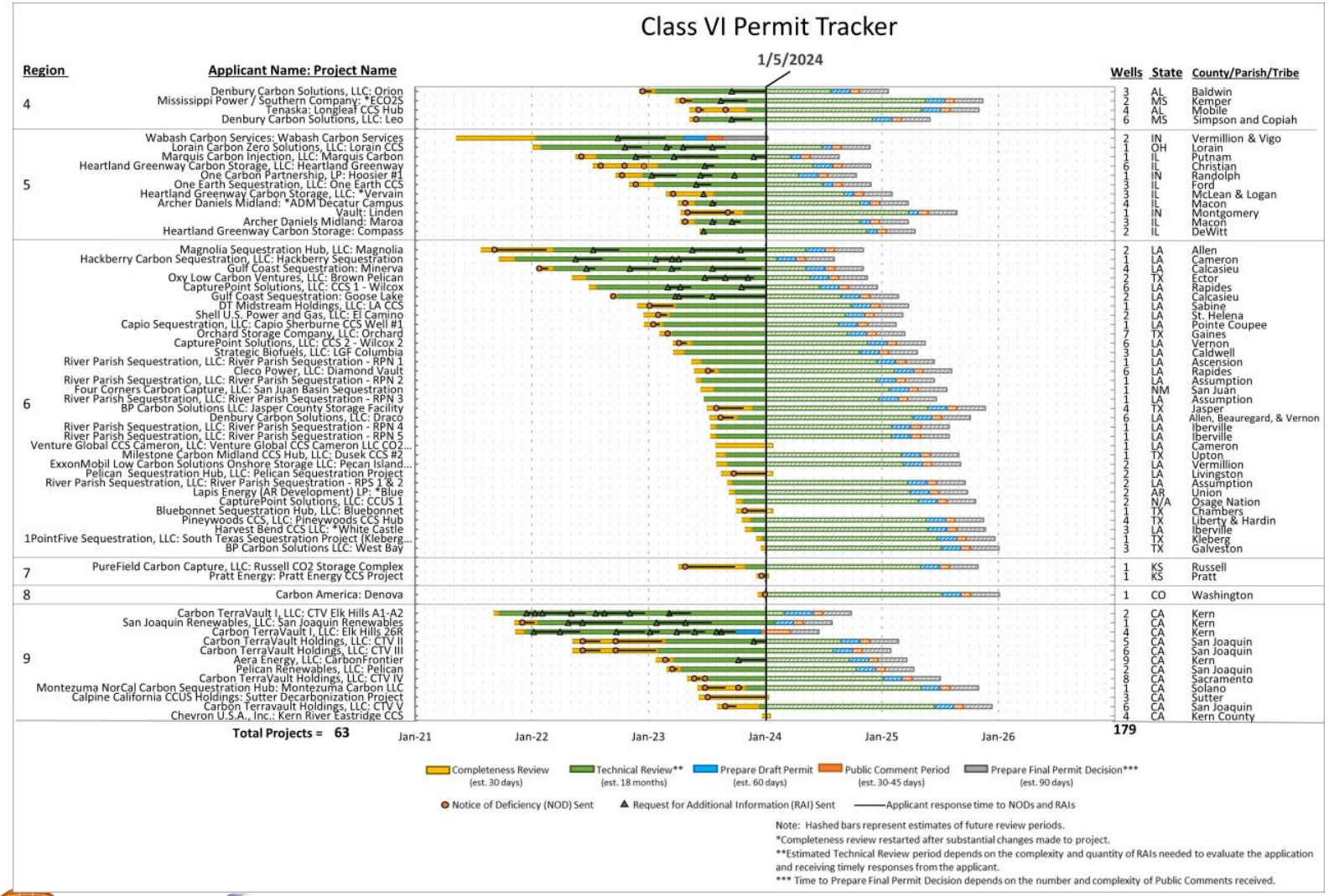


Global Increases in Projects

https://www.globalccsinstitute.com/resources/publications-reports-research/global-status-of-ccs-2023-executive-summary/

Global CCS Institute tracker shows big increase in project development in past 2 years, but not yet so much constructed or operational yet

Class VI permits in Federal review



- Administratively complete
- 18 months technical review
- 45 days public comment
- Permit decision

Total projects = 63
Total wells = 179

https://www.epa.gov/uic/current-class-vi-projects-under-review-epa

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GCCC engagement with this action

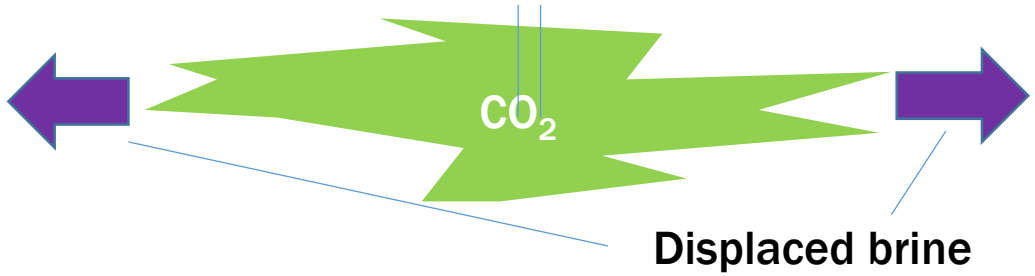
- Serving as sub-recipient on 8 DOE funded projects
- Efforts to coordinate across projects
  - Long serving access to information via SECARB USA and GOMCARB DOE funded regional partnerships
  - Proposal for Gulf of Mexico Basin Opportunities (GuMBO) to continue to support regional project development
- Workforce development
  - Short courses for oil and gas professionals to become CCS experts
  - Student training via support for Research Assistants
  - CCS classes at UT
- Efforts to support regulators
  - Via Groundwater Protection Council
  - Planned dialogs

Technical progress:
New concepts on storage capacity

For large deployment, pressure space is the commodity to be assessed

Accommodation of CO_2 requires displacing brine or compressing the system

In the past, focus has been on space for the CO_2 plume



Lessons to be learned from salt water disposal and induced seismicity in the Permian Basin

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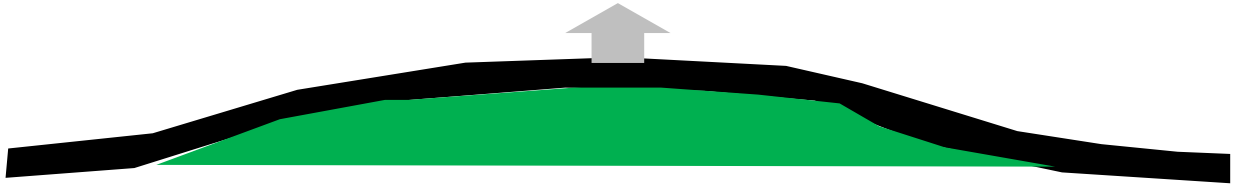
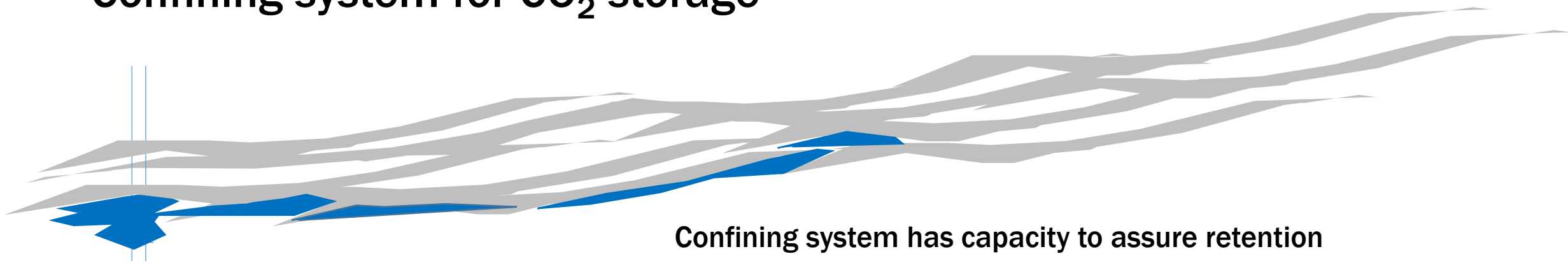
Technical progress defining a composite confining system

Seal for Hydrocarbon Resource

Low capillary entry pressure to
Retain thick hydrocarbon column



Confining system for CO_2 storage



Confining system has capacity to assure retention
CO_2 may enter the base and be trapped, but will not exit the top unless capacity is exceeded

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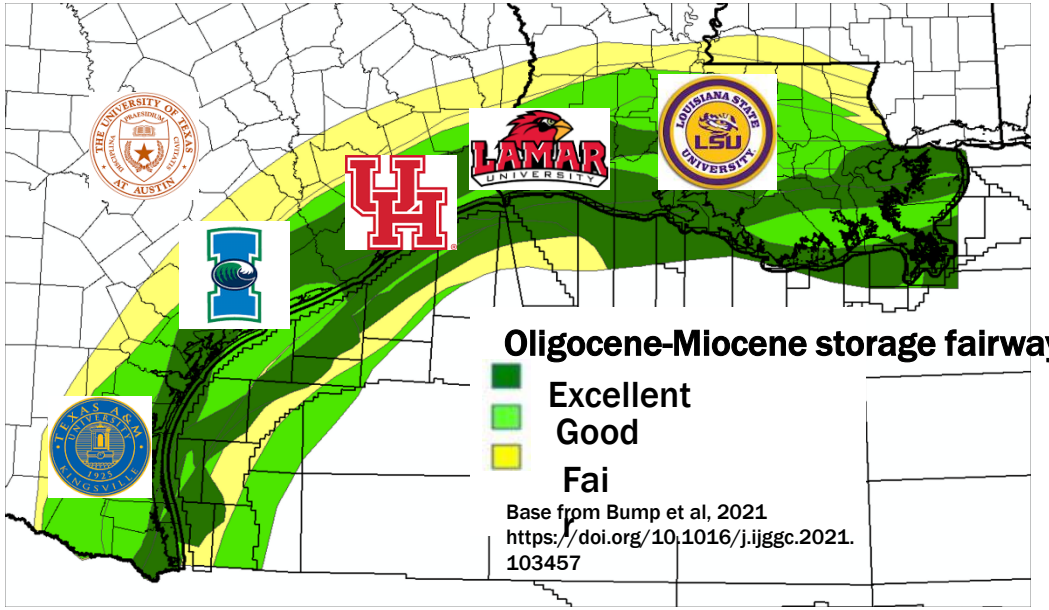
GCCC mission to get people reliable information

- Texas State Geologic Survey mission – applied geoscience (see our pubs booth)
- Publication, public information, web and data resources
  - www.gulfcoastcarbon.org - Brine data base since 2000
- Newly funded DOE project: Texas Louisiana Carbon Management Community (TXLA CMC)

https://gccc.beg.utexas.edu/research/txla-cmc

TXLA CMC
Texas-Louisiana Carbon Management Community



Upcoming general introduction webinar
Feb.9. See poster tonight

www.put-it-back.org

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Policy and Public Processes

- Some movement toward increased valuation/acceptance of CCS as an essential GHG mitigation method and a low risk technology
  - Industry investment
  - COP 28 compromise
  - Permitting progress
    - EPA
    - State primacy – North Dakota, Wyoming, Louisiana (Texas progress!)
  - Some subtle shifts in press coverage
- Still strong opposition to CCS
  - Anti-fossil “keep it in the ground” viewpoint
  - Concern about competition among GHG emissions technology “I prefer nature-based”
  - Lack of information about what CCS is, maturity, and actual risk profile

Thanks to Sponsors of the GCCC

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