CO_2 Transport and Storage directly from a ship: flexible and cost-effective solutions for European offshore storage

Traditional solution for offshore storage requires large, costly infrastructure with immense footprint. Large costs and complexity of CCUS value chains hinder spread of technology especially for smaller emitters and storage operators. The CTS team will investigate how using ships as transport and injection vessels can unlock **CCUS potential and speed up deployment of CCUS technologies**

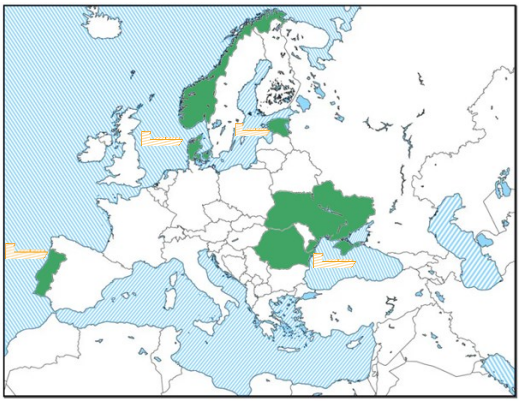
Why?

How?

What are the main benefits of injecting CO_2 from a ship?

- **Decentralized**, flexible and effective matching emitters and storages.
- **Faster** deployment and circumventing limitations of pipeline transport
- **Enhanced** CCUS adoption by smaller emitters / storage operators
- **Ease** creation of European (and global) on-demand CO_2 storage market

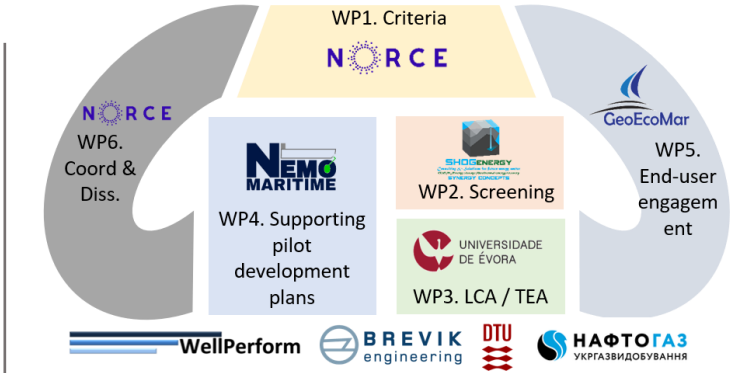
Study regions



What?

The projects' main objective is to **demonstrate techno-economic feasibility of direct injection from ship** to unlock CCS potential for the industry by increasing flexibility and versatility of the CCS value chain as well as to reduce costs. The **secondary objectives** are:

- To create criteria for identifying most fitting conditions along the value chain for application of above said technology.
- To screen for best candidates in the **North Sea**, **Black Sea**, **Baltic Sea** and **Atlantic coast** of Portugal for technology application.
- To design and evaluate CCS value chains with direct injection from ship in the above-mentioned regions, and, to evaluate their potential against existing scenarios or traditional approaches where ships are only used for transportation.
- To establish the dialogue with the stakeholders towards implementation of the technology in the selected regions.
- To make further steps towards piloting the technology.
- To increase awareness and acceptance of CCUS projects in the selected regions.



Partners and work structure

Timeline

Dec 2023 - Project start.

June 2024 - Technology applicability criteria developed.

Nov 2024 - Implementation scenarios developed for all regions.

Dec 2025 - Value chain analysis completed, way forward identified.

CTS project builds on previous projects such as ACT ECO-BASE, H2020 Strategy CCUS, CLINKER and CCUS ZEN and the existing collaboration between NORCE and NEMO Maritime in the NEMO IPN project supported by Research Council of Norway.

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