Real Zero Europe
Frequently Asked Questions

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Road to Nowhere

CCS and CDR technologies won't deliver for the climate

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Carbon capture and storage (CCS) has long been used by the oil and gas industry as a smokescreen to maintain and expand our reliance on fossil energy. Whilst peddled as a potential solution to climate-changing emissions in the energy, industrial, chemical, and other sectors, the technology has delivered very little over the last 30 years. Despite this, policy discussions at the European Union (EU) and member state levels increasingly focus on CCS – with a growing emphasis on carbon dioxide removal or CDR technologies – as a necessary tool to meet net zero targets.

As this briefing demonstrates, plans for the large-scale use of CCS, including in bioenergy and direct air capture applications (BECCS and DACCS, respectively), ignore significant technical limitations and economic realities.[1] Existing solutions, such as non-biogenic forms of renewable energy, energy efficiency, and electrification – along with emerging solutions for cement and other industrial sectors – are far more effective and cost-efficient, and they avoid emissions at the outset, unlike CCS.

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1 The feasibility of reaching gigatonne scale CO_2 storage by mid-century (2024).

When was CCS first used?

CCS was first used in 1972 at the Terrell Natural Gas Processing Plant (Val Verde) in Texas. This application involved the capture of carbon dioxide (CO_2) from a complex of gas processing plants. The captured CO_2 was then used to boost the productivity of oil wells (a process referred to as Enhanced Oil Recovery or EOR). More than 50 years later, Val Verde remains operational, and EOR remains the primary economic driver for CCS.

CCS as a potential climate mitigation solution was first proposed in 1977 by Cesare Marchetti at the International Institute for Applied Systems Analysis in *On geoengineering and the CO_2 problem*.[2] Cesare recognised that climate change was a problem, and his solution was the "Gigamixer," which would collect billions of tonnes of CO_2 from power plants and industries in Europe and send it by pipeline to the Gibraltar Strait, where it would be injected into sea currents and follow them to great depth. There, he proposed, it would be out of harm's way. In practice, ocean disposal of CO_2 can have a range of local ecosystem impacts, including smothering and asphyxiation of marine organisms and ocean acidification.[3]

[2] On geoengineering and the CO_2 problem (1972).

[3] CO_2 disposal in the ocean is a dangerous distraction (2008).

What are the main steps of the CCS process?

The primary steps of CCS are capture, compression, transport, injection, and storage (or utilisation). Whilst the source of the CO_2 may vary, these steps are the same or similar regardless of the CCS application. This is true for BECCS and DACCS, which are sometimes referred to as tech-based CDR or industrial carbon removal. Monitoring of stored CO_2 is another key component of the CCS process, but it has not been consistently deployed across CO_2 storage sites, particularly in EOR applications.

How is CCS used?

CCS is primarily used in EOR where CO_2 is injected into depleted oil reservoirs to boost production. According to a 2023 analysis by DeSmog, 32 commercial CCS facilities are operating globally.[4] Of those, 22 use most, or all, of their captured CO_2 in EOR. These facilities account for almost 80% of operational carbon capture capacity.[5] Whilst a portion of the CO_2 injected underground in EOR remains there, the process is by no means beneficial for the climate as the oil forced out of reservoirs by the injected CO_2 is ultimately burned, releasing more emissions into the atmosphere.

Aside from EOR, CCS is currently used in gas processing to reduce the CO_2 content of extracted gas to make it marketable and/or to avoid carbon taxes (the latter is the case in Norway with the Sleipner and Snøhvit projects). To a significantly lesser extent, it is also used in power and industrial sectors, but experience here is highly limited. For example, only two coal-fired power plants in the world – Boundary Dam and Petra Nova (closed in 2020) – have ever captured a portion of their emissions using CCS and no gas-fired power plant has ever installed CCS. In the industrial sector, the use of CCS is practically non-existent.

4 How Carbon Capture and Storage Projects Are Driving New Oil and Gas Extraction Globally (2023).

5 Global CCS Institute 2022 Status Report, Appendices, Section 6 (2022).

BECCS and DACCS remain in their infancy and significant technical, environmental, and economic challenges mean they may never get off the ground.

Lastly, CCS is increasingly hyped through CDR applications, such as BECCS and DACCS. Both technologies remain in their infancy and significant technical, environmental, and economic challenges mean they may never get off the ground.[6] For example, DACCS is very energy intensive due to the massive volume of air that must be filtered to capture meaningful amounts of CO_2. One study examining the potential of DACCS to help meet the Paris Agreement goal found that widescale deployment of the technology would account for one-quarter of global energy demand for heat and power by the end of this century.[7] Large-scale deployment of BECCS would further increase deforestation and forest degradation, disrupt food production, limit access to water, and exacerbate the biodiversity crisis.[8] Moreover, the ability of BECCS to reduce climate emissions remains an open question[9] as the technology would remove carbon from the biogenic carbon pool (mostly plants), not the atmosphere, in a context where the European land sink has been in a freefall for more than a decade.[10]

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6 Ask MIT Climate: How much carbon dioxide would we have to remove from the air to counteract climate change? (2023).

7 An inter-model assessment of the role of direct air capture in deep mitigation pathways (2019). Another calculation estimates that capturing the 32 billion tonnes of CO_2 emissions emitted from fossil fuel combustion in 2020 would require more than five times the total global electricity consumption in that year (see Recharge, The amount of energy required by direct air carbon capture proves it is an exercise in futility [2021]).

8 *Ibid.*

9 Six problems with BECCS (2022).

10 Forest Information System for Europe, Carbon Sinks and Sources (Last updated 15 December 2022).

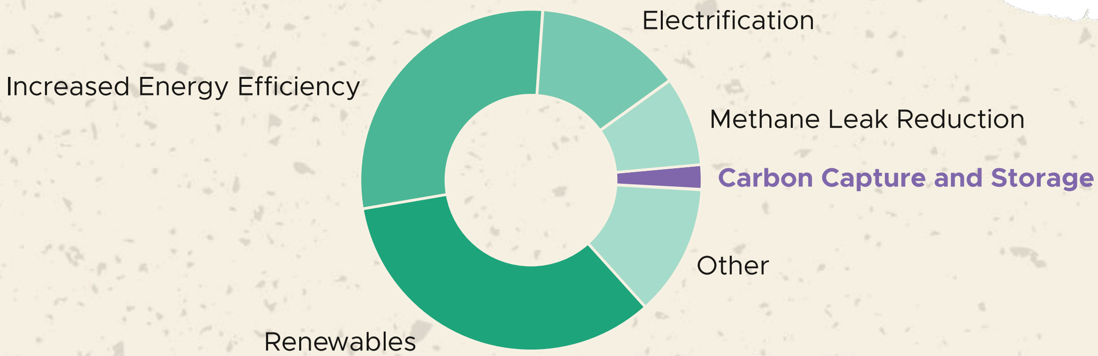
Does CCS work?

CCS remains unproven as a climate mitigation solution both in terms of scale and efficacy.[11] Projects are continually announced and cancelled due to cost overruns and technical issues whilst those that manage to achieve operation chronically underperform in almost every respect.[12]

As noted by the International Energy Agency (IEA), the history of CCS "has largely been one of unmet expectations."[13] This despite over $20 billion in public monies being spent on CCS projects worldwide in the last two decades.[14] CCS's failure to deliver prompted the IEA in 2023 to downgrade the technology's contribution to emissions reductions in the power sector by 40% compared to 2021 scenario levels.[15]

Even if CCS worked, the Intergovernmental Panel on Climate Change (IPCC) estimates that it would only account for an average of 2.4% of CO_2 mitigation by 2030, even if implemented at its full potential.[16] Meanwhile, renewable energy, energy efficiency, and eliminating fugitive methane emissions could deliver more than 80% of the world's decarbonisation requirements in the same timeframe (see Figure 1).[17]

Figure 1: CO_2 Mitigation Potential by 2030



Source: IPCC, AR6 Synthesis Report, Section 4.5 and Figure 4.4.

[11] Carbon Capture: Five Decades of False Hope, Hype, and Hot Air (2021).

[12] Fossil Fuel Companies Made Bold Promises to Capture Carbon. Here's What Actually Happened. (2023).

[13] Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach (2023).

[14] Carbon Capture's Publicly Funded Failure (2023).

[15] New IEA net zero report leaves big polluters less room to hide (2023).

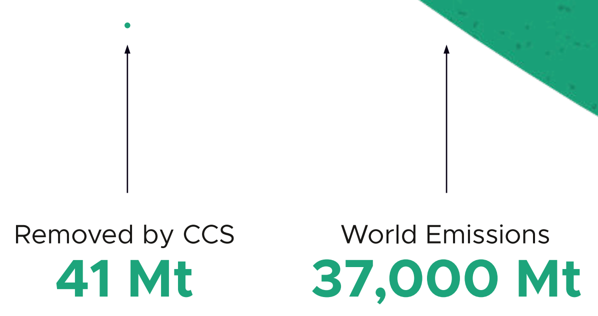
[16] AR6 Synthesis Report: Climate Change 2023, Section 4.5 and Figure 4.4 (2023).

[17] *Ibid.*

How much CO_2 is stored annually?

Approximately 41 million tonnes of CO_2 are captured and stored annually[18] – an amount that represents 0.1% of the world's approximately 37 billion tonnes of energy-related CO_2 emissions (see Figure 2).[19] Contrast this with energy efficiency, which the IEA estimates avoided 7,000 million tonnes of CO_2 in 2022.[20] The current rate of capture and storage would need to increase at least 100-fold by 2050 to meet the IEA's Net Zero Roadmap.[21]

Figure 2: Global CO_2 Emissions and Portion Captured by CCS
(in millions of tonnes [Mt])



[18] CCS. Vital to Achieve Net-Zero (2021).

[19] CO2 Emissions in 2023 (2024).

[20] International Energy Agency, Energy Efficiency page, Tracking Energy Efficiency, CO_2 emissions (accessed 12 September 2024).

[21] Global CCS Institute Key Messages (2023) and IEA's Net Zero Roadmap (2021).

On the CDR front, fully cancelling out annual CO_2 emissions would require the removal and permanent storage of nearly 20 billion tons of CO_2 from the atmosphere every year.[22] It is unlikely that we have this much storage space for CO_2 – the IPCC estimates that as much as 30 gigatonnes (Gt) of CO_2 could be stored annually by 2050, but a recent study forecasts a best-case storage scenario of 5 to 6 Gt a year by 2050.[23]

Limited public information makes it difficult to evaluate the performance of CO_2 storage sites. However, a few notable examples demonstrate how CO_2 storage works (or does not work) in practice. These examples include the In Salah CO_2 storage site in Algeria, which was abandoned in 2011 after over-pressurisation of the storage formation fractured the caprock and raised concerns about potential CO_2 leakage.[24] Whilst the CO_2 did not escape from the subsurface after the fracture of the caprock, the pressure resulted in a surface-level ground swell of 20 to 25 millimetres.[25] This level of movement is enough to cause surface structures on the ground to crack. This did not happen at In Salah because the site is located on unoccupied land.

Over-pressurisation has also plagued Chevron's troubled Gorgon project in Australia resulting in a reduced injection rate to address leakages and avoid fracturing the caprock.[26] Norway's most famous CCS projects – Sleipner and Snøhvit – in the North Sea have encountered unexpected challenges (as detailed in the following question) despite extensive study and careful engineering, as documented in a 2023 analysis by the Institute for Energy and Economics and Financial Analysis (IEEFA).[27]

These examples highlight the difficulty of storing CO_2 even at smaller scales (e.g. Sleipner and Snøhvit each inject about 1 million tonnes of CO_2 underground per year) and showcase a subset of the challenges likely to be encountered in scaling up CO_2 storage activities.

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[22] Ask MIT Climate: How much carbon dioxide would we have to remove from the air to counteract climate change? (2023). In the article, Charles Harvey, a professor of civil and environmental engineering at the Massachusetts Institute of Technology notes, "Removing CO_2 is one of the hardest and most expensive ways we could address climate change – far more difficult than simply emitting less carbon in the first place."

[23] The feasibility of reaching gigatonne scale CO_2 storage by mid-century (2024).

[24] Carbon Commentary: The struggles to make CCS work (2021).

[25] The In Salah CO_2 Storage Project: Lessons Learned and Knowledge Transfer (2013).

[26] Fossil Fuel Companies Made Bold Promises to Capture Carbon. Here's What Actually Happened. (2023).

[27] Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales? (2023).

Can permanent CO_2 storage be guaranteed?

As long as CO_2 is stored in a geological site, there is a risk of leakage, seepage, or migration. Whilst it is impossible to quantify the exact risk, any CO_2 release has the potential to impact the surrounding environment, whether it be air, groundwater, soil, or the marine environment.[28] In its 2005 special report, *Carbon Dioxide Capture and Storage*, the IPCC noted that "CO_2 storage is not necessarily permanent. Physical leakage from storage reservoirs is possible via (1) gradual and long-term release or (2) sudden release of CO_2 caused by disruption of the reservoir."[29] Continuous leakage into the atmosphere, even at rates as low as 1%, would negate climate mitigation efforts.

Leakage, seepage, and unanticipated migration of CO_2 have already occurred at CCS projects, calling into question the efficacy of the carbon capture and storage process. For example, in 2017, leaking valves and excess water were found in the CO_2 pipeline at the Gorgon project.[30] When CO_2 comes into contact with water, it forms carbonic acid, which can damage and dissolve pipelines and injection well equipment. The sandstone formation at the Gorgon project is filled with water, raising the possibility of additional leaks from corrosion.

Experiences at the Sleipner and Snøhvit projects further highlight the challenges and risks associated with achieving safe, permanent storage of CO_2. Both projects have experienced "unexpected subsurface storage behaviours" that could have resulted in CO_2 leakage.[31] Snøhvit also faced potential subsurface geological failure that required emergency interventions and remedial measures a mere 18 months after the start of storage operations. As noted by IEEFA, these projects, "rather than serving as entirely successful models for CCS that should be emulated and expanded, instead call into question the long-term technical and financial viability of the concept of reliable underground carbon storage."[32]

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[28] Deep Trouble: The risks of Offshore Carbon Capture and Storage (2023).

[29] Implications of carbon dioxide capture and storage for greenhouse gas inventories and accounting (2018).

[30] Gorgon CO_2 injection stopped by leaks and corrosion (2017).

[31] Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales? (2023).

[32] *Ibid.*

Is CCS beneficial for the climate?

CCS projects often enable the release of more CO_2 into the atmosphere than they are storing underground. For example, by some estimates, Sleipner has released 25 times more CO_2 into the atmosphere (from the combustion of the natural gas produced) than has been stored under the seabed in the North Sea.[33]

Moreover, most CCS projects do not even aim to capture 100% of their emissions. Rather, the industry target tends to be a 90% to 95% capture rate as capturing above this rate becomes significantly more expensive. Despite years of trying, however, CCS projects have never achieved a 90% capture rate. A review conducted by IEEFA found that no existing project has consistently captured more than 80% of CO_2 and capture rate targets are consistently missed (see Figure 3).[34]

Considering the energy penalty[35] associated with CCS, the technology might (at best) be able to reduce CO_2 emissions at a particular point source to some degree, but it would never be able to eliminate them. Moreover, captured emissions do not equal avoided emissions (e.g. not all CO_2 that is captured is stored). And from a lifecycle perspective, the potential for CCS to deliver net emission reductions is even less. A Stanford study found that the lifecycle CO_2-equivalent emission reduction potential of a coal plant retrofitted with CCS was only 10.8% over 20 years.[36]

No existing project has consistently captured more than 80% of CO_2— capture rate targets are consistently missed.

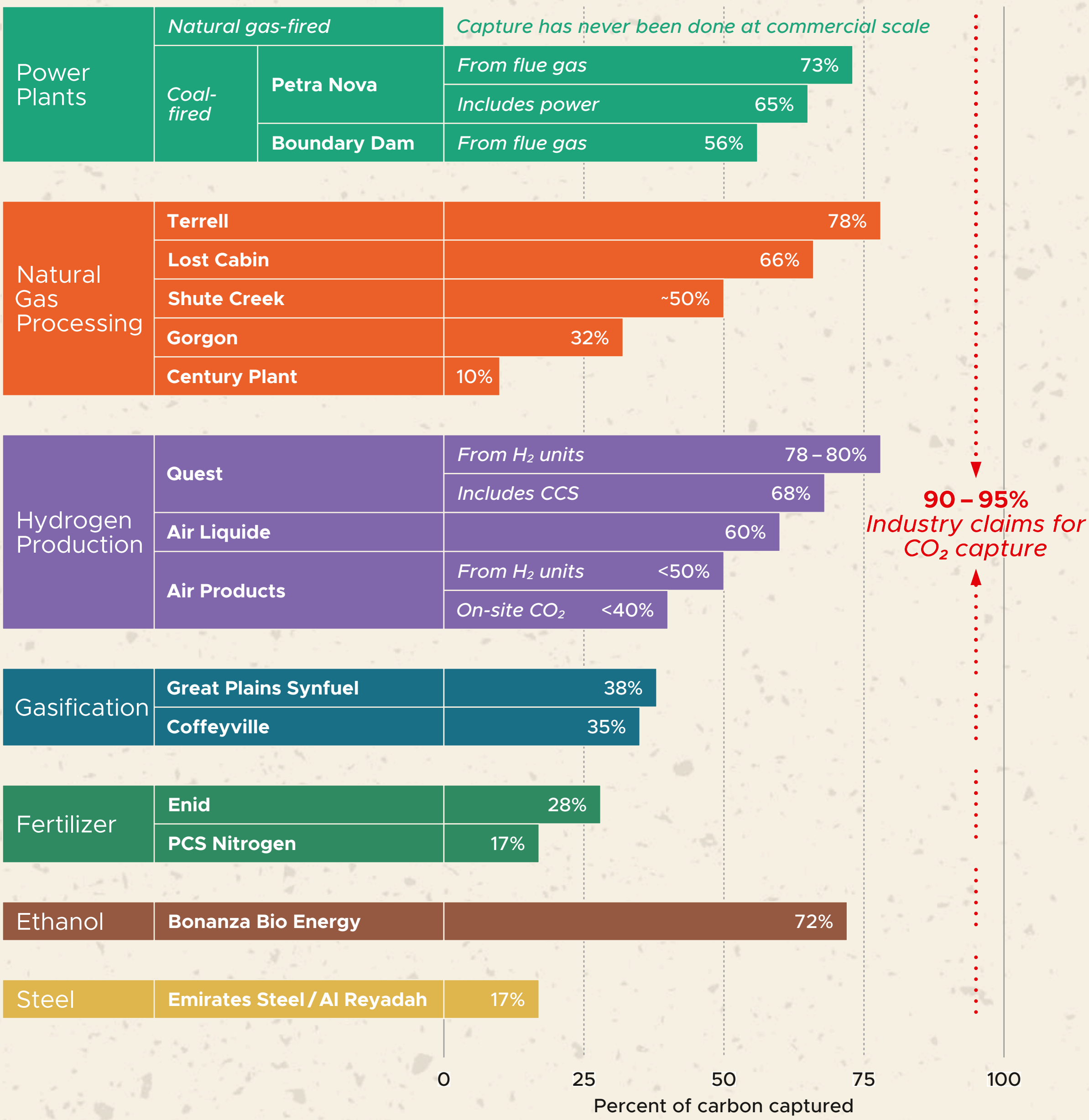
[33] Best Carbon Capture Facility In World Emits 25 Times More CO_2 Than Sequestered (2019).

[34] Institute for Energy Economics and Financial Analysis, Carbon Capture and Storage page (accessed 12 September 2024) and Blue hydrogen: Not clean, not low carbon, not a solution (2023).

[35] Energy penalty refers to the additional energy required to capture, compress, transport and store CCS. This energy penalty can increase the amount of fuel needed to generate the same amount of electricity.

[36] The health and climate impacts of carbon capture and direct air capture (2019).

Figure 3: Real-World CO_2 Capture Rates



Source: IEEFA report, Blue hydrogen: Not clean, not low carbon, not a solution.

Is CCS cost effective?

CCS is prohibitively expensive and the least preferable mitigation option in the IPCC's Synthesis Report due to its marginal abatement cost and potential to contribute to net emission reductions by 2030.[37] CCS's high costs are due to significant design complexity and the need for customisation across projects. This means there is not much hope of a learning curve lowering costs substantially for CCS, because no two projects are the same.

According to a report from Oxford University, a "high Carbon Capture and Storage (CCS) pathway to net zero emissions in 2050 is expected to cost at least $30 trillion more than a low CCS pathway – roughly $1 trillion per year."[38] The report concludes that the pursuit of CCS puts governments at a "competitive disadvantage."

Even Equinor found the cost of CCS to be too high when evaluating options to reduce emissions at its Hammerfest LNG facility in northern Norway. The company estimated that the cost of implementing CCS (on gas-fired power plants that produce electricity to run operations) would be around 6,500 Norwegian kroner (€570) per tonne of CO_2 avoided.[39] This extremely high cost prompted the company to forego CCS entirely, opting instead for electrification (replacing gas turbines with renewable electricity from the Norwegian grid) to reduce emissions.

Whilst CCS proponents argue that costs will decline over time, CCS has been in commercial use over the last 50 years and cost reductions have been essentially non-existent.[40] This stands in stark contrast to renewable energy which has witnessed significant cost declines in recent years. For example, in 2010, the global weighted average levelised cost of electricity for solar photovoltaics was 710% more expensive than the lowest fossil fuel solution.[41] But, by 2022, it was 29% cheaper.[42]

37 AR6 Synthesis Report: Climate Change 2023, Summary for Policymakers, Figure SPM.7 (2023).

38 Assessing the relative costs of high-CCS and low-CCS pathways to 1.5 degrees (2023).

39 Is Carbon Capture and Storage more expensive than we thought? (2024).

40 Assessing the relative costs of high-CCS and low-CCS pathways to 1.5 degrees (2023).

41 Renewable Power Generation Costs in 2022 (2023).

42 *Ibid.*

Is CCS needed for “hard to abate” emissions?

CCS is often pointed to as a solution for so-called “hard to abate” emissions in industrial sectors, including steel, cement, and plastics. This line of thinking, however, overlooks the costs and complexities associated with deploying the technology at industrial facilities. A review of facilities in the US industrial sector found that many facilities were simply not suitable for carbon capture retrofits; only a portion of process or refinery emissions could be captured with CCS; and most facilities could not capture emissions economically, even with subsidies and EOR.[43]

Even if CCS could cost-effectively capture CO_2 from industrial facilities, transporting and safely storing CO_2 raises another set of technical and economic challenges from a co-location perspective. The geographic distribution of CO_2 storage sites means that even if an industrial facility captures CO_2, it is likely to have nowhere nearby to store it. To resolve this, a massive infrastructure build-out of pipelines and new facilities would be required to transport captured industrial emissions to storage sites. A European Commission (EC) study estimates that by 2050, a CO_2 pipeline network of up to 19,000 kilometres in length may be needed in Europe, and the cost of building such a network could be anywhere from €9.3 billion to €23.1 billion.[44] In the US, the CO_2 pipeline network might need to be as long as 96,000 miles[45] (almost 155,000 kilometres), or enough to circle the Earth four times.[46]

[43] Cost Analysis of Carbon Capture and Sequestration of Process Emissions from the U.S. Industrial Sector (2020).

[44] Shaping the future CO_2 transport network for Europe (2024).

[45] Pathways to Commercial Liftoff: Carbon Management (2023).

[46] Carbon Capture Needs Enough Pipelines to Circle Earth Four Times (2023).

In reality, the majority of industrial sector emissions can be eliminated without CCS through the reuse of existing materials, increased recycling rates, material substitution, energy efficiency, and electrification using renewable energy. This is already happening in the steel industry where electricity and hydrogen are eliminating coal from the steel production process and creating zero-emission steel.[47] Electrification, recycling, and alternative production methods increasingly hold promise to reduce or eliminate emissions in the cement sector.[48]

The notion that CDR technologies may be needed to counterbalance or offset so-called hard-to-abate emissions ignores the fact that such applications are technologically and economically unproven and pose significant social and environmental risks. Moreover, as noted by a United Nations technical working group, these approaches "do not contribute to sustainable development, are not suitable for implementation in developing countries and do not contribute to reducing the global mitigation costs."[49] The executive director of US-based Project Drawdown,[50] Jonathan Foley, has been far more damning in his criticism of CDR technologies. In a 2023 article, he wrote that "industrial carbon removal is wildly expensive, far too energy- and resource-intensive, and only removes pathetically small amounts of carbon."[51]

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[47] 'Green steel': Swedish company ships first batch made without using coal (2021).

[48] Zero-carbon cement process could slash emissions from construction (2024)

[49] Information note: Removal activities under the Article 6.4 mechanism (2022).

[50] Project Drawdown is a non-profit organisation with a mission to help the world stop climate change – as quickly, safely, and equitably as possible (see the Project Drawdown website for more information).

[51] Stop giving oil a carbon fig leaf (2023).

Is CCS dangerous?

CCS proponents claim that CCS has been used "safely and effectively for over 50 years."[52] Such statements ignore a number of issues with the technology, as highlighted above. The claim is also untrue as CO_2 pipeline leaks and accidents have jeopardised human health and impacted local communities. CO_2 is a colourless, odourless gas that is heavier than air. At sufficient concentrations, it poses a significant risk to human health, including death.

In 2020, a CO_2 pipeline exploded in Satartia, Mississippi.[53] The CO_2 that poured into a rural community located nearby resulted in the evacuation of more than 200 people and hospitalisation of at least 45. During the event, cars stopped working as CO_2 displaced oxygen and prevented them from starting, hindering the emergency response. Several years after the event, some residents continue to struggle with health impacts, including headaches, difficulty concentrating, and tremors.

The same pipeline leaked again – this time in Sulphur, Louisiana – in 2024.[54] Local residents were unable to evacuate, in accordance with emergency procedures, because the wind direction would have required them to drive through the leaking CO_2.[55] No illnesses or serious illnesses were reported. This was the second accidental release from this location – the first occurred in 2011.

CO_2 is transported through pipelines under high pressure and low temperatures. As noted previously, the presence of water in the pipelines or impurities in the CO_2 (e.g. hydrogen sulphide) can result in pipeline corrosion increasing the risks of leaks and explosions. Despite these risks and recent accidents, the fossil fuel industry in the US has resisted efforts to increase federal oversight and improve pipeline safety.[56]

[52] Global CCS Institute Key Messages (2023).

[53] The U.S. is expanding CO_2 pipeline. One poisoned town wants you to know its story (2023).

[54] 'A stark warning': Latest carbon dioxide leak raises concerns about safety, regulation (2024).

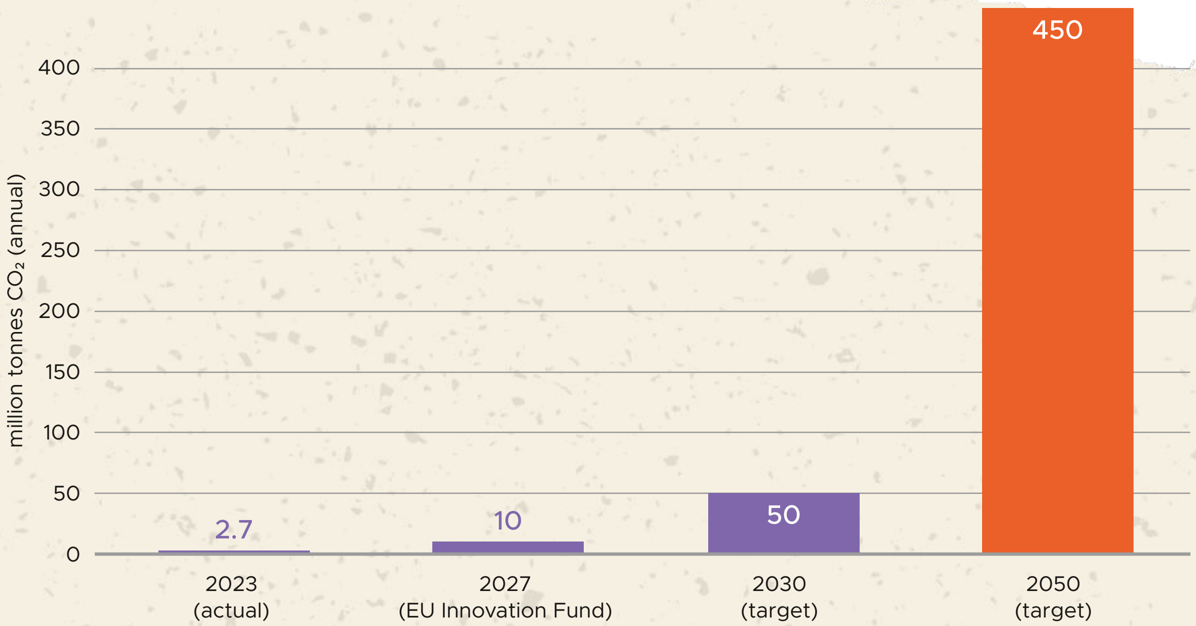
[55] CO_2 Pipelines Are Big Oil's New Mode of Destruction (2024).

[56] *Ibid.*

What is the status of CCS in Europe?

Despite the many issues with CCS, the EU and several European countries are increasingly all-in on CCS, including CDR technologies, to meet net zero emission reduction targets. The EC, in particular, is strongly supportive of CCS. In the Net-Zero Industry Act, the EC proposed an EU-level goal of 50 million tonnes of storage capacity by 2030 (i.e. six years from now). This would need to increase to an astounding 450 million tonnes of CO_2 by 2050 to reach net zero targets (see Figure 4).[57] Such targets are completely divorced from reality. For example, the current CO_2 storage rate in Europe is less than 2 million tonnes per year,[58] and only a single CCS project has achieved the final investment decision milestone in the last 15 years: Ørsted's Kalundborg CO_2 Hub in Denmark.[59]

Figure 4: CO_2 Storage Capacity Needed to Meet Net Zero Targets



Source: Actual capture rate from IEA CCUS Projects Explorer (last updated 15 March 2024); EU Innovation Fund and EU targets from EU Industrial Carbon Management Strategy (ICMS), February 2024

[57] European Commission, About Industrial Carbon Management page (accessed 12 September 2024).

[58] IEA CCUS Project Explorer (last updated 15 March 2024).

[59] Carbon Capture & Storage Europe, Progress on CCS Project in the EU page (2023) and Ørsted begins construction of Denmark's first carbon capture project (2023).

Today, some 119 CCS projects (including BECCS and DACCS projects) are in various stages of development, and policy support for CCS is only increasing through measures such as the Fit for 55 Package, the Green Deal Industrial Plan, and the Industrial Carbon Management (ICM) Strategy.[60] Money is also flowing as EU funds, including EU Innovation Fund monies, and billions of euros in state aid have been earmarked to support CCS in countries such as Sweden[61] and Denmark.[62] At the same time, Norway is hyping its latest transboundary CO_2 storage project, Longship, as a solution to Europe's industrial climate emission woes.[63] Countries and companies are lining up to partner in hopes of CCS delivering so they can continue business as usual.[64]

If all of this gives you a sense of déjà vu, that is because Europe underwent a similar CCS-induced frenzy about 15 years ago. After unwavering promises of success by fossil fuel companies, in exchange for public funds, 10 – 12 CCS demonstration projects were supposed to be up and running by 2015.[65] Not a single project came to fruition. Around the same time, Norway cancelled its "moon landing" Mongstad CCS project because costs were too high.[66]

The recent increase in political support for CCS is due, in large part, to the success of the fossil fuel industry's lobbying efforts. A 2024 report by Corporate Europe Observatory and ReCommon's demonstrates that the CCUS Forum, established by the EC in 2021, is dominated by fossil fuel interests.[67] According to the report, the Forum (now referred to as the Industrial Carbon Management Forum) has had "incredible influence" on the content of the ICM Strategy. At the same time, countries like Norway are seeking to expand fossil fuel production activities. In 2024, the country granted 62 oil and gas drilling licences (compared to 47 in 2022).[68] Oil and gas production in Norway in 2025 is on track to be at its highest level in 15 years.[69]

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[60] Global Status of CCS 2023: Scaling up through 2030 (2023).

[61] Commission approves €3 billion Swedish State aid scheme to support the roll-out of biogenic carbon dioxide capture and storage (2024).

[62] Commission approves €1.1 billion Danish scheme to support roll-out of carbon capture and storage technologies (2023).

[63] Gassnova, The Longship CCS Project page (access 12 September 2024).

[64] Fluxys, CO_2, much more than a greenhouse gas page (accessed 12 September 2024).

[65] Europe's carbon capture dream beset by delays, fears and doubt (2015).

[66] Norway drops carbon capture plan it had likened to "Moon landing" (2013).

[67] The Carbon Coup: How corporate capture is locking Europe into a fossil fuelled future (2024).

[68] The Barents Observer, Norway expands oil drilling, boosts production (2024).

[69] *Ibid.*

As this briefing demonstrates, the enthusiasm and policy support for CCS, including as the basis for technological CDR, as a proven, viable climate mitigation option is wildly misplaced. Nevertheless, the EU and European countries seem determined to stay the course – reality be damned – and they are willing to risk the climate and our future in the process. All so we can keep extracting, processing, and burning fossil fuels.

Find out more at
RealZeroEurope.org