Smoothing the path to net-zero emissions

A new policy paper highlights the ConsenCUS project's key findings and policy recommendations on the deployment of carbon capture, utilisation and storage technologies.

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A successful energy transition needs new, sustainable energy sources and systems. But what do we do in the meantime as we wait for such sources and systems to be developed? The answer lies in alternative solutions that can bridge the gap between current carbon emissions and the net zero target for 2050. One of these solutions is carbon capture, utilisation and storage (CCUS) technologies, whose deployment is facing major barriers such as inadequate regulation and financing, insufficient CO2 transport and storage infrastructure, and low public awareness.

The EU-funded ConsenCUS project is exploring lesser-known policy considerations and recommendations so that CCUS can contribute more meaningfully to the transition to net zero. The project has published a policy paper that presents the key findings and seven recommendations.

Policy considerations

The project has made several key findings whose wider implications European policymakers could take into account when shaping future CCUS policies. "The first is that different CO2 capture technologies have different environmental implications, which must be considered when deploying CO2 capture projects," the paper reports. Second, "there are trade-offs between the performance, energy consumption, and resource needs of CO2 capture units." A third consideration is that "any CCUS technology developed now must be able to operate in a net-zero world," and, additionally, "the deployment of CCUS projects should aim to optimise the use of the subsurface and explore complementarities between CO2 storage and alternative

subsurface uses, such as hydrogen or natural gas storage, including for more remote emitters."

Other considerations include the pressure to develop and test scalable CO2 capture technologies that apply to different types of emitters, a challenging task since capture unit requirements are determined by the type of industrial activity, size and location of emitters. "On the other hand, large emitters and those situated near each other (for example, in industrial clusters) may drive demand for capture systems with multi-user capabilities and shared transport, utilisation, and storage infrastructure. This creates a different set of challenges, as this shared infrastructure will need to aggregate multiple CO2 sources and end-uses (whether utilisation or storage), which requires harmonised specifications and standards, as well as a robust model for sharing risks and liabilities, which should not fall solely on the public sector." Finally, capabilities-focused community and stakeholder engagement is critical for the implementation of CCUS projects.

Seven recommendations

Findings to date have resulted in seven policy recommendations for the EU's rapidly changing CCUS policy landscape: First, "[t]he environmental impact of CO2 capture and conversion units should be a key criterion in assessing the impact of EU-wide CCUS targets." Second, "CCUS pathways must be fit for operation in a net-zero world." Third, impact assessments of EU-wide and national CCUS strategies should also include scope 2 and 3 emissions from the whole CCUS chain. The fourth and fifth recommendations involve accelerating the CCUS technology pipeline and subjecting shared CO2 transport and storage infrastructure "to rigorous standards and models for sharing liability from CO2 sources and end-users connected to the infrastructure." Additionally, "Member States should be mandated to set out a comprehensive strategy and funding framework for R&D, innovation, and deployment of CCUS." Finally, the meaningful engagement of local communities and stakeholders should be a requirement in CCUS projects.

The ConsenCUS (CarbOn Neutral cluSters through Electricity-based iNnovations in Capture, Utilisation and Storage) project ends in 2025.

For more information, please see:
ConsenCUS project website

Keywords

ConsenCUS | carbon capture | carbon utilisation | carbon storage | CCUS | CO2 | net zero | policy paper

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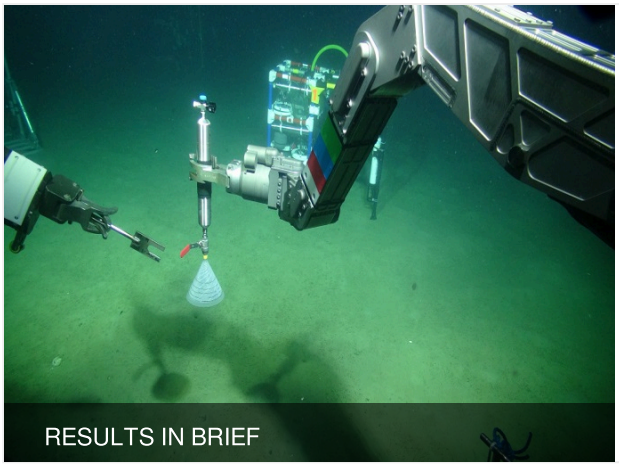

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