

Carbon Capture and Sequestration at the Rio Grande LNG site

- Carbon capture and sequestration (CCS) and carbon capture, utilization, and storage (CCUS) are systems being developed to collect carbon dioxide generated by high-emitting processes such as coal- and gas-fired power production and plastics manufacturing. The “captured” CO₂ emissions may be transported to sites where they are injected deep underground or used for industrial processes. Direct air capture (DAC) involves technologies being developed to remove CO₂ from ambient air.
- In November, the company that hopes to build the Rio Grande LNG plant at the Brownsville Port, applied for a “limited amendment” to its permit that would add a CCS system to the LNG export facility. The request for this addition to their initial permit does not address the experimental nature of the CCS project, nor does it address the potential short and long-term environmental impacts. (The amine-based post-combustion CO₂ capture process they intend to use consumes a considerable amount of the energy itself, making the system less energy efficient. (Carbon Capture’s Steep Climb, CEN.ACS.ORG July 19, 2021, p. 31)
- Oxy Low Carbon Ventures, working with Next Decade, will transport that CO₂ from the Rio Grande LNG plant through pipelines and “sequester” it in underground geologic formations in the Rio Grande Valley. According to company documents, OLCV is also “Helping other energy companies reduce their CO₂ emissions associated with the production, transportation, and use of natural gas.” This could mean piping CO₂ from distant sources to the Rio Grande Valley while “Generating high-quality, verifiable carbon offsets to support companies in their efforts to achieve net-zero emissions.” (https://www.next-decade.com/wp-content/uploads/2021/07/2021-07-11_NextDecade_Corporate-Presentation_vU.pdf)

\$\$\$\$ Who is paying?

- Next Decade, the corporation overseeing the project, points out its ability to use tax codes (IRS Section 45Q) as part of its revenue stream. Its financials can be further enhanced if it changes its mind about sequestering the CO₂ in the LRV and instead opts to sell some of it to fracking operations for use in Enhanced Oil Recovery (EOR). Oxy Low Carbon Ventures already has plans to use its DAC for EOR in West Texas. (Carbon Capture’s Steep Climb, CEN.ACS.ORG July 19, 2021, p. 35) Presumably, that CO₂ then stays in the ground near the fracking site, but that actually allows for more fossil fuel to be extracted while oil and gas companies can claim carbon credits. (<https://crsreports.congress.gov/product/pdf/IF/IF11455>)
- The bottom line is that CCS and CCUS are ways for the oil and gas industry to promote themselves as green, when in reality this false promise encourages more

fossil fuel development. They get carbon credits and tax breaks that are ultimately paid for by governments as we are left with the growing cost of the climate crisis.
<https://www.ciel.org/wp-content/uploads/2021/07/Confronting-the-Myth-of-Carbon-Free-Fossil-Fuels.pdf>

Diminishing oversight

- In June 2021, ***TXHB 1284 -Relating to the regulation of the injection and geologic storage of carbon dioxide in this state***, was passed by the legislature, signed by the governor, and is now in effect.
- With the enactment of this bill, the TCEQ is completely out of the picture when it comes to regulating carbon capture and storage. This bill gives the Railroad Commission of Texas the power to “adopt standards for the location, construction, maintenance, monitoring and operation of a carbon dioxide repository.” The law further states that “The RR Commission of Texas may issue a certification under Subsection (c) (2) only if the commission finds that based on substantial evidence, there is a reasonable expectation that: (1) at least 99 percent of the carbon dioxide sequestered as required by Subsection (a) (4) will remain sequestered for at least 1,000 years; and (2) the operator’s planned sequestration program will include appropriately designed monitoring and verification measures that will be employed for a period sufficient to demonstrate whether the sequestration program is performing as expected.” (<https://legiscan.com/TX/text/HB1284/id/2254252>) There is no further discussion in the bill regarding this assumption that 99% of the CO₂ will remain sequestered for 1000 years.
- Transportation by pipeline conducted by Oxy Low Carbon Ventures will be monitored by the RR Commission as well. (Texas Administrative Code Title 16 part 1, chapter 8.) Given the RRC’s poor track record on enforcing flaring and monitoring invisible methane emissions (both purposeful and accidental leaks) it seems that Texans should have a backup plan to ensure that environmental quality is maintained during this transport and burial process.

Environmental and Societal Concerns

- CCS and Class VI injection of CO₂ deep underground are in the research and development stages. It is unconscionable for FERC to allow this project to go forward without requiring an environmental impact statement. For example, CO₂ must be transported at very high pressure and a very low temperature. Moisture in the pipeline creates a corrosive environment. This means that leaks or ruptures can have rapid and catastrophic results.
- The research is ongoing and definitely not conclusive as noted in an EPA document, “Even with the large physical separation between storage reservoirs and surficial

environments, there remains concern that CO₂ stored in reservoirs may eventually leak back to the surface through abandoned wells or along geological features such as faults. Leakage would reduce the effectiveness of CCS, possibly lead to human health and ecological impacts at the ground surface, including impacting water quality of near-surface aquifers used for drinking water.” (Understanding Geochemical Impacts of Carbon Dioxide Leakage from Carbon Capture and Sequestration <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1006L2P.txt>)

- As stated in an Open Letter to US and Canadian Leaders signed by over 500 organizations (including Save RGV), “CCS imposes even more risks on communities from CO₂ pipelines and storage. Transporting, injecting, and storing CO₂ presents new environmental, health, and safety hazards in communities targeted for CCS infrastructure. Pipelines can leak or rupture, and injection can contaminate water sources. These risks fall disproportionately on Black, Brown, Indigenous, and low-income communities, further entrenching a bleak history of environmental racism.” (https://www.ciel.org/wp-content/uploads/2021/07/CCS-Ad_The-Washington-Post_FINAL.pdf)

An analogy...

Carbon storage technology is flawed. It is flawed as suggesting a balloon is a good way to store helium. How long does a helium balloon stay filled? Longer if it is a mylar balloon than a latex balloon, but not very long. Carbon Storage works by pumping carbon dioxide into old oil wells and caverns. Instead of pumping it to the 5 to 20 pounds per square inch (psi) as a balloon is, carbon storage technology fills the old wells and caverns to thousands of psi to get more carbon dioxide in. That pressure will force leaks. It may take a month or ten years for the carbon dioxide to leak out, but it will and have the same effect on global warming as is it would have if not “stored,” but the oil and gas industry will have profited from the extra years of oil and gas production and credits it received through the carbon capture incentives.

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What can individuals do?

Submit a comment by Monday, December 20, 2021 to FERC. Reference Docket # CP22-17-000