

A VALUE CHAIN FOR BIOGENIC CO2 ABSTRACT CO2-BASED FUELS AND CHEMICALS CONFERENCE 2024 | CAROLINE BRAUN | LANDWÄRME

The increasing concentration of carbon dioxide (CO₂) in the Earth's atmosphere has prompted urgent global action to mitigate climate change. The CO₂ value chain encompasses the processes involved in capturing, storing (CCS) and/or utilizing (CCU) CO₂, offering a comprehensive approach to reducing - hard to abate - greenhouse gas emissions or even generating net negative emissions.

This presenation focuses on Bioenergy with Carbon Capture and Usage/Storage (BECCUS), where Biomass is used as a feedstock for energy production in biomass fermentation to produce biogas. During the conversion process to Biomethane CO₂ can be captured and used or permanently stored. It therefore subsitutes fossil CO₂ sources or is preventing reentering into the atmosphere. The biogenic CO₂ value chain starting with biogas upgrading offers multiple environmental and economic advantages. First and foremost, it enables significant reductions in CO₂ emissions, contributing to global efforts to combat climate change. Additionally, it promotes renewable energy production and efficiency by encouraging cleaner energy sources and the adoption of carbon capture technologies. Moreover, carbon utilization technologies provide new revenue streams and job opportunities, fostering innovation and economic growth. However, challenges persist within the CO₂ value chain that require attention. Technical and economic feasibility, scalability, and the need for supportive policy frameworks are among the key considerations.