

Building Resilient CCS Infrastructure for Europe's Climate Future: Insights from COREu at ICONHIC 2026

As Europe seeks to accelerate the deployment of carbon capture and storage (CCS), ensuring the resilience of CO₂ capture, transport, and storage infrastructure is becoming increasingly important. Successful CCS deployment requires effective monitoring, risk assessment, robust governance frameworks, and clear response procedures to ensure long-term safety and public confidence.

These challenges were explored at the International Conference on Natural Hazards and Infrastructure (ICONHIC 2026), held in Chania, Greece, from 29 June to 2 July 2026. Bringing together researchers, industry representatives, infrastructure operators, and policymakers, the conference provided a platform to examine how resilient infrastructure can support Europe's climate transition.

Among the conference highlights was the session *"Resilient CO₂ Capture, Transport and Storage (CCS) Infrastructure Across Europe: Risk, Monitoring, Systemic Resilience, Policy"*, organised by the Horizon Europe project [COREu](#). More than ten COREu partner organisations gathered at the session, demonstrating how resilient CCS deployment requires expertise from multiple disciplines, including environmental monitoring, risk assessment, economics, governance, and stakeholder engagement.

A Multidisciplinary Approach to CCS Deployment

The session highlighted how resilience must be considered throughout the CCS value chain. Presentations covered topics ranging from environmental monitoring and risk assessment to economic incentives, regulatory readiness, stakeholder engagement, and capacity building.

Monitoring and risk assessment were recurring themes throughout the session. Speakers presented advances in baseline data collection and monitoring technologies, including AI-assisted earthquake detection for induced-seismicity monitoring and the use of environmental DNA to better understand marine ecosystems before storage operations begin. These approaches help establish a baseline understanding of site conditions and support the detection of potential future changes. Safety considerations across CO₂ transport, injection, and storage were also discussed, highlighting the importance of harmonised safety frameworks and robust risk assessment methodologies.

Together, these contributions reflected COREu's multidisciplinary approach to CCS, extending beyond technology development to include environmental responsibility, societal acceptance, regulatory readiness, and operational resilience. The session also showcased strong female representation among COREu speakers and participants, highlighting the growing diversity of expertise contributing to Europe's CCS sector. Readers interested in exploring the research presented at the session can access the conference abstracts and papers [here](#).





Picture 1 COREU team organised a curated session on resilient CCS infrastructure



Picture 2 Strong female representation in COREU team at ICONHIC 2026

From Monitoring to Decision-Making

Discussions following the presentations explored how CCS projects should respond to potential incidents, including CO₂ leakage events. Participants emphasised that resilient CCS deployment depends not only on advanced monitoring technologies, but also on clear governance structures, predefined response procedures, and effective coordination between operators, regulators, and local authorities. This reinforced a central message of COREU: resilient CCS infrastructure requires both technological innovation and robust operational frameworks.

A Closer Look at CCS in Practice

Beyond the session, COREU featured an exhibition stand organised by Steinbeis Europa Zentrum, the project's communication, dissemination, and exploitation leader. At the stand, partners engaged with conference attendees on the opportunities and challenges of CCS deployment across Europe. Visitors could also experience a virtual reality (VR) tour of the Prinos CO₂ injection site in Greece, developed and set up by Neuraltech, offering a practical insight into how future CO₂ storage infrastructure may operate.



Picture 3 COREU provided a VR experience of the Prinos CO₂ Injection Site

Looking ahead

The discussions at ICONHIC 2026 highlighted the multidisciplinary nature of CCS deployment. Addressing environmental, economic, regulatory, and societal considerations in parallel will be essential to supporting the responsible growth of CCS across Europe. Through initiatives such as

COREu, researchers and practitioners across Europe are helping to build the knowledge base needed to support the next phase of CCS deployment.

Acknowledgements

COREu would like to thank all partner organisations that contributed to the session *"Resilient CO₂ Capture, Transport and Storage (CCS) Infrastructure Across Europe: Risk, Monitoring, Systemic Resilience, Policy"* at ICONHIC 2026. Their expertise and active participation helped showcase the multidisciplinary collaboration required to support resilient CCS deployment across Europe.

Participating organisations include: SINTEF ER, SINTEF AS, Czech Geological Survey, NaTran, Aristotle University of Thessaloniki, The National Observatory of Athens, Norwegian Institute for Nature Research, University of Bologna, Perspective Climate Research, Steinbeis Europa Zentrum, Neuraltech, and Domina.

About COREu

COREu is one of the largest research and innovation project in the field of carbon capture and storage (CCS) funded by a European programme. Its goal is to accelerate the transition to a low-carbon future, targeting a reduction of 6.8 Mt/year of CO₂ by 2035 and 36 Mt/year by 2050. This will be achieved by demonstrating key technologies across the entire CCS value chain in Europe. The project aims to develop new demonstration projects that connect CO₂ sources with potential storage sites.

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