Northern lights project – a commercial CO2 cross-border transport connection project between several European capture initiatives (United Kingdom, Ireland, Belgium, the Netherlands, France, Sweden) and transport the captured CO2 by ship to a storage site on the Norwegian continental shelf

Cross-border carbon dioxide network

Technical description

Commercial CO2 transport connection project between several European capture initiatives and the storage site on the Norwegian Continental Shelf, as well as providing alternative storage to other CCS projects.

This PCI is located across Europe with promoters in Norway and several Member States (France, Belgium, Netherlands, Germany, Sweden, and Finland). The N-LiTES storage site is located offshore Norway, and the CO2 receiving terminal is at the Energy Park located in the Øygarden municipality, west of Bergen, Norway. The pipeline from the CO2 receiving terminal to the storage site is about 100 km long. The design of the pipeline includes tie-in options to allow for connection to future wells or pipelines. The shipping routes for CO2 from port-based facilities to the CO2 receiving terminal need to be defined. The final shipping logistics will be determined on a per-emitter or emitting cluster basis dependent on buffer storage capacity, capture rate, geographic location and overall shipping optimisation.

The project is developed in two stages:

• Phase 1: Capacity to transport, inject and store up to 1.5 Mtpa CO2, where ca. 800 ktpa reserved for the two capture projects in the Longship. Construction of both on- and offshore facilities commenced in 2021, and Phase 1 is planned to be operational in 2024.

• Phase 2: This phase will allow for expansion of the CO2 receiving terminal to up to 5 Mtpa in line with the market development. Part of the Phase 1 infrastructure has already been designed at a 5 Mtpa capacity, this includes the offshore pipeline, and the umbilical to the offshore template.
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