Clark Hill

CCS in the Pelican State: A Legal, Technical & Scientific Outlook for 2026

PLANO Executive Night
February 11, 2026

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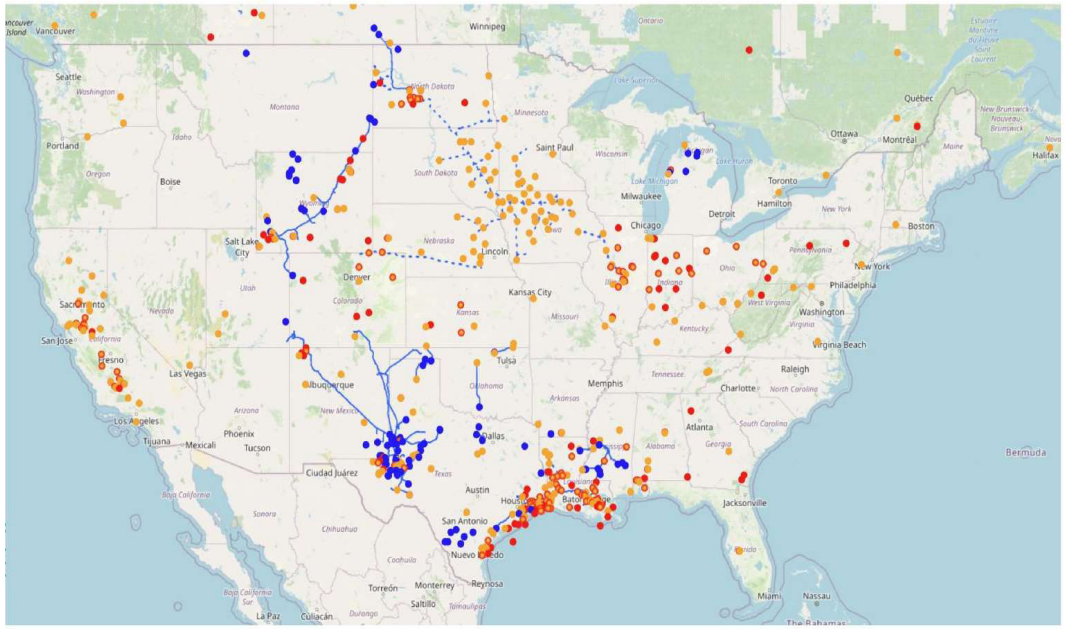
Topics for Discussion Today

Recent Updates Relating to CCS Development in Louisiana

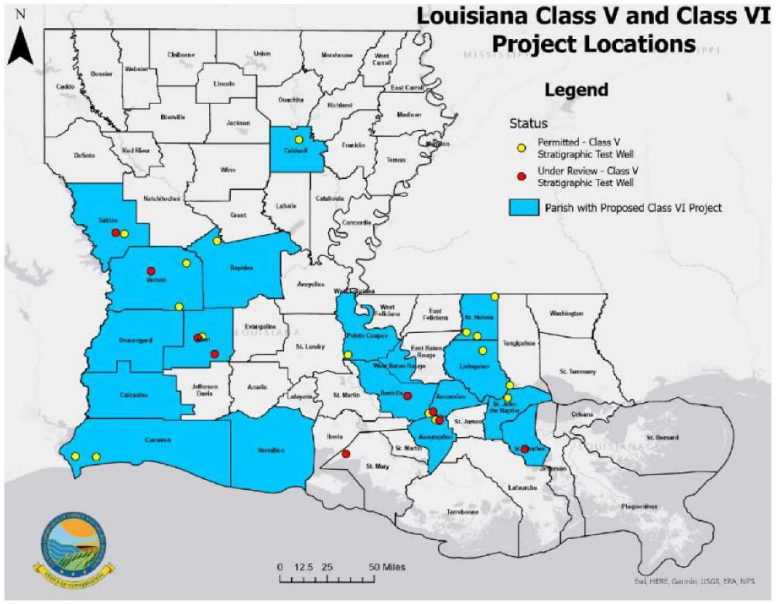
- Overview of CCS Development in Louisiana
- Recent Activity from Gov. Landry
- Technical Perspectives on CCS Projects
- Legislative Overview from 2025
- Study – Sheltering in Place (CTEH)

• 2025 Gulf Coast Land Institute

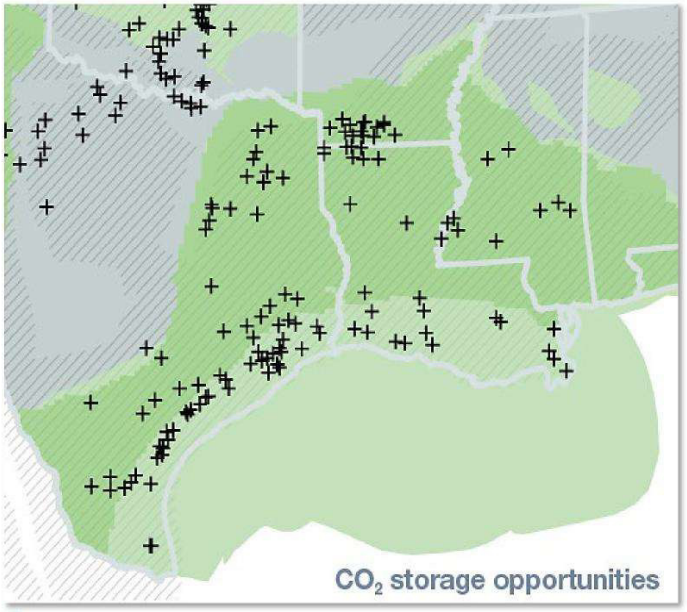
CO2 Pipelines, Proposed Pipelines, EOR Projects, Class VI Projects and Capture Projects



Current CCS Project Locations in Louisiana



CCS Potential in Louisiana: Storage Potential



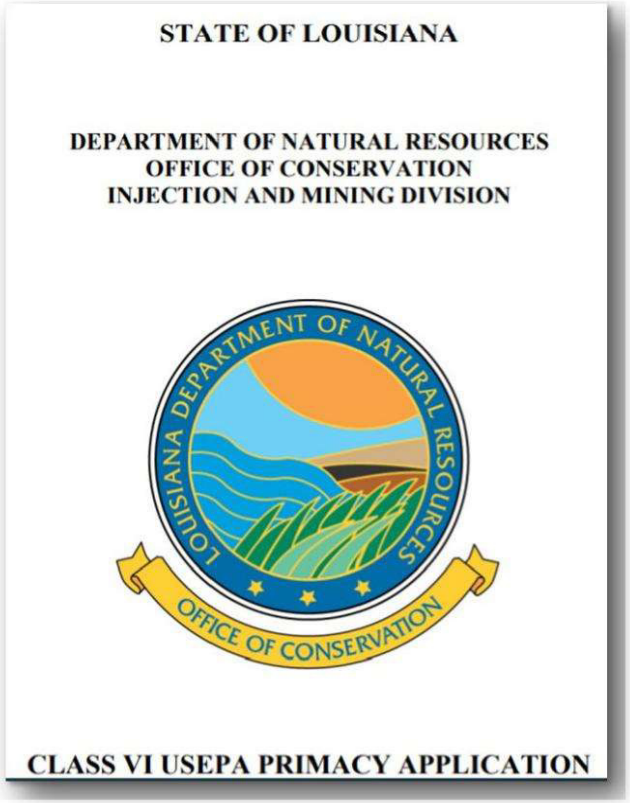
- Estimated at ~802 billion Mt in saline formations and an additional ~4 billion Mt in depleted oil and gas reservoirs.

Geologic storage opportunity

- Assessed low-cost saline storage
- Saline CO_2 storage formation
- Fossil CO_2 storage formation
- \+ Existing petroleum production site

•SOURCE: Great Plains Institute, 2022. An Atlas of Carbon and Hydrogen Hubs for United States Decarbonization.

Louisiana's Primacy Application – GRANTED!



Deep South, et al. v. EPA (5th Cir. 2025)

LOUISIANA WINS!!!!!

First Class VI Permit – *GRANTED!*

- Hackberry Field, Cameron Parish, Louisiana
- September 5, 2025
- 1.5 year permitting process
- Hackberry Carbon Sequestration, LLC (Sempra)
- Drill and operate a single Class VI well in Section 12, Township 12 South, Range 11 West of Cameron Parish
- 10,000+ feet below surface

Class VI Applications – A Pause

- Gov. Jeff Landry placed a moratorium on NEW applications
- The moratorium does not affect pending applications
- The moratorium went into effect on October 15 (Executive Order JML 25-119)
- Gov. stated that the moratorium was put into place in response to various community concerns about CCS projects
- Communication about science and facts about CCS are important in these communities
- Link to the October 15 Executive Order: https://gov.louisiana.gov/assets/ExecutiveOrders/2025/Department-Directive-Order-No-B-2025-01-combined.pdf

Whole-Of-Louisiana Energy Strategy

- Announced on January 22, 2026 by Gov. Jeff Landry
- It is a comprehensive framework to establish Louisiana as a global energy leader by fostering "energy dominance“
- https://www.opportunitylouisiana.gov/news/gov-landry-announces-whole-of-louisiana-energy-strategy-positions-state-to-unleash-energy-dominance-on-a-global-scale
- Whole-of-Louisiana Energy Strategy builds on ongoing efforts to streamline and align state government around shared priorities. LED's **2025 Strategic Plan** and **9×90 Workplan**, alongside the Department of Conservation and Energy's (C&E) new organizational model and strategic framework

Whole-of-Louisiana (con't.)

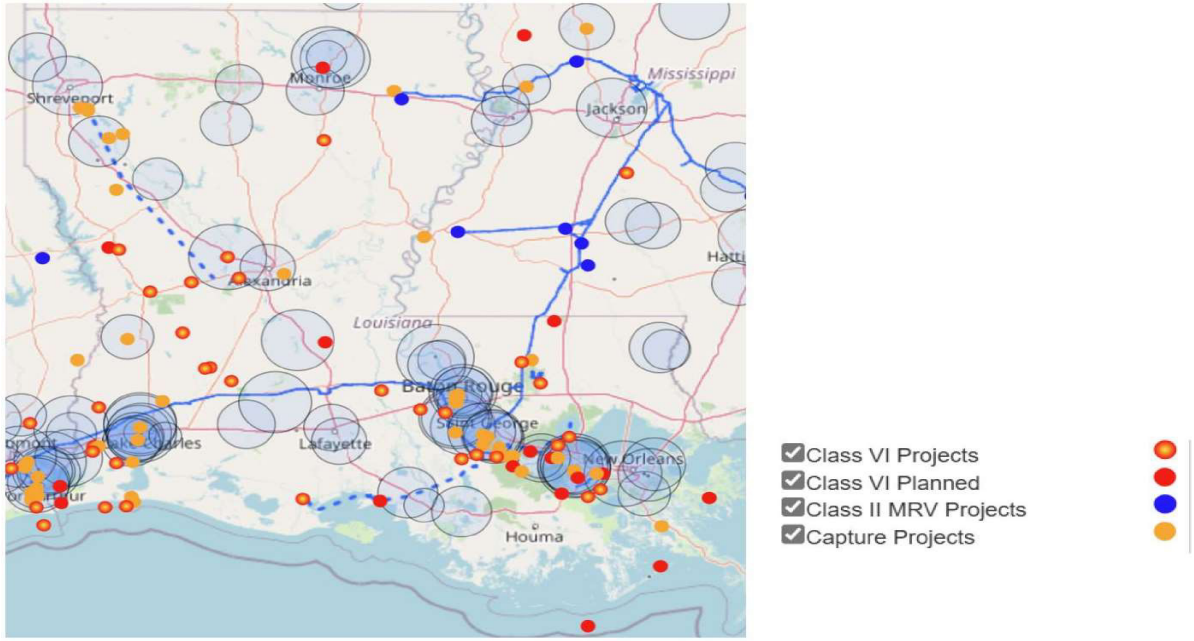
- **Eight Key Priorities:** The plan focuses on expanding the industrial base, attracting global investments, accelerating infrastructure development, delivering strategic energy solutions, streamlining state services, increasing community confidence, fostering innovation, and cementing national industrial leadership.
- **"Louisiana Lightning Speed":** An executive order aims to fast-track permitting and approvals for major energy projects.
- **All-of-the-Above Approach:** The strategy supports traditional oil and gas interests while simultaneously investing in hydrogen, solar, wind, and CO2 reduction initiatives to create a diversified energy portfolio.
- **Regional Focus:** Regional Opportunity Frameworks are utilized to align local infrastructure, workforce, and natural resources with market demands.
- **Regulatory Alignment:** The strategy coordinates state agencies, including the Department of Conservation & Energy (DCE), to provide clearer, more predictable pathways for investment.

ExxonMobil – Recently Announced CCS Project in Louisiana

- Exxon started its first commercial CCS operation in 2025 with CF Industries in Louisiana
- Recently it signed contracts with AtmosClear and Lake Charles Methanol II to transport and store up to 2 mtpa of CO2 emissions cumulatively from their respective projects in Louisiana
- These agreements bring ExxonMobil's CCS client list to six customers representing about 9 mtpa of contracted CO_2
- Companies working with ExxonMobil's CCS business span the power, methanol, steel, ammonia, natural gas processing, and industrial gas sectors. Upcoming projects include a New Generation Gas Gathering natural gas processing facility in Louisiana, as well as projects with Linde and Nucor
- ExxonMobil has also signed an agreement with CF Industries to capture and store up to 500,000 metric tons annually of CO_2 from a plant in Mississippi, with startup expected in 2028.

Technical Perspectives – CCS Development in Louisiana

Louisiana CCS/EOR



LSU Applied Test Beds for CO2 Management

- PERTT Lab (PL-1): On-campus CO_2 vertical flow loop for training and technology validation
- Lockhart Crossing (PL-2): Active CO_2 EOR project in Wilcox sands, Livingston Parish
- Inland Waters Fields: Garden Island Bay, East Bay, and others positioned for CO2 EOR and storage transition
- Combined: LSU's "triad" of assets positions Louisiana as the national hub for applied CO2 testing

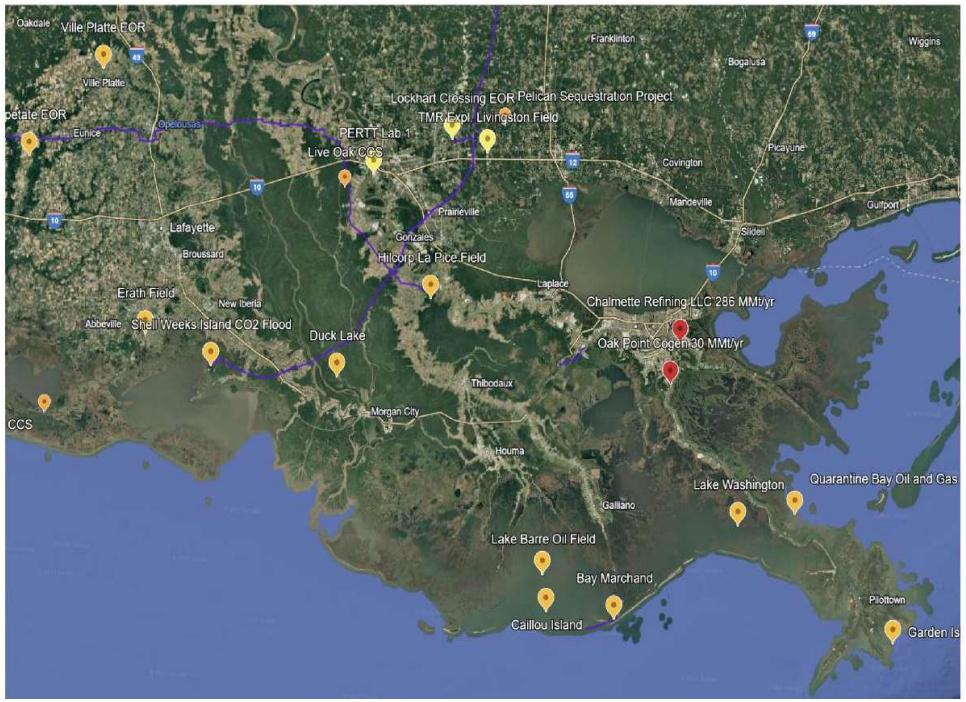
PERTT Lab at LSU

Lockhart Crossing CO2 Recycle Facility – Livingston Parrish

Lockhart Crossing: Bridge to Class VI

- Operating as a live CO_2 EOR project under Class II framework
- Key data streams: injectivity, retention, corrosion monitoring, well integrity
- Directly informs Class VI permitting (AoR, plume modeling, MMV protocols)
- Provides a low-risk, lower-cost proving ground ahead of large-scale saline storage projects

Lockhart Crossing CO_2 Injection Wells

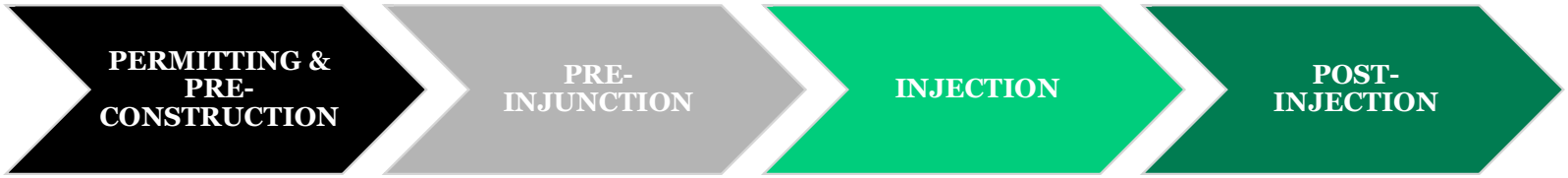


Inland Waters:

- Louisiana's Strategic Advantage
  - State-water oil fields uniquely suited for CO_2 EOR and long-term storage
  - Pathway: near-term oil recovery with eventual transition to storage hubs
  - Supports Louisiana's primacy and 45Q parity while de-risking investment
  - Distinguishes Louisiana by leveraging inland water reservoirs as scalable CCS testbeds

Permitting & Community Engagement– CCS Development in Louisiana

UIC Class VI Projects: Primary Stages



2 to 4 years
- Site Characterization
- AoR Modeling
- Corrective Action Planning
- Well Design
- Regulatory Review
- Test Well Construction
- Permit to Construct/ Convert

1 to 3 years
- Injection Well Construction or Conversion
- Baseline T&M
- Permit Updates with Site-Specific Data
- Regulatory Review
- Public Notice

3 to 50 years
- Operating Data
- Testing and Monitoring (T&M)
- AoR Reevaluation *(every 5 yrs)*
- Emergency & Remedial Response
- Reporting
- Permit Modifications
- Incentive Verification (45Q, LCFS)
- Potential Litigation Disputes

50 to 100 years
- Injection and Monitoring Well Plugging
- Post-Injection T&M
- Emergency and Remedial Response
- Non-Endangerment Demonstrations
- Potential Litigation Disputes
- Site Closure

Permitting Considerations . . .

- All Class VI permit applications will be reviewed by LDENR staff and issued in accordance with La. Admin. Code tit. 43, § XVII, Subpart 6 (Statewide Order 29-N-6)
- Permit application form to be used by owner/operator will be Form UIC-60 CCS
- Must be used for initial permit submitted as well as the permit re-evaluation
- La. Admin. Code tit. 43, § XVII *et seq.*
- When LDENR receives a permit application, the staff will review it to determine if it contains all the information required by La. Admin. Code tit. 43, § XVII.3605-3611
- A computational model of the CO2 plume will be the foundation for seeking a permit
- Any deficiencies in the application will be noted and, if necessary, the LDENR will request additional information from the applicant.
- After confirming that all of the required information has been submitted with the permit application, the LDENR staff will review the Class VI permit application using a multi-step process.

Permitting continued

- First, staff will perform a technical review to determine that the submitted data is accurate and of high quality (for example, has undergone appropriate quality assurance, is representative of the project and the site, and is sufficiently complete to support a full technical evaluation).
- Next, the staff will conduct a full technical evaluation of the information submitted to ensure the suitability of the site per the requirements at La. Admin. Code tit. 43, XVII.3615.
- This technical evaluation will include an evaluation of the geologic system (La. Admin. Code tit. 43, XVII.3615), the well (La. Admin. Code tit. 43, XVII.3617), and the proposed operations (La. Admin. Code tit. 43, XVII.3619) to ensure that the project will be protective of drinking water supplies as well as the health, safety, and welfare of the public.
- LDENR staff will discuss the application with the owner or operator to ensure that needed information is provided as expeditiously as possible.

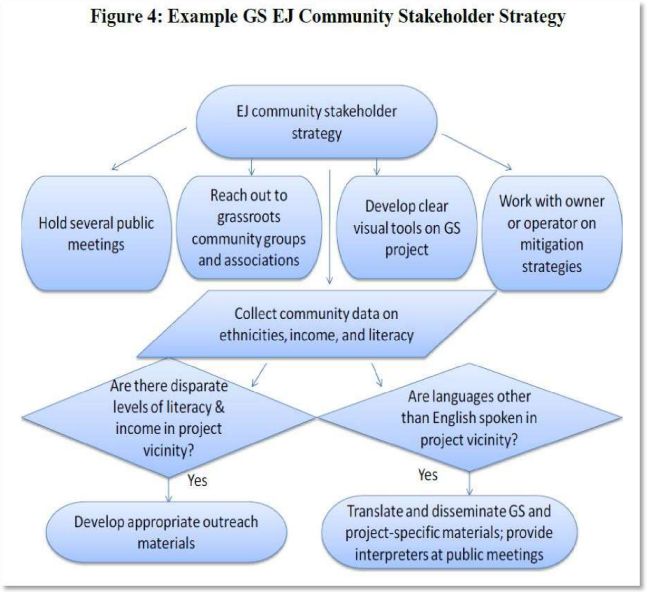
Permitting continued

- Once LDENR completes this review process, it will tentatively determine whether to prepare a draft permit or to deny the application. If the LDENR prepares a draft permit, it also will prepare a fact sheet summarizing the project (La. Admin. Code tit. 43, § XVII.3611.D) and issue a public notice of the comment period and a public hearing according to procedures listed in La. Admin. Code tit. 43, § XVII.3611.E.

- Public notice of the preparation of a draft permit must allow at least 30 days for public comment. During the public comment period, any interested person may submit written comments on the draft permit and may request (in writing) a public hearing. Public notice of a hearing shall be given at least 30 days prior.

- All relevant comments will be considered in making the final decision and will be addressed when a permit is issued or denied. After completion of the public hearing and review of public comments, a final permitting decision will be made and, where appropriate, a Class VI permit will be issued. The permit will authorize the applicant to construct the injection well or convert an existing well to Class VI.

Public Engagement Strategies



- Enhance community engagement and implement an inclusive public participation process. **START EARLY!**
- Make community outreach an ongoing process, even during operations.
- Consider having a dedicated community engagement person.
- **Identify Challenges:** language barriers, lack of technical resources or transportation, cultural barriers, or inability to attend public meetings.

Public Engagement Strategies

Examples of Outreach Measures and Groups:

- Religious organizations (e.g., churches, temples, ministerial associations);
- Newspapers, radio and other media, particularly media targeted to low-income populations, minority populations, or Indian tribes;
- Civic associations;
- Minority business associations;
- Environmental and environmental justice organizations;
- Legal aid providers;
- Homeowners', tenants', and neighborhood watch groups;
- Federal, state, local, and tribal governments;
- Rural cooperatives;
- Business and trade organizations;
- Community and social service organizations;
- Universities, colleges, vocational and other schools;
- Labor organizations;
- Civil rights organizations;
- Local schools and libraries;
- Senior citizens' groups;
- Public health agencies and clinics; and
- The Internet and other electronic media .

- Identify resources that will facilitate the understanding of potential impacts:
  - Site visits, visual tools, communication materials in multiple languages, newspaper advertisements, radio, mailings, emails, posted flyers, social media, community meetings.
- The participation of diverse groups in the permitting process is necessary for full consideration of the potential impacts of a proposed Class VI project.
- USDOI EJ Training Modules:

  https://www.doi.gov/oepc/resources/environmental-justice/training

Louisiana Legislative Overview from 2025 (State & Federal)

Louisiana Geologic Sequestration of Carbon Dioxide Act

- Act 517 of 2009
- Created a comprehensive legal framework governing geological storage in Louisiana.
- Establishment of a regulatory program for the control of injection, storage, and use of carbon dioxide under the auspices of the Office of Conservation within the Department of Natural Resources.
- Establishment of liability limits for operators with transfer of liability for storage operations to the Geologic Storage Trust Fund (run by the state) after a specified time.
- Authority for expropriation of pipeline servitudes, storage facilities and other associated facilities necessary for carbon sequestration operations upon a determination of public convenience and necessity.
- 2020 Legislative Session - Act 61 revised several portions of La. GS Act, which among other things separated CO2 pipelines from the injection portion of a geologic storage facilities for regulatory purposes.

Legislation – 2025 Session

- Fiscal session
- 20+ bills relating to CCS were pre-filed
- Most were killed in Committee (House Natural Resources)
- HB 601 (Geymann) – Rollback pipeline expropriation laws
- HB 568 (Carrier) – Safety and accountability regarding CCS projects
- SB 73 (Reese) – Substantial consideration given to local govt. comments

Act 458 (Senate Bill No. 244)

- Governor Jeff Landry signed Senate Bill No. 244 into law on June 24, 2025
- Significant updates for CCS projects in Louisiana
- 227-page bill (lots to unpack!)
- Provides several updates to the Louisiana Geologic Sequestration of Carbon Dioxide Act (Louisiana Revised Statutes 30:1101 *et seq.*)

Act 458 (Senate Bill No. 244) – Con't.

1. a complete reorganization of the Louisiana Department of Energy & Natural Resources (LDENR) into the newly-minted "Louisiana Department of Conservation & Energy (LDCE)" (this will go into effect Oct. 1);

2. certain restrictions on pipeline operators using eminent domain laws for new pipelines (pipeline operators must now show a "reasonable probability that the pipeline will serve the public" i.e., they will need to operate as a "common carrier");

3. the unitization legislation passed in the 2024 Session now requires 85% landowner approval for project acreage instead of the original 75% (that was passed last year); and

4. more notice requirements for applicants of Class VI and Class V wells (applicants must now do a "reasonable search" for last operator of record, all mineral servitude owners, mineral lessees, contract operators, all surface owners, etc. and send notice of the submission of the application to all via certified mail).

HB 304 – Venue for CCS Expropriation

- Sponsored by Reps. Robby Carter and Charles Owen
- Now, Act 179
- Requires that the venue for CCS expropriation cases be filed in the parish where the property is located

HB 691 – Safety Requirements

- Sponsored by Rep. Dewith Carrier
- Now Act 397
- Any person found by the commissioner to be in violation of any requirement of this law may be liable for a civil penalty to be assessed by the commissioner or court, of not more than **two hundred thousand dollars a day** for each day of violation and for each act of violation.

HB 691 – Safety Requirements (Con't.)

- At a minimum, the owner or operator of a permitted Class VI well shall provide a report within twenty-four hours of the occurrence of any of the following:
  - Any equipment malfunction that could lead to the release of stored carbon dioxide.
  - Any release of stored carbon dioxide.
    1. The precise location of the incident.
    2. A description of the incident, including its cause, when possible.
    3. Potential risks to public health, water sources, and land stability.
    4. Immediate mitigation steps taken in response.
    5. A timeline for corrective action.

One Big Beautiful Bill Act

One Big Beautiful Bill Act (OBBBA)

- On July 4, 2025, President Donald J. Trump signed into law the OBBBA, and, with it, reaffirmed bipartisan support in the United States for CCS by preserving–and in some cases strengthening–the federal Section 45Q tax credit for CCS projects. This was a welcome development as some had feared that the OBBBA might do away with tax credits for many energy programs and projects.

OBBBA – Con't

- The law maintains the 45Q tax credit for point-source capture at $85/ton and direct air capture (DAC) at $180/ton in dedicated geologic storage;
- The law keeps transferability and keeps the inflation adjustment date of 2027 with a base index year of 2025;
- The 45Q tax credit now also includes parity for the utilization of carbon dioxide (CO2)—withdrawing or using CO2 for other purposes. CO2 used or converted into valuable products or injected and geologically stored in a qualified enhanced oil recovery or natural gas recovery project site will qualify for the same dollar value credit as CO2 that is permanently sequestered in a dedicated geologic storage site; and
- The new law also introduces certain restrictions for Foreign Entities of Concern, including China, Russia, North Korea, and Iran.

45Q Tax Credit Increase Under IRA

	2018 BBA 45Q Credit	2022 IRA 45Q Credit
QCO Captured by Industrial Facility (Non-E0Rinon-utilized)	$50/MT	$85/MT
QCO Captured by Industrial Facility (Used in EOR/utilized)	$35NT	$60/MT
QCO Captured by DAC (Non-MR/non-utilized)	$50/MT	$180/MT
QCO Captured by DAC (Used in EORiutilized)	$35/MT	$130/MT

45Q Tax Credits - Comparing the IRA (2022) with the One Big Beautiful Bill Act (2025)

- **$85/ton:** From point source > Geologic storage (IRA)—stayed the same in OBBBA
- **$180:** Direct air capture > Geologic storage—stayed the same in OBBBA
- **$60:** Point source > Utilization / GS with enhanced recovery— increased the amount of credit in OBBBA to $85: Point source > Utilization / GS with enhanced recovery
- **$130:** DAC > Utilization / GS with enhanced recovery—increased in OBBBA to $180: DAC > Utilization / GS with enhanced recovery

Termination of DOE Grants

- DOE withdrew more than **$3.7 billion** in commitments for projects involving carbon capture, decarbonization, and hydrogen.
- **Termination provisions** — These clauses spell out the conditions under which DOE may end an award. Unless the award explicitly allows termination for convenience or a change in policy, DOE's authority to cancel is limited. Courts have found that such rights must be clearly stated to be enforceable.
- **Audit clauses** — DOE retains authority to review performance, compliance, and use of funds. This power is often exercised before a termination decision.
- **Closeout procedures** — Once a grant is ended, recipients must complete final reporting, reconcile allowable costs, and address the disposition of funded property or intellectual property rights.

DOE Grants – Con't.

- Recipients subject to this review process should expect heightened scrutiny of milestones, budgets, and performance reporting. Where projects have been halted, DOE requires a formal closeout, even if substantial work has already been completed.
- Informal dispute resolution – Procedure to dispute termination:
  - Submit a written response to the termination notice, including factual and legal arguments.
  - Request meetings with DOE officials to address specific concerns or compliance issues.
  - Propose revised project timelines or deliverables as an alternative to termination.

DOE Grants – Con't.

- Recipients should compile the full award package, all DOE communications, financial records, and evidence that milestones were met or substantial progress achieved.
- If administrative engagement does not resolve the matter, judicial review may be an option. Potential claims include:
  - **Breach of contract** — Arguing DOE acted outside the terms of the award.
  - **Failure to follow required procedures** — If notice and opportunity to respond were inadequate.
  - **Reliance damages** — Seeking recovery for investments made in reasonable reliance on DOE funding commitments.

DOE Grants – What To Do Now

- For organizations affected—or at risk of being affected—by DOE grant cancellations, timely action is essential:
  - **Analyze the award agreement** — Pay special attention to termination, dispute resolution, and audit provisions.
  - **Document compliance and performance** — Maintain clear records of deliverables, expenditures, and DOE interactions.
  - **Initiate dialogue with DOE** — Early, constructive engagement can preserve flexibility and position the recipient for a negotiated outcome.
  - **Preserve legal options** — Administrative challenges and court actions often depend on documentation assembled early in the process.
  - **Stay informed** — DOE's review policies and enforcement approaches continue to evolve.

Thank You

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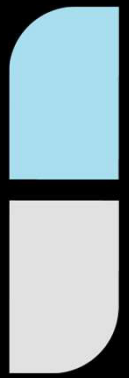

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