

Carbon Capture Is Iowa's New Problem Pipe Dream

Iowa is the latest state to be dragged into a fight over pipelines, under the guise of a false climate solution: carbon capture and sequestration/storage (CCS). Proponents claim CCS is key to boosting Iowa's ethanol market while benefiting Midwestern landowners.¹ In reality, CCS is another scheme to generate corporate pipeline profits at taxpayer expense, while landowners face land damages and threats to their health and safety from pipelines crossing their land.²

One proposed pipeline is Summit Carbon Solutions' Midwest Carbon Express, a \$4.5 billion, 2,000-mile pipeline that would impact over 8,777 acres in Iowa alone.³ A second is Navigator CO₂ Ventures' \$3 billion, 1,300-mile pipeline with a misleadingly homey name, Heartland Greenway — which would cross 900 miles of Iowa.⁴ A third proposal is a joint 350-mile pipeline put forward by Wolf Carbon Solutions and Archer Daniels Midland (ADM).⁵

The pipelines would transport carbon dioxide (CO₂) gas generated primarily from ethanol plants throughout the Midwest for underground storage in North Dakota and Illinois.⁶ Captured carbon is also used for enhanced oil recovery (EOR), an oil production method that injects the gas into oil reservoirs to drive the crude oil to the surface. The primary goal of EOR is to maximize oil production, not to store carbon. Summit Carbon is said to still be considering EOR, leaving the door open for a dangerous polluting practice with a big price tag.⁷

Landowners Lose Out

Without full landowner approval, pipeline construction requires use of eminent domain, where private land is seized for use by, in this case, private corporations. As of the time of writing, more than half of the counties along the route of Summit's pipeline had filed objections, and legislation introduced in Iowa's legislature would ban eminent domain for CO₂ pipelines for one year.⁸ Communities in the pipeline's path are rightly concerned, both about the corrupt seizure of property and about the disastrous implications for agriculture.

With roughly 8,000 acres of cultivated crop land at risk from the pipelines, Iowa landowners can anticipate disruptions and harms to their land like those brought by the construction of the Dakota Access Pipeline (DAPL).⁹ The DAPL reduced crop yields along its route by 25 and 15 percent for soybeans and corn, respectively, two years following construction, and even smaller pipelines caused similar declines up to four years later. Impacted soils contain increased rock fragments and have lower soil moisture and higher compaction, inhibiting crop growth.¹⁰ Land repair is not

cheap — one landowner still has persistent drainage problems radiating outward from the DAPL, costing him over \$100,000.¹¹

Despite promises by Summit Carbon to engage Indigenous communities in project development, local Indigenous leaders worry that the pipeline may still threaten their waterways and resources.¹² Pipelines can do irreparable damage to ancestral lands that hold cultural, historical and religious significance. Despite this, few culturally oriented assessments of pipelines exist.¹³

Safety Questions Linger

Harms are not limited to stolen land and damaged crops. CCS infrastructure poses numerous health and safety risks from carbon leaks during transport, injection and long-term storage.¹⁴ Pipeline accidents resulting from human error, natural disasters and material corrosion are all but inevitable.¹⁵ Accidents could release large quantities of dense CO₂, which accumulates and remains undetected in low-lying areas like basements.¹⁶ Air with CO₂ concentrations of 17 percent or more is immediately fatal, and even trace amounts can have health effects. Extreme accidents could have impacts up to two miles away.¹⁷

Historically, pipelines have been concentrated in areas of high social vulnerability, including rural areas lacking emergency response capacity.¹⁸ When a CO₂ pipeline ruptured in rural Satartia, Mississippi in February 2020, it took 13 minutes for responders to be alerted, 30 minutes to recognize what was in the air, but mere minutes for residents to feel the effects. Fortunately, no one died, but some residents are still experiencing respiratory health effects today.¹⁹

Unproven Technology and Shady Climate Accounting

Ethanol production is a key source of revenue for many farmers, and industry groups have strongly promoted it alongside CCS, despite technical barriers and the extravagant land use required for growing the feedstock crops (mainly corn).²⁰ But the writing is on the wall: U.S. demand for ethanol is stagnating, and lifecycle emissions are at least 24 percent higher than gasoline's when accounting for land-use changes. The current system is unsustainable, and continued attempts to stave off ethanol's decline will only increase crop prices, emissions, nutrient pollution, and soil erosion, and further entrench the fossil fuel industry — not mitigate climate change or protect farmers.²¹

Adding CCS to bioenergy is an expensive boondoggle, as capturing the CO₂ from ethanol facilities adds costs to already expensive biofuel technology.²² U.S. biofuels are poorly suited to CCS, as they need substantial inputs relative to the energy they generate. Far from being carbon negative, biofuels' low energy and high moisture content could make the net CO₂ reduction from biogas worse than fossil-fueled CCS.²³

The feasibility of permanent storage is another flawed piece of the puzzle, as long-term stable storage of CO₂ remains largely unproven. Existing storage projects have not been able to prove

that CCS works because underground CO₂ imaging technology is nascent.²⁴ Undetected gas leakages range from 5 to 30 percent, meaning that “captured” CO₂ will find its way into the atmosphere again.²⁵

ADM already knows this. In 2017, the company began capturing carbon from its Illinois ethanol plant. Proponents often point to this as proof of concept, but the plant's dubious track record says otherwise; the facility consistently captures just half of its yearly CO₂ target.²⁶ Biofuels will still emit CO₂ when combusted,²⁷ and the captured CO₂ accounts for a mere 3 percent of ADM's total CO₂ emissions, barely scraping the surface.²⁸ CCS is no miracle solution to mitigating emissions, and we must change course immediately to protect farmers.

Ethanol's Links to Factory Farms

Ethanol is a byproduct of U.S. farm policies that encourage the overproduction of grains like corn. Programs such as federal crop insurance subsidize farm income rather than addressing the true cause of low crop prices (overproduction). The winners are corporate agribusinesses that profit from a steady supply of artificially cheap grains, which they manufacture into ethanol, feed for factory farms and additives for ultra-processed food.²⁹

CCS's ties to factory farms run deep in Iowa. The CEO of Summit Carbon's parent group, Bruce Rastetter, founded one of the fastest-growing hog operations in the United States, forcing out local small livestock farmers, and has used these profits to curry favor with elected officials. Having previously bought his way onto the Iowa Board of Regents, he is now seeking to seize the land of hardworking farmers for his own gain once again, through his political connections to the Iowa Utilities Board (IUB).³⁰

Limited Regulatory Landscape

Unlike for natural gas, CO₂ pipelines are not under the jurisdiction of the Federal Energy Regulatory Commission. Moreover, the Pipeline and Hazardous Materials Safety Administration delegates siting approval to states. Lack of federal permitting requirements means no guarantee of environmental review and no federal oversight of pipeline routes or locations.³¹

In Iowa, the governor-appointed IUB retains control of permitting and eminent domain, which requires public hearings and information sessions prior to approval and construction. However, there is no oversight of voluntary easements, opening the door to harassment of landowners by pipeline companies seeking to circumvent the eminent domain process.³²

Money Talks

If CO₂ pipelines are unproven, inefficient, and downright dangerous, then why build them? While entrenching fossil fuels is a major part of the calculus, companies producing ethanol with CCS can also generate “carbon credits” that they can sell onto state markets for low-carbon fuels; other companies can then buy these credits to offset their own CO₂ emissions. With credits

selling for as much as \$200 in California, money is a big motivator.³³ Corporate giants like Microsoft and John Deere are already lining up to buy ethanol CCS credits to ensure they do not need to reduce their own emissions.³⁴

Federal initiatives further incentivize CCS on the backs of taxpayers. Under the Sequestration Tax Credit known as 45Q, facilities can receive \$50 per metric ton of CO₂ captured, which can be claimed for 12 years.³⁵ Legislators have been trying to push this to \$85 per metric ton.³⁶ Federal estimates suggest that this scheme would only cost \$2.3 billion through 2029, but this vastly underestimates the true cost to taxpayers. Summit Carbon projects it will sequester 12 million metric tons of CO₂ a year, representing a staggering \$7.2 billion over 12 years. ADM and Navigator's proposals would add a further \$16 billion to the bill. Combined, these would surpass the federally estimated cost for the decade within just two years, while sequestering a measly 0.84 percent of U.S. emissions annually.³⁷

Bolstering either credit system would almost certainly cause massive growth in CCS, and corporations would make out like bandits, since most carbon can be transported for under \$32 per ton.³⁸ They know it, too. Rastetter has said Summit Carbon's pipeline would not be possible without federal tax credits to support it, and they estimate that 45Q would account for a fifth of their revenue.³⁹

Conclusion

It is becoming increasingly apparent that CCS is all about propping up a set of polluting but profitable industries. Summit Carbon's board is riddled with political connections, from Rastetter to former Iowa Governor Terry Branstad to the son of U.S. Agriculture Secretary Tom Vilsack.⁴⁰ Navigator takes funding from fossil fuel companies like Valero Energy Corporation and BlackRock, the latter of which helped emit 330 million tons of greenhouse gases in 2020 through their investment portfolio.⁴¹

Keeping communities safe and preventing climate collapse will not come from false solutions that merely keep cogs turning in the fossil fuel and factory farm industries. Every dollar spent on CCS scams is a dollar not spent on the transition to renewable energy solutions.

Food & Water Watch recommends:

- Iowa should ban the use of eminent domain for carbon pipelines in order to protect property owners from having their land seized for the use of private corporations.
- Congress must eliminate public subsidies that support carbon capture and storage development, including the 45Q tax credit and billions in new subsidies for CCS authorized in the Infrastructure Investment and Jobs Act.

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- States and the federal government must instead focus regulatory efforts on eliminating carbon emissions at the source. This includes transitioning to 100 percent clean, renewable energy accompanied by widescale deployment of energy efficiency.

Endnotes

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