Programme

CCS Conference 2025

Day 1

08:00 - 09:00 **Registration with coffee/tea and a morning snack**

09:00 - 09:10 **Welcome to the CCS Conference 2025**

09:10 - 09:20 **DTU Offshore**

09:20 - 09:30

Martin Peter Næsby, CEO, Dansk Offshore

According to the IPCC (the Intergovernmental Panel on Climate Change) it is not possible to reach global climate goals without CCS.

Furthermore, Denmark has a very suitable underground and a near proximity to Northern Europe's industrial centers, making transportation of CO2 a lot less complicated and costly.

Despite Denmark having obvious advantages for carbon storage, it is by no means a “walk in the park” to establish an integrated large-scale European market for CCS. Large scale CO2 storage projects require an infrastructure supporting such large scale. There are many political decisions to be made in particular at European level.

The European Union is on the ball. In 2024, the Net Zero Industry Act became law, mandating a storage capacity of 50 million tons of CO2 per year. Furthermore, the Commission has published its roadmap for an internal market for CCS. Despite this progress, lots of questions remain unanswered at this stage. The primary ones are how and when complete European value chains will be established, and the lack of visibility on whether there is going to be over- or undersupply of CO2 in this very early market.

Martin Næsby will talk about this in his presentation and offer a list on what the industry and governments and European institutions need to collaborate on – thereby also offering his wish list to the incoming Danish EU presidency on decisions that can be made during the second half of 2025.

09:30 - 09:55

Northern Lights - First steps and learnings in an immature Carbon Capture and Storage market. Tim Heijn, Managing Director, Northern Lights

Northern Lights is ready to start CO2 transportation and storage services for industrial emitters in 2025.
2024 was a pivotal year for Northern Lights, with the delivery of the first two CO2 ships in Norway, and the completion of the receiving terminal infrastructure, the export pipeline and the injection facilities at Øygarden. This first phase is delivered as part of the Langskip project.
One of the key lessons is that successful CCS development requires early alignment across the value chain, supported by clear timelines, strong policy support and mutual technical understanding among all stakeholders.
Building on the progress made with Langskip, Northern Lights announced in March 2025 the decision to expand the capacity from 1.5 million to a minimum of 5 million tonnes of CO2 per year.

09:55 - 10:20

Upscaling the CCS value chain - Risk and challenges: From a regulator stand point. Henrik Sulsbrück, Head of Division, Danish Energy Agency

10:20 - 10:35

CCS and EU Policy : Navigating political uncertainty with a competitive narrative. Eadbhard Pernot, Secretary General, Zero Emissions Platform

Carbon Capture and Storage (CCS) is at a crossroads in Europe’s journey toward climate neutrality. As the first wave of projects enter operation and a second wave has added substantial investment commitment, CCS development has reached a new milestone in Europe. But it is still not enough. For our climate commitments to be met, the scale of deployment needed will require yet more political and financial commitment. At the same time, the world looks a lot more uncertain than it has in years before. In an age of uncertainty, political stakeholders often struggle to stay the course of new paths taken, often lurching for familiar levers to pull yielding results not beneficial for society.

This talk will explore how policymakers should remain steadfast in their commitment to CCS despite the challenges and what a compelling political narrative from the broader CCS community, one which appeals to the evolving political needs of today, can look like to make this happen.

10:35 - 11:00 **Coffee break and networking**

11:00 - 11:25

Technical risks and challenges of CCS worldwide. Owain Tucker, Capability Manager & Principal Technical Expert in Carbon Storage, Shell

This talk will explore some of Shell's experience gained from injecting over 10 Mt CO2 in Quest in Alberta and from developing offshore storage projects worldwide in saline formations, depleted fields, clastics, and carbonates.

While CCS can look very similar to hydrocarbon production, drawing upon the same core skill sets as those of engineers and geoscientists developing petroleum assets, there are also some marked differences:

• In storage, pressure space, not pore space, is the resource. Pressure effects and pressure interference resulting from CO2 injection need to be managed.

• There is “no capacity without containment”; therefore, man-made penetrations that potentially compromise the geological stores need to be forensically hunted down as a key part of CCS exploration.

• During transport of captured CO2, the phase boundary between gas and fluid will be crossed, and acids that corrode steel may be formed by trace impurities present in the captured streams.

• Monitoring of the storage system is as important as the ability to inject, and new technologies are helping to unlock smarter, more cost-effective solutions which have a lighter touch on the environment and stakeholders.

• CCS appears to offer abundant choices on available injection sites, acceptable injection rates, pressures, and infrastructure re-use. However, project execution reveals that there are complex interdependencies between geological stores and emitters, between pipeline costs and pressure requirements, and between injection rates and temperature constraints. The interaction between technical and commercial factors is critical for the optimization of a CCS project and for its ultimate success.

Dr Owain Tucker is the manager for CCS capability and project support, and the Principal Technical Expert for Carbon Storage in Shell. He has the technical overview of all CCS projects in Shell worldwide, and leads a team of experts who are responsible for guiding storage exploration and appraisal, technical assurance, technology maturation and integration, the CCS research agenda, and the development of CCS competences and capacity within Shell.

He worked directly on the Goldeneye CO2 store in the UK North Sea for over six years, and led the team that delivered the storage permit application and storage development plan.

Owain represents Shell in several technical taskforces, such as the UK Subsurface Taskforce, the SPE group developing the Storage Resource Maturation System (as co-chair), and the Oil & Gas Climate Initiative Storage Working Group.

He is on the executive committee of the IEA GHG R&D programme, the board of the UKCCSRC, the UK CCS ISO mirror committee, and is a co-chair of the ZEP technology taskforce. He is also an Honorary Associate Professor at Heriot-Watt University where he lectures in CO2 storage.

Since 1995, Owain has worked in Shell as a reservoir engineer, economist and eBusiness consultant, and at McKinsey & Company as a strategy consultant. He studied Physics and Geophysics at the University of the Witwatersrand in Johannesburg, South Africa; and holds a D.Phil in Experimental Solid State Physics from the University of Oxford.

11:25 - 11:50

Building a Full Industrial CCS Value Chain. Mette Lind Fürstnow, Project Greensand Manager, INEOS Energy

Project Greensand is progressing with important milestones reached since the successful pilot injection back in 2023.

In 2024, DNV Storage Site Endorsement certification of the Nini West field was obtained and INEOS and its partners Harbour Energy and Nordsøfonden reached the Final Investment Decision (FID). The project is now moving ahead with a full industrial CCS value chain to start-up permanent CO_2 storage by late 2025/early 2026.

The presentation will highlight the progress made and Mette will in addition address how critical cross disciplinary collaboration and alignment with the value chain and the authorities is to succeed in CCS upscaling in Denmark.

11:50 - 12:15

Preparing for Large Scale CO2 Storage in the Danish North Sea. Esbern Hoch, Senior Business Developer, TotalEnergies

TotalEnergies is engaged in CO_2 storage licenses in Denmark, aiming to establish safe, large-scale, and commercially attractive CO_2 storage solutions for hard-to-abate emitters in Denmark, Northwest Europe, and the Baltic region. This is a cornerstone in the green transition, creating new business opportunities while addressing climate goals.

CO_2 storage projects involve numerous stakeholders, from emitters to transportation and storage experts, each playing a crucial role. TotalEnergies is directly involved in projects like Project Bifrost and plays a pivotal coordinating role with segment partners, authorities, and local communities.

This presentation will provide insights into TotalEnergies' commitment to building a large-scale commercial CO_2 storage business in Denmark, highlighting key challenges and opportunities.

12:15 - 12:40 **Coffee break and networking**

12:40 - 13:05

First Danish full-scale CCS project: Ørsted Kalundborg CO2 Hub. Kathrine Høeg Johansen, Program Director Kalundborg CO2 Hub, Ørsted

Kathrine Høeg Johansen is Program Director for Ørsted Kalundborg CO_2 Hub, Ørsted's carbon capture and storage project.

Ørsted Kalundborg CO_2 Hub was awarded a 20-year contract by the Danish Energy Agency in 2023, and Ørsted is now constructing the two carbon capture facilities designed to capture and store carbon emissions from the woodchip-fired Asnæs Power Station in Kalundborg and the straw-fired boiler at Avedøre Power Station in Greater Copenhagen.

The goal is to capture and store 430,000 tonnes of biogenic CO_2 annually from 2026. The project will contribute significantly to realising the politically agreed Danish climate goals for 2025 and 2030.

In addition, Microsoft has entered into an agreement (with Ørsted) to offtake carbonremoval – one of the world's largest (offtake) agreements for carbon removal by volume to date.

13:05 - 13:30

ACCSION carbon capture project at Aalborg Portland. Jesper Sand Damtoft, Group Sustainability Director, Cementir Holding

Aalborg Portland has been granted € 220 million to establish a full-scale carbon capture plant at the Aalborg Portland cement plant.
1.4 million tons CO2 will be captured and stored by 2030. The project leverage on onshore CO2 storage and infrastructure being developed in the northern part of Jutland.

13:30 - 14:30

Lunch and networking

14:30 - 14:55

Onshore storage of CO2 in Denmark - key learnings from ten months in CO2 Storage Kalundborg. Ulrik Olbjørn, Managing Director, CO2 Storage Kalundborg, Equinor

This presentation will explore the CO_2 Storage project in Kalundborg, detailing its objectives, stakeholders, and the key phases of the exploration process, including the ongoing seismic surveys and plans for the first exploration well.
It will highlight the permitting process and lessons learned in securing necessary approvals for these activities.
Additionally, the presentation will discuss the importance of public engagement, sharing strategies for fostering effective dialogue with local communities and addressing potential opposition.

14:55 - 15:20

Harbour Energy as leading CCS driver in Europe and deep dive into the Project Greenstore, the largest onshore CO2 storage project in Denmark. Steinar Kolstø, Country Lead, Harbour Energy Denmark

Harbour Energy is a UK-based international energy group with CCS licences in Norway, UK, and Denmark. Even though the company itself is just over ten years old, it is founded on a series of acquisitions of recognised European energy companies, many with over 100 years of history.

In the licence round in the summer of 2024, Harbour Energy was awarded the largest onshore CCS licence in Denmark, Greenstore, which spans an area of almost 500 km2 between Randers and Hobro. Together with our partners in the licence, INEOS Energy, and the state-owned subsoil company Nordsøfonden, Harbour Energy is now fulfilling the obligations that come with the licence.

This presentation will provide insights into how Harbour Energy combines significant experience from more than 100 years with the dynamism and agility that characterises a younger company to mature the Greenstore CCS project.

15:20 - 15:45

Enabling Meaningful Dialogues: Introducing a Tool for Interest-based Negotiations. Miriam Holst Jensen, Postdoc, Aalborg University

This presentation is based on Miriam's research on the miscommunication found in the intermunicipal planning process for the Danish river landscape of Gudenå from 2020-2022. In the talk, Miriam will zoom in on a concrete negotiation tool that she developed with WSP through her research, which she believe is particularly suitable for facilitators involved in citizen dialogues on Carbon Capture and Storage (CCS).

The tool is anchored in interest-based negotiation theory and Miriam's research findings from her participation and intervention in the so-far most ambitious attempt to foster common dialogues across both local, regional and national actors regarding the future for the river landscape of Gudenå.

The tool consists of seven concrete "clarification points" that can be used as a preparatory list for negotiations, during negotiations themselves, or as part of a broader communication strategy.

15:45 - 16:05

Coffee break and networking

16:05 - 16:30

How has Exploration activities reduced risks and uncertainties of our storage complex to date? Charlotte Laurentzius, Exploration Manager, CarbonCuts

CarbonCuts' exploration work program, now 11 months into the Ruby Exploration license, has been and will continue to be instrumental in addressing critical risks associated with the storage complex, including containment and leakage, injectivity, and storage capacity.

With close to one year as an Operator, the exploration program has made significant strides, with three major activities executed to date: 3D seismic acquisition and processing, the re-entry of the legacy well Rødby-2 and several public meetings.

Besides safe operations, the public awareness and acceptance are among our highest priorities, and significant efforts have therefore been made in engaging local communities through open and honest dialogue – without their support, no license to operate.

The efforts to date have already begun to reduce risks and uncertainties, paving the way for a more secure and efficient storage complex

In this presentation, the main results from these early exploration and engagement activities and their impact on the overall exploration strategy will be discussed.

16:30 - 16:55

Lars Bo Christiansen, President, Norne Climate Impact

16:55 - 17:20

Using Environmental Monitoring to Build Stakeholder Trust. Katherine Duncker Romanak, Research Professor, The University of Texas at Austin

Environmental monitoring at geologic carbon storage sites is required to ensure environmental protection and account for potential CO_2 emissions in the rare event of leakage. However, a critical yet often overlooked goal of monitoring is to build trust among stakeholders—particularly landowners and local communities—by showing that storage projects are safe, well-managed, and closely monitored. Despite decades of research confirming CCS safety and no recorded leakage to the atmosphere or groundwater, public concern remains, driven by misconceptions and past industrial failures.

Katherine will present a simple, process-based vadose zone monitoring technique using gas ratios (CO_2, O_2, N_2, and CH_4) to distinguish natural soil gas variation from potential leakage, without requiring extensive background monitoring. The method was successfully used near the IEAGHG Weyburn-Midale Project in Saskatchewan to address landowner concerns at the Kerr farm, providing rapid, transparent evidence that no leakage had occurred.

The success of this technique highlights the value of responding effectively to stakeholder concerns—regardless of whether leakage is present. It also supports a shift from traditional background monitoring to vadose zone characterization: a more efficient approach based on a one-time, pre-injection assessment of soil gas variability. This method improves responsiveness and communication while maintaining accuracy. Its relevance is especially strong in places like Denmark, where new onshore storage projects have heightened public interest and operators need practical tools to engage communities and build confidence in CCS.

17:20 - 17:30

Closing remarks

17:30 - 19:00 **Poster session and tapas**