Can carbon capture technologies be improved as a method to remove CO_2 from the atmosphere?

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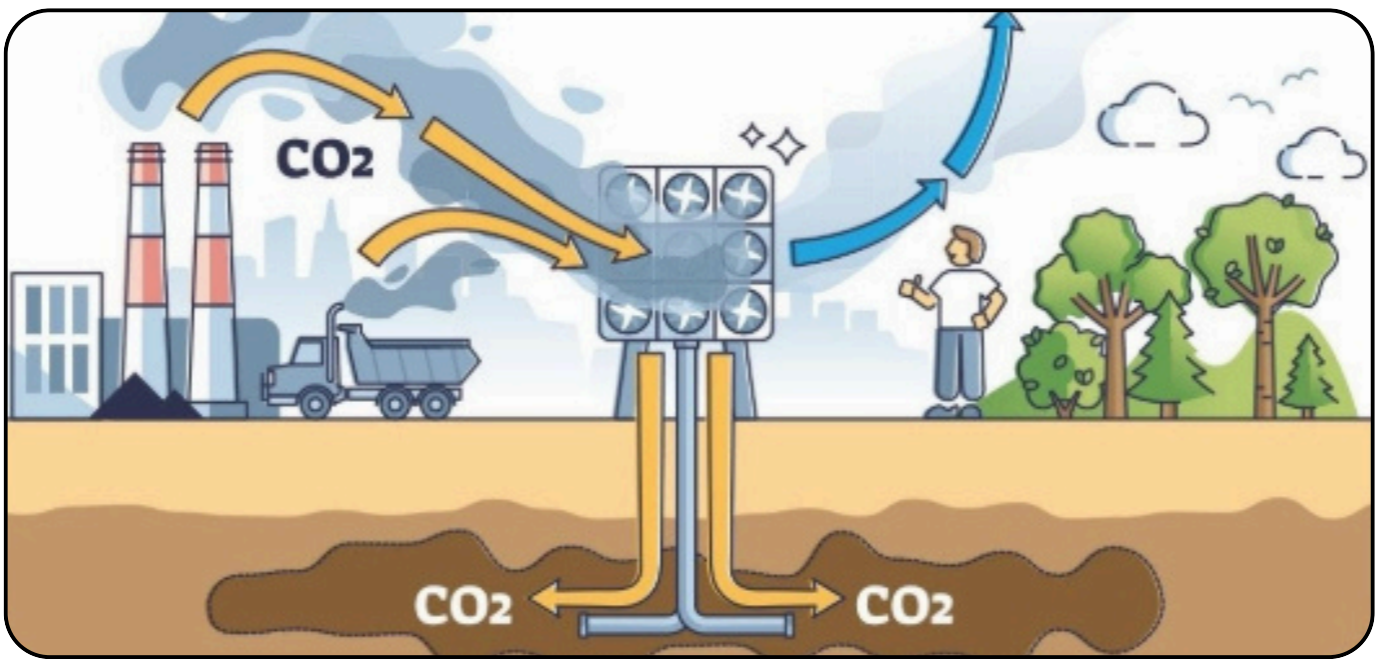
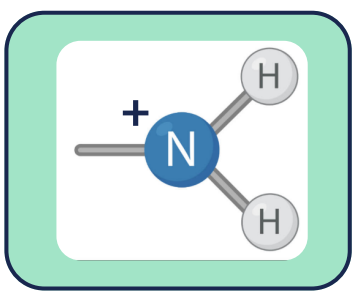
What is Carbon Capture?



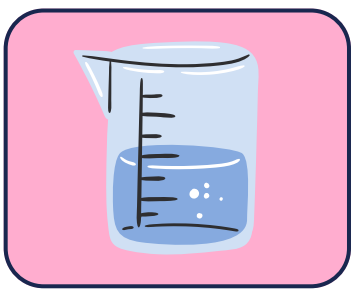
- Carbon Capture Utilization and Storage (CCUS)
- Field of environmental and chemical engineering

Carbon Capture is helpful for CO_2 Removal



WHAT ARE CARBON CAPTURE SOLVENTS?

- These liquid/gel solvents capture CO_2 gas for processing.
- The industry standard MEA is unstable and energy inneficient



BIPHASIC SOLVENTS

- Newly developed biphasic solvents are more efficient than typically used MEA solvents (Oko 11)
- One layer rich in CO_2, one with less CO_2 makes it easier to reduce volume of process (Lee 1)

Common Criticisms

"Big Oil"

Potential for companies like Shell to promote fake sustainability (Karl and Stephenne)

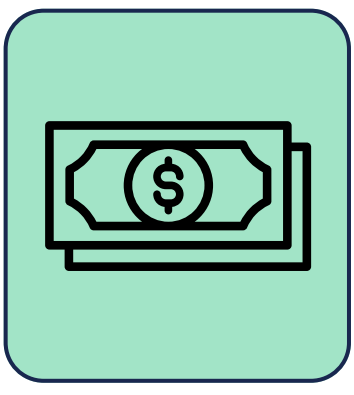
Scalability Issues

- We release about 40 billion tons of CO_2 per year
- CCUS won't make a dent in the big problem (Murray)

Critics think it is over-hyped (Murray)

- Critics think that CCUS is taking from the real solution, which is getting rid of fossil fuels altogether

Response



FUNDING

- The complexity of CCUS allows for innovation approaches through multiple technologies
- Despite lack of funding, places like Shanghai Maritime University are working on different carbon captucess methods (Kan 17)

DOING SOMETHING IS BETTER THAN DOING NOTHING

- Crisitsims are a reality check
- There should be more investment in CCUS rather than excuses for abandonement
- CCUS is not a distraction, it is a critical, improvable tool against climate change