# Carbon capture is not a solution to net zero emissions plans, report says

**The technology, put forward as part of the UK's net zero strategy, could extend the life of fossil fuel infrastructure**

Carbon capture and storage facility in Fort Saskatchewan. Photograph: Todd Korol/Reuters

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Carbon capture and storage schemes, a key plank of many governments' net zero plans, "is not a climate solution", the author of a major new report on the technology has said.

Researchers for the Institute for Energy Economics and Financial Analysis (IEEFA) found underperforming carbon capture projects considerably outnumbered successful ones by large margins.

Of the 13 projects examined for the study – accounting for about 55% of the world's current operational capacity – seven underperformed, two failed and one was mothballed, the report found.

“Many international bodies and national government are relying on carbon capture in the fossil fuel sector to get to net zero, and it simply won’t work,” Bruce Robertson, the author of the IEEFA report, said.

Despite being a technology still in development, carbon capture and storage has been put forward as a key element in the UK’s plans to reach net zero carbon emissions by 2050.

Proposals put forward by the Department for Business, Energy and Industrial Strategy (Beis) suggest that up to 30m tonnes of carbon dioxide emissions will need to be captured and sequestered every year in the UK alone by the mid-2030s, if targets are to be met. Internationally, to align with goals to reach net zero by 2050, annual CCS capacity will need to reach 1.6bn tonnes of CO2 every year by 2030, the International Energy Agency (IEA) has said.

IEEFA’s report said that although carbon capture and storage is a 50-year-old technology, its results have been varied. Most CCS projects have since reused captured gas by pumping it into dwindling oil fields to help squeeze out the last drops, it pointed out.

This “enhanced oil recovery” (EOS) accounts for about 73% of the CO2 captured globally each year, in recent years, according to the report. Roughly 28m tonnes out of the 39m tonnes captured globally, according to its estimates, is reinjected and sequestered in oil fields to push more oil out of the ground.

“EOR itself leads to CO2 emissions both directly and indirectly,” the report said. “The direct impact is the emissions from the fuel used to compress and pump CO2 deep into the ground. The indirect impact is the emissions from burning the hydrocarbons that could now have come out without EOR.”

A further challenge is finding suitable storage sites for carbon sequestration, where the gas will not merely be used to push out more oil. According to the report, trapped CO2 will need monitoring for centuries to ensure it does not leak into the atmosphere – raising the risk of liability being handed over to the public, years after private interests have extracted their profits from the enterprise.

The risk is that CCS technology will be used to extend the life of fossil fuel infrastructure long past the cut off point for maintaining atmospheric carbon at less than catastrophic levels, the report suggested.

“Although [there is] some indication it might have a role to play in hard-to-abate sectors such as cement, fertilisers and steel, overall results indicate a financial, technical and emissions-reduction framework that continues to overstate and underperform,” Robertson said.

However, he added: “As a solution to tackling catastrophic rising emissions in its current framework, CCS is not a climate solution.”

Beis and the IEA have been contacted for comment.