

Plans to capture CO2 from coal plants wasted federal dollars, watchdog says

The Biden administration wants to shove more money into projects that are supposed to capture CO2 emissions from power plants and industrial facilities before they can escape and heat up the planet. But carbon capture technologies that the Department of Energy has already supported in the name of tackling climate change have mostly fallen flat, according to a recent report by the watchdog Government Accountability Office.

About \$1.1 billion has flowed from the Department of Energy to carbon capture and storage (CCS) demonstration projects since 2009. Had they panned out, nine coal plants and industrial facilities would have been outfitted with devices that scrub most of the CO2 out of their emissions. Once captured, the CO2 can be sent via pipelines to underground storage in geologic formations.

That's not what happened. The DOE doled out \$684 million to coal six coal plants, but only one of them actually got built and started operating before shuttering in 2020. Of the three separate industrial facilities that received \$438 million, just two got off the ground. Without more accountability, "DOE may risk expending significant taxpayer funds on CCS demonstrations that have little likelihood of success," the GAO says.

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To stop that from happening, the GAO says there ought to be more congressional oversight of DOE-funded demonstration

projects. The GAO report also recommends that the DOE do a better job of choosing which projects to fund and that the DOE should establish more consistent “scopes, schedules, and budgets” for projects.

It’s a critical time to figure all these things out, because CCS projects in the US are about to get a big boost. In November, Congress passed a bipartisan infrastructure bill that included \$2.5 billion for CCS demonstration projects. It also includes another \$6 billion for large-scale CCS projects and pipelines to transport CO₂ to storage sites. Altogether, the new infrastructure law marks the largest investment in carbon capture and storage in the history of the technology, according to the think tank Global CCS Institute.

More money could be on the way if Democrats successfully push through their budget reconciliation bill, a \$1.75 trillion environmental and social spending package. The bill could increase tax incentives for carbon capture technology, giving power plants outfitted with it a maximum of \$85 per ton of CO₂ captured compared to the current \$50 maximum under the current 45Q tax credit. Power plants would need to capture at least 75 percent of their emissions in order to qualify for the tax credit, under the new parameters in the bill. It’s a requirement that some CCS advocates want to eliminate, because they think the high standard could chill investment in the technology.

Investors’ cold feet doomed CCS demo projects at coal plants that the GAO studied, says the Clean Air Task Force. The nonprofit, which supports CCS technology, is one of the groups pushing to get rid of the 75 percent requirement.

“Coal power projects were not great candidates for demo dollars not primarily because of technical issues with the plants but because they couldn’t secure outside investor support,” Lee Beck, international director of carbon capture at the Clean Air Task Force, said in an email to *The Verge*.

Falling natural gas prices and uncertainty around markets for carbon credits “negatively affected the economic viability” of coal plants with carbon capture technologies, the report says. Adding CCS to power plants also increases the cost of electricity production.

Compared to power plants, capturing carbon from industrial facilities – for example, those that make ammonia used in fertilizer – can be more cost effective because they often produce more concentrated streams of CO₂. Because the CO₂ in coal plant emissions is relatively diffuse, carbon capture devices hooked up to coal plants require more energy to run. Beck called the DOE’s spending at industrial sites a “big success” since two of the three projects got up and running.

In comments sent back to the GAO, the DOE said that developing CCS technologies for new coal plants is important because “current trends indicate that globally many new coal power plants will continue to be built in coming decades.” The GAO also says that the US “will need to rely on CCS as an essential mitigation option” for climate change.

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Other environmental advocates are much more skeptical of the technology and say the GAO report only shows that CCS projects are a bad investment. “We should stop deploying hundreds of millions of dollars to prop up the industries responsible for the climate crisis through fantasy technologies like CCS,” Adrien Salazar, policy director at the nonprofit Grassroots Global Justice Alliance, wrote to *The Verge* in an email. “Federal investments for CCS are greenwashing – they are simply fossil fuel subsidies by another name.”

CCS paired with a polluting power plant has yet to be rolled out at a commercial scale, according to the GAO report. For the most part, Salazar points out, the technology has been used by the fossil fuel industry for a process called enhanced oil recovery. Fossil fuel companies shoot captured carbon

dioxide deep into the ground to push out hard-to-reach oil reserves. So critics of CCS say the technology is just a tactic to keep the oil and gas industry afloat even as the world increasingly turns to renewable energy to stave off the climate crisis. Even if the captured CO₂ isn't used for enhanced oil recovery, they worry, the technology might extend the life span of gas and coal power plants.

Development in any new oil, coal, and gas infrastructure needs to completely stop in order to avoid catastrophic climate change, the International Energy Agency warned in a landmark report this year. That's coming from an agency that formed in the 1970s to safeguard the world's oil supply but has more recently heeded urgent calls from the scientific community to eliminate greenhouse gas emissions within a few decades.

<https://www.theverge.com/2021/12/30/22860207/carbon-capture-coal-plants-wasted-federal-dollars-watchdog-gao>