Plans to rely on carbon removal tech spark debate at COP31

Some countries at the COP31 summit are calling to accelerate the deployment of carbon dioxide removal and carbon capture, but critics argue these approaches are unproven at scale and distract from efforts to phase out fossil fuels

By Manuela Callari on November 17, 2026



The Climeworks direct air capture facility in Switzerland. Walter Bieri/EPA/Shutterstock

The world is certain to overshoot 1.5°C of global warming. The question now being discussed at the COP31 climate summit in Antalya, Turkey, is whether we can bring temperatures back down again – and what it would take to do so.

If we remove more carbon dioxide from the atmosphere than we emit, global temperatures should eventually begin to fall. The draft negotiating text welcomes efforts to accelerate the development and deployment of carbon dioxide removal (CDR) and carbon capture, utilisation and storage (CCUS) technologies. It calls for global carbon capture to be scaled up to at least 500 million tonnes of CO_2 by 2035, with a higher ambition of 1.3 to 2.5 gigatonnes annually, particularly in hard-to-abate sectors.

But these technologies have never been deployed at anything approaching that scale, and many environmentalists are concerned that promoting them will undermine efforts to cut greenhouse gas emissions.

CDR approaches range from planting trees to extracting CO_2 directly from the air and burying it underground. Some involve growing crops that absorb carbon, burning them to produce energy

and capturing the resulting emissions. Others aim to increase the amount of CO_2 absorbed by the oceans. CCUS involves technologies that capture CO_2 emissions from industrial facilities and power plants, which can either be used in industrial processes or products or stored underground.

Aakaluk Adrienne Blatchford, an Iñupiaq and Yupik advocate from Alaska and an observer at COP31, says fossil fuel companies have long promoted carbon removal technologies at COP summits as a way of addressing climate change while continuing to extract oil and gas.

There is evidence that the fossil fuel industry has helped shape the scientific discussion around these technologies. An investigation by ProPublica and Drilled found that oil and gas companies have funded climate research at prestigious US universities for over 30 years, supporting work on technologies that could allow continued fossil fuel use. Representatives from these industries have found ways to participate in climate negotiations at COP meetings.

At this year's summit, Blatchford has noticed a particularly visible presence of carbon brokers. "When you walk around the pavilions and you see the amount of carbon brokers, it becomes clear how much commercial interest surrounds the proposed solutions," she says.

An analysis released on 16 November by the Center for International Environmental Law reveals that a record 700 CCUS lobbyists are at COP31, including 45 who are part of national delegations, potentially granting them privileged access to the talks. The CCS lobbyist presence at the talks has never been higher: it exceeds the combined total of delegates from the smallest 50 national delegations, according to the analysis.

Whether references to these technologies will survive negotiations over the final COP31 agreement remains uncertain. According to Blatchford, Brazil, Denmark, the EU, Saudi Arabia and the UK are the key players pushing for CDR. Small island developing states, Germany, Kenya and Mexico seem to object to relying on these technologies, she says.
Her main concern is that the promise to remove carbon later could undermine efforts to stop emitting it now. "CDR is just another way for them to keep doing business as usual and put us on the back burner," she says.

The scientific evidence supporting CDR technologies is growing but not yet robust. "Questions remain about how much additional atmospheric CO_2 might be removed and stored durably, and what ecological harms might arise," says James Kerry, a marine biologist at conservation group OceanCare.

"We need to recognise that some proposed approaches may face scientific and practical limitations that field research cannot overcome," says Kerry. For example, a recent study on ocean fertilisation argues that even large experiments won't resolve the uncertainties surrounding the net atmospheric carbon removal and downstream ecological impacts associated with this technology. "This is precisely why a precautionary approach is so important. Further research does not necessarily mean that fundamental uncertainties will be resolved, nor that a proposed intervention will ultimately prove feasible or desirable," says Kerry.

Climate scenarios assessed by the Intergovernmental Panel on Climate Change envisage storing up to 6 gigatonnes of CO_2 underground each year by the middle of the century. But the amount of CO_2 we can currently remove from the atmosphere and permanently store is less than the amount a single, large fossil fuel power plant emits in a year.

Kwami Dodzi Kpondzo, a climate campaigner based in Togo and an observer at COP31, is particularly concerned about bioenergy with carbon capture and storage. This involves growing plants, burning them for energy and capturing the CO_2 for underground storage. To remove substantial amounts of carbon, vast areas could be needed to grow the biomass. “They need a huge amount of land,” says Kpondzo. “It means community displacement, forest grabs and livelihood destruction.”

Converting agricultural land into biomass plantations, he says, could reduce food security, while irrigation and fertiliser used to grow the biomass could put further pressure on water supplies and ecosystems, and lead to biodiversity loss.

Blatchford raises similar concerns about the potential impact on Indigenous peoples, particularly where carbon removal projects compete for land and water. “We still practise our way of life and we still steward our homelands in a way that we always have,” she says.
None of this means reversing global warming is physically impossible. But it does mean that the amount of warming we could eventually reverse depends heavily on how quickly emissions fall in the first place. “There are a lot of things that we could stop doing to drop emissions,” says Blatchford. “First and foremost, stop burning fossil fuels.”