

A low-angle, teal-tinted photograph of an industrial facility, likely a power plant or refinery, with tall towers, pipes, and scaffolding against a clear sky.

CCS in Germany

Mapping Barriers and Establishing a Roadmap

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Overview

CCS in Germany

1. Context

- › CCS and climate neutrality in the EU
- › CCS and climate neutrality in Germany

2. Challenges

- › Political neglect of CCS
- › The policy and legal bottleneck
- › Role of the state
- › Know-How

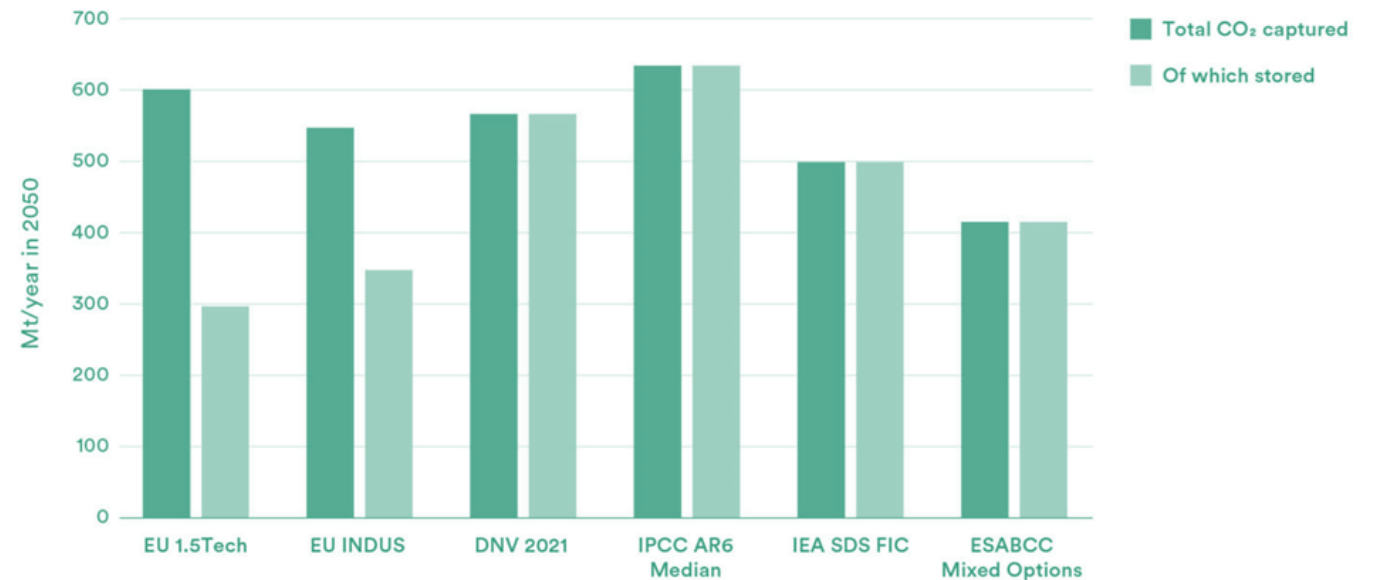
3. Policy Recommendations

- › Development of a comprehensive and positive CCS
- › Overcoming the CCS bottleneck
- › Cluster strategy for CCS development
- › Government coordination and support

4. Q&A with jury and participants

Context

- › Carbon management as a climate mitigation instrument
- › Carbon Capture and Storage is essential for climate neutrality by 2050



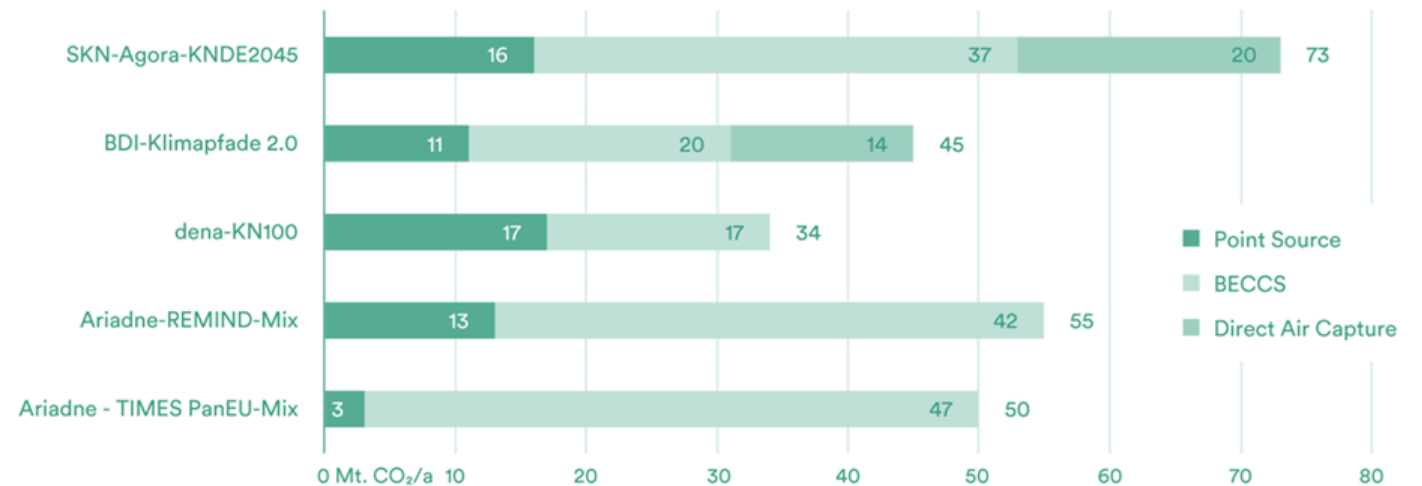
- › At least 300 tonnes of annual CO2 capture and storage capacity will need to be available by 2050 if Europe is to reach its climate goals

Context

CCS and EU climate neutrality

- › Carbon Capture and Storage necessary for climate neutrality in Germany by 2045

Quantities of geologically stored CO₂



- › Between 34 to 73 million tons of CO₂ must be geologically stored by 2045

Context

CCS and climate neutrality in Germany

Challenges

Challenges

Political neglect of CCS

- › Lack of sufficient attention at political levels compared to other climate technologies
- › Reputational problem – viewed with skepticism as a "greenwashing tool"
- › However, CCS is a crucial technology to reduce CO₂ emissions and has been used safely for several decades

Challenges

The policy and legal bottleneck

- › Bottleneck = private actors require policymakers to act in order to enable a project to proceed
- › Legal barriers
- › Lacking legal framework

Challenges

Role of the state/ Market failures

- › Carbon pricing and ETS fluctuations have so far provided low economic incentives for CCS
- › Structural problems – lack of scalability for individual plants (e.g. cement)
- › Cross-chain risks and lack of coordination between levels of governance

Challenges

Know-How

- › Lack of know-how within industries and government
- › Smaller entities or Stadtwerke lack staff to support CCS activities
- › Lack of know-how on regional and local levels impedes project development

Policy Recommendations

Policy Recommendations

CCS narrative

- › Developing a nuanced, yet positive, CCS narrative
- › CCS as crucial for a net-zero future and partner of the Energiewende
- › CO₂ infrastructure as an economic resource and key factor to ensure Germany's competitiveness under climate-neutrality
- › CCS Communications campaign

Policy Recommendations

Cluster Strategy

- › Identifying and developing CCS Clusters to scale CO₂ infrastructure
- › Successful approach in the Netherlands and the United Kingdom
- › State-level initiatives, e.g. North Rhine Westphalia

Policy Recommendations

Coordination by the state

- › Assistance in developing CCS to commercial scale (exit strategy)
- › Regulatory framework to license projects and ensure robust monitoring, fair market access and terms
- › Identifying optimal storage sites and providing early-stage exploratory tasks (e.g. seismic testing) as well as communication with the public
- › Promotion of knowledge-sharing (CCS Centre of Knowledge) and living labs (Reallabore)

Policy Recommendations

From NUMBY To YUMBY

- › Moving from "not under my backyard" to "yes under my backyard"
- › Communication with local communities by local and regional governments
- › Addressing concerns and questions from local communities to ensure maximum trust and public buy-in
- › Ownership stakes for local communities

Thank you!



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