

# CARBON CAPTURE USE AND STORAGE (TECHNOLOGY BRIEFING)

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Download: [HTTPS://WWW.GEOENGINEERINGMONITOR.ORG/WP-CONTENT/UPLOADS/2021/11/CCUS\\_ENG\\_V101.PDF](HTTPS://WWW.GEOENGINEERINGMONITOR.ORG/WP-CONTENT/UPLOADS/2021/11/CCUS_ENG_V101.PDF)

Carbon Capture Use and Storage (CCUS) is a proposed carbon dioxide removal (CDR) technology that aims to capture CO<sub>2</sub> from industrial exhaust fumes or directly from the atmosphere. The captured CO<sub>2</sub> is used as a feedstock in manufacturing, so it becomes “stored” in manufactured goods – until it is again released into the atmosphere.

There are different CCUS pathways: Enhanced Oil Recovery (EOR), CO<sub>2</sub>-based chemicals and fuels, microalgae-based fuels and products, CO<sub>2</sub>-based plastics, CO<sub>2</sub> used in construction materials, and CO<sub>2</sub> used for agriculture, food and feed. 1 CCUS is understood as an attempt to make Carbon Capture and Storage (CCS) profitable. Most CCUS scenarios are still theoretical but some technologies are currently being commercialized.

The primary critique of CCUS – as with CCS and DAC- is that it extends the life of dirty energy in poor communities around the world, with acute environmental justice, health and economic impacts, while having little evidence it can address the climate crisis at the scale required. Furthermore, the captured CO<sub>2</sub> emissions will be re-released into the atmosphere rendering the technology basically useless to stop climate change.

Emissions are not permanently stored but are embedded in products or re-released through incineration or decomposition processes. Additionally, CCUS is based on CO<sub>2</sub> removal technologies, that are very energy-intensive, costly and technologically challenging.

Production, transport and infrastructure require the production of additional emissions. The upshot: CCUS is likely to lead to more emissions rather than less – in particular if one takes into account that CCS is already prone to generating more emissions that it captures (see Technology Briefing on CCS).

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