

EXECUTIVE SUMMARY AUGUST 2026

Challenges for People and Planet in the Carbon Capture Buildout

Climate Impacts, Community Harms, and the Gulf South Epicenter



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Executive Summary

Carbon dioxide (CO₂) capture, utilization, and storage (CCUS) was first deployed commercially at scale in the natural gas processing sector in the 1980s, long before scientific and public concerns about climate change started to gain traction in U.S. energy policy. Since then, CCUS has seen only limited commercial growth, and nearly all of the CO₂ captured to date has been used for enhanced oil recovery (EOR), where it is injected into depleted or unconventional (“tight”) reservoirs to enable extraction of otherwise inaccessible oil deposits.

Today, however, CCUS is poised for expansion like never before, due in large part to generous federal tax credits, with most of the projects proposed or under development being targeted for secure geologic sequestration instead of EOR. Importantly, the CCUS buildout today reflects a two-decade effort to refashion carbon capture as a way for fossil fuel producers and users to reduce—or claim to reduce—their associated greenhouse gas emissions without gross reductions in fossil fuel extraction, combustion, and chemical conversion. As stated upon the release of the inaugural report of the Obama Administration’s Interagency Task Force on Carbon Capture and Storage, in 2010, CCUS “can play an important role in domestic greenhouse gas emissions reductions while preserving the option of using coal and other abundant domestic fossil energy resources.”¹ Not surprisingly, the throughline from CCUS as a niche, instrumental technology for extracting more oil from depleted or unconventional reservoirs to today’s expansive CCUS buildout for secure sequestration is political support from the fossil fuel industry. For example, between 2005 and 2024, approximately 77 percent of nearly \$1 billion in spending on lobbying activities associated with CCUS was reported by fossil fuel corporations or directly associated businesses such as the investor-owned utility behemoth, The Southern Company.²

At this critical turning point in CCUS development, the risks it poses to both climate change and the communities where CCUS operations are likely to be sited are largely hidden from the public behind a misleading and unrealistic story about the benefits of and the need for CCUS. This story has detrimentally molded federal policy over the last two decades and could open the floodgates to new federal subsidies flowing to fossil fuel corporations and associated businesses in the petrochemical, industrial, and power sectors. However, the specter of taxpayers footing the bill for CCUS, while generally problematic from a public interest perspective, is all the more troubling given the potential harms and risks of CCUS in the communities where much of the

1 The White House. (2010, August 12). [Federal Task Force Sends Recommendations to President on Fostering Clean Coal Technology](#) [Press release].

2 Gulden, L. E., & Harvey, C. (2025). [Tracing sources of funds used to lobby the US government about carbon capture, use, and storage](#). *Environmental Science & Policy*, 171, 104171.





buildout is currently targeted for development. Specifically, a large number of projects and many of the largest projects are targeted for the Gulf South region, particularly Southeast Louisiana and Southeast Texas, where existing cumulative impacts of fossil fuel and petrochemical development already include significant health disparities affecting residents of these industrialized regions.³

In taking stock of CCUS development in the United States as of 2026, three main threads of analysis help to clarify what is unfolding. The first is to profile and assess the current crossroads and momentum for CCUS development at the project level and to excavate the policy history behind this major shift. The second is to lay out in some detail both the “climate case” and the “community case” against CCUS, with the troubling implication that taxpayers’ dollars are being used to cause more harm than good in both cases. The third is to put a spotlight on the CCUS buildout in the Gulf South region, which is a targeted area for carbon capture development in connection with the fossil fuel and petrochemical industries; specific striking cases illustrate how a misguided climate solution is also putting the communities in its path at further risk.

In broad contours, the potential buildout of CCUS appears as follows: Of 925 new fossil fuel facilities or facility expansions proposed or under construction, as inventoried in the Oil & Gas Watch database (see footnote 3 on project databases in the main report), 177, or 19 percent, involve CCUS, which reflects a more than 12-fold increase as compared to the number of CCUS projects operating as of 2023.⁴ Further, of the CCUS-involved projects currently proposed or under construction across the United States, 64, or about 36 percent, are sited in Louisiana and another 27 percent in Texas. Nearly half of the projects across Louisiana and Texas are already permitted or have permits pending. In addition, the two states are home to 14 proposed new or expanded CO₂ pipeline projects.

The policy history behind today’s emerging CCUS buildout primarily revolves around the introduction and development of federal tax subsidies under Section 45Q of the Internal Revenue Code, enacted in 2008. Pivotal, the 45Q tax credit program was enhanced in three successive budget bills, in 2018, 2022, and 2025, with the most significant changes introduced in the Inflation Reduction Act of 2022. The 45Q tax credit program is the most important policy driver of CCUS development, but several key additional policy elements

3 Juhasz, A. (2024, January 25). *“We’re Dying Here”: The Fight for Life in a Louisiana Fossil Fuel Sacrifice Zone*. Human Rights Watch; Bullard, R. D., Powers, L. T., Yoder, N., King, D., & Johnson, G. S. (2025). *Green Light to Pollute: Proposed Buildout of Petrochemical Facilities Targets Most Vulnerable Communities, Again*. Bullard Center for Environmental and Climate Justice.

4 According to the Global CCS Institute, as of 2023 there were only 14 operating/ongoing CCUS projects in the US, all but two of which are targeted for EOR. See Global CCS Institute. (2023). *Global Status of CCS 2023*.

remain unresolved, including long-delayed CO₂ pipeline regulations from the Pipeline and Hazardous Materials Safety Administration; new regulations (required under the Infrastructure Investment and Jobs Act of 2021) for leasing and operations of offshore CO₂ sequestration wells in federal waters and primarily in the Gulf of Mexico; and state efforts to obtain “primacy”—primary regulatory enforcement authority—over CO₂ storage infrastructure permitting and operations. This report does not analyze the different policy scenarios that may result from these ongoing regulatory developments, but these regulations will impact CCUS project outcomes, especially given that the stringency of rules for CO₂ transport and storage could affect the costs of CCUS projects.

As alluded to above, on the scale reflected in the project development data, the Gulf South CCUS buildout threatens to compound and deepen environmental injustices that have taken root over decades of fossil fuel and petrochemical development and production in the region.⁵ Now, carbon capture is adding yet another layer of development and further adverse impacts to this ongoing legacy of environmental injustice and ecological harm.

The potential harms of CCUS, from both climate and community perspectives, are clear. Most critically, the potential CO₂ emissions reductions at the facility level do not account for additional “upstream” GHG emissions, such as methane leakage, across the fossil fuel production supply chain (including extraction, processing, and transport), and whether the fuels are ultimately used for energy or chemical conversion. This point is particularly important when considering how the 45Q credits may encourage more fossil fuel combustion or chemical conversion because they are allocated on a per ton basis of stored CO₂—that is, CCUS generates more credits if there is more fossil fuel usage and more resulting CO₂ emissions to be captured, for example by increasing the capacity factor (operational capacity and running time) of a natural gas-fired power plant. Moreover, with CCUS, upstream emissions increase because additional fuel is typically needed to power the capture operations.

In most cases, carbon capture also does not reduce a given facility’s “downstream” emissions of health-damaging air pollutants, such as nitrogen oxides, carbon monoxide, and fine particulate matter. Downstream emissions are actually likely to increase due to the additional fuel combustion required to power the capture equipment. Further, CCUS can produce ammonia emissions from the degradation of amine solvents used to absorb and remove CO₂ from facility flue gas streams. The potential for ammonia emissions with CCUS is worth considering because ammonia is a powerful precursor to fine particulate matter, the most dangerous common air pollutant for human health.

5 Donaghy, T. Q., Healy, N., Jiang, C. Y., & Battle, C. P. (2023). [Fossil Fuel Racism in the United States: How Phasing out Coal, Oil, and Gas Can Protect Communities](#). Energy Research & Social Science, 100, 103104.



While CCUS pollution impacts are a major concern, the health and safety risks associated with CO₂ pipelines and storage infrastructure are no less significant and warrant a level of regulatory stringency and care that may not be embraced in most of the states that have obtained or are currently applying for primacy over CO₂ storage permitting.⁶

With the potential additional pollution impacts of CCUS in mind, it is important to gauge the current “baseline” of greenhouse gas (GHG) emissions and local air pollution in the Gulf South region. Drawing on data from the Environmental Protection Agency’s Greenhouse Gas Reporting Program, Toxics Release Inventory, and Air Emissions Inventories, key findings on Louisiana’s pollution baseline include:

- According to the EPA’s Greenhouse Gas Reporting Program (GHGRP), in 2023, direct GHG emissions in Louisiana totaled 144 million metric tons (MMT CO₂e)⁷ from 403 large facilities (>25,000 metric tons annually). This is roughly 5 percent of total emissions reported for large facilities nationally, as compared with a national population share of 1.3 percent. The state’s GHG-polluting facilities reporting to the GHGRP include 33 power plants emitting 36 MMT CO₂e as well as 320 facilities in three fossil fuel-based subsectors: oil and gas systems (processing, transport, storage), chemicals and fuels (petrochemicals, ammonia, hydrogen, and methanol), and oil refineries.⁸
- Louisiana has a very high concentration of large-facility GHG emissions on a population basis and by land area: 31 metric tons per capita and 2,750 metric tons per square mile of land and water in 2023, as compared to 7.6 metric tons per capita and 38 metric tons per square mile nationally.⁹
- Louisianans are disproportionately exposed to local toxic pollution. According to the EPA Toxics Release Inventory, in the period of 2015–2024, the state had 532 facilities reporting 278 chemicals, or one facility for every 8,650 residents.¹⁰ Cumulative toxic releases over the decade, including air,

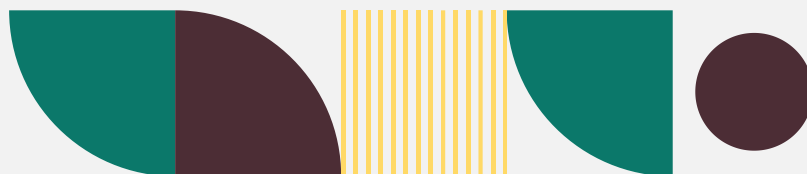
6 In 2024, the Environmental Protection Agency’s grant of primacy to the State of Louisiana was unsuccessfully [challenged](#) in federal court by community organizations represented by Earthjustice. Among other flaws identified by the plaintiffs in the approved primacy application is its waiver of any requirements or liabilities on the part of storage/CO₂ owners/operators for post-closure health and safety monitoring, maintenance, and remediation.

7 “CO₂e” or “carbon dioxide equivalent” is a standard unit of measurement expressing the climate impact of other greenhouse gases as an equivalent amount of CO₂ emissions. For example, nitrous oxide (N₂O) has a 100-year global warming potential 273 times that of CO₂, which means that one ton of nitrous oxide emissions is equal to 273 tons of CO₂e emissions. The point is to be able to calculate all greenhouse gas emissions (of a facility, a sector, a state, etc.) as a single amount of CO₂ emissions.

8 US Environmental Protection Agency, Office of Atmospheric Protection. (2026). Greenhouse Gas Reporting Program (GHGRP): [EPA Facility Level GHG Emissions Data](#). Reporting year 2023.

9 Author’s calculations based on EPA facility level GHG emissions data and United States Census data.

10 US Environmental Protection Agency. (2026). Toxics Release Inventory Program (TRI): [TRI Toxics Tracker](#). Reporting Years 2015-2024.



water, land, and offsite releases, totaled approximately 1.4 billion lb, with an annual average of 30 lb per capita, nearly three times greater than per capita toxic releases nationally over the same period.

In 2024, three of the top 10 and eight of the top 25 most toxic chemicals production facilities in the country, out of 3,401 reporting, were in Louisiana, with combined toxic releases of nearly 60 million lb; formaldehyde releases, in particular, are disproportionately prevalent in Louisiana, at 14.3 million lb in 2024, which is 72 percent of reported formaldehyde releases nationally.¹¹ Notably, in 2024, the EPA released its first comprehensive toxicological assessment of formaldehyde, confirming the long-established scientific view that it is a human carcinogen via inhalation and potentially unsafe even at low levels of exposure.¹²

The CCUS buildout in the Gulf South threatens to compound the cumulative burdens reflected in the baseline data on GHG emissions and local air pollution in Louisiana and Texas. Data reported in state air and coastal-use permitting documents and related technical reports indicate significant potential air quality and community safety risks of CCUS-involved projects in the “Cancer Alley” industrial corridor stretching along the Mississippi River from Baton Rouge to New Orleans in Southeast Louisiana (“SE industrial corridor”). A main focus of this report is the CCUS buildout as proposed for Black-majority areas in Ascension Parish, LA, which is already among the most polluted counties in the United States. In Ascension Parish alone, along a roughly 10-mile stretch of the Mississippi River, the emerging CCUS footprint includes two new CCUS-adapted low-carbon (“blue”) ammonia plants, which are CF Industries’ Blue Point Complex (Modeste), and Clean Hydrogen Works’ Ascension Clean Energy Project (Donaldsonville). On June 30, 2026, it was announced that a third major blue ammonia plant under development in Ascension Parish, Air Products’ Louisiana Clean Energy Complex (Darrow/Sorrento), would not be moving forward, raising significant questions about the economic viability of large-scale CCUS projects in the commercially volatile “clean” chemical and fuel sectors. It also raised questions about CCUS’s political viability, as Air Products and its state and local policy backers faced mounting grassroots resistance from affected community members.¹³ Despite the economic and political concerns, across the SE industrial corridor, three out of four new ammonia plants involving CCUS—the third is the St. Rose Blue Ammonia

11 Louisiana ranked highest among states, by far, for formaldehyde releases, outpacing second-ranked Texas by a factor of 12 in 2024. See US Environmental Protection Agency. (2026). Toxics Release Inventory Program (TRI): [TRI Toxics Tracker](#). Reporting Year 2024.

12 US Environmental Protection Agency, Integrated Risk Information System. (2024). [IRIS Toxicological Review of Formaldehyde \(Inhalation\) \(Final Report 2024\)](#). With this report, the EPA set the stage for regulating formaldehyde based on the “linear” assumption of no safe level of exposure. But in 2025 the Trump Administration rejected this precautionary approach in favor of “threshold” regulation, allowing industry to effectively pre-empt potentially stringent new limits, including workplace restrictions, or even bans, on using formaldehyde in the production of a wide range of consumer goods. See Tabuchi, H. (2025, December 10). [Starting With Formaldehyde, Trump Administration Reassesses Chemical Risks](#). The New York Times.

13 Muller, W. (2026, July 2). [Scrapped Air Products Project Could Signal Stiffer Headwinds for CO₂ Storage](#). Louisiana Illuminator.



facility in St. Charles Parish, toward the south end of the SE industrial corridor—are expected to be operational by 2030. According to their approved or pending air permits, the three new blue ammonia facilities, taken together, have permitted emissions including approximately:

- 989,000 tons per year of CO₂ emissions.
- 1,822 tons per year of criteria air pollutants and volatile organic compounds.
- 379 tons per year of toxic air pollutants.¹⁴

With the CCUS buildout in Ascension Parish, the question of combined and cumulative pollution impacts in communities subjected to intensive industrial development over time is sharply underscored: Ascension Parish is already home to CF Industries Nitrogen in majority-Black Donaldsonville—now operating for six decades, significantly expanded in 2016, and the source of GHG emissions and toxic chemical releases that place it among the most polluting facilities of its kind in the US and perhaps in the world. It is also the first large-scale chemical production facility in the US to retrofit with CCUS, thus anchoring the broader CCUS buildout—and blue ammonia footprint—in Ascension Parish and the wider region.¹⁵

As the Ascension Parish buildout illustrates, with the added point-source pollution and infrastructure-related health and safety risks, as well as the fiscal costs (and potential opportunity costs) and the probably small or possibly negative climate impacts, CCUS is, in this case and likely many others, clearly a “false solution” in the climate crisis—as many community advocates have argued.¹⁶ At a minimum, taxpayers should not be subsidizing CCUS because there is legitimate doubt about its climate benefits and justifiable concerns about the added pollution and health and safety risks facing the communities that lie in its path.

14 Louisiana Department of Environmental Quality (2025, October 17). [CF Industries Blue Point LLC Proposed Part 70 Air Operating Permit No. 0180-00237-V0 & PSD Permit No. PSD-LA-859](#); Louisiana Department of Environmental Quality. (2025, October 16). [Clean Hydrogen Works Ascension Clean Energy Project Part 70 Operating Permit No. 0180-00235-V0](#); Louisiana Department of Environmental Quality. (2025, November 17); [St. Charles Clean Fuels LLC-Blue Ammonia Facility Minor Source Permit No. 2520-00187-00](#).

15 Bush, T. (2025, September 7). [CF Industries Flips Switch on Massive CCS Hub That Changes Everything](#). decarbonfuse.

16 Center for International Environmental Law. (n.d.). [Over 500 Organizations Call on Policymakers to Reject Carbon Capture and Storage as a False Solution](#). The letter from the groups, published in The Washington Post, is [here](#).

