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“Carbon Neutral Oil” Is Promising, But Far From Guaranteed

Some experts say sequestered CO₂, even if it's used for oil production, can help the planet in the short-term. But critics say it prolongs the use of fossil fuels.

[Travis Bubenik](#)



Oil and gas development seen in the West Texas Permian Basin.

Scientists say technology that keeps harmful levels of carbon dioxide out of the atmosphere, even sucking it out of the air, will be an [essential tool](#) in the fight against climate change. But who's going to pay for it?

Ironically, the answer could increasingly be: oil companies. They see “carbon capture” as a way to make money. But that doesn't necessarily mean it's a sure-fire way to save the planet.

The prospect of “carbon-neutral oil” is promising, but it's tricky.

Fossil fuels [contribute](#) to climate change, but oil and gas companies are increasingly billing themselves as part of the solution as well. They talk openly about the [“energy transition”](#) to

cleaner sources like wind and solar. The biggest oil producer in the West Texas Permian Basin, Occidental Petroleum, has even talked about someday becoming [“carbon neutral.”](#)

Oxy executive Charlene Olivia Russell outlined the company’s carbon philosophy at a recent panel discussion in downtown Houston hosted by the Center for Houston’s Future.

“We have a team called Oxy Low-Carbon Ventures now that is solely focused on this activity,” she said. “We believe that many technologies are needed for the world to use to reduce the carbon emissions needed to reach our climate reduction goals.”

Occidental is [planning](#) a massive West Texas facility that would suck carbon dioxide from the air and pump it underground. The carbon, once underground, where it’s meant to stay forever, is used to loosen up oil that might otherwise be too hard to get to. So the company’s project would lead to more oil production.

Some environmental groups say there *is* a net climate benefit from these kind of projects.

“This is a way that we can almost immediately begin putting away, initially, tens of millions of tons a year of CO₂, and as time goes on, ramp that up,” said Scott Anderson with the Environmental Defense Fund.

But here’s the thing about offsetting the carbon footprint of a barrel of oil: it doesn’t necessarily work forever.

“The carbon balance of the operation varies significantly through time,” said Vanessa Nuñez-López, a researcher with the University of Texas’ [Gulf Coast Carbon Center](#) who has [studied](#) this extensively.

Her research shows the process, called “enhanced oil recovery,” does work initially.

“For the first several years of operation, all EOR projects produce net carbon negative oil. Meaning that more carbon is stored, than is emitted,” Nuñez-López said.

But, as time goes on, less carbon gets pumped into the ground, while the oil continues coming out. In other words, you don’t need as much carbon to get the oil after those first several years.

So, as Nuñez-López explains it, eventually the whole “carbon balance” can start to flip.

“The operation transitions from operating under a negative carbon footprint, to operating under a positive carbon footprint,” she said.

But to be clear, Nuñez-López still thinks this technology is a good thing for the planet. She and other experts say the world is going to need fossil fuels for a while, so you might as well chip away at the climate impact in the meantime.

“Time is of the essence,” said Anderson. He argues there’s an urgent need to pump more carbon into the ground.

“We can make sequestration in oil fields happen now, so we ought to do it,” he said.

Still, critics say this all just prolongs the use of fossil fuels. Some environmental groups have [opposed tax credits](#) meant to encourage new oilfield carbon capture, while others take a more nuanced view about the oil industry’s role in fighting climate change.

“Those companies have a responsibility to get us out of this climate mess,” said Adrian Shelley with the advocacy group Public Citizen. “They’re the ones who got us into it.”

Shelley said while he believes there is a benefit to using carbon for oil, his group does not support the idea when the carbon comes from coal plants, as those projects could prolong the life of the coal industry.

Even backers caution this kind of climate solution will only work alongside many other approaches to reducing emissions. And the research suggests it has to be carefully monitored through time to maintain the benefits.