



The project hopes to capture as much CO2 as 13 per cent of Denmark's annual emissions | Photo source Project Greensand

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'REVERSE OIL RIGS' FOR MASS CARBON STORAGE



A scheme to pump excess carbon into deep-sea reservoirs is already well under way

Spotted: Every year, the world produces over **34 billion tonnes** of CO2 emissions. Increasingly, companies are exploring carbon capture and sequestration/storage (CCS) methods to capture carbon produced by power generation and industry and store it so that it is not emitted into the atmosphere. One particularly promising CCS technology is a pioneering Danish off shore energy transition project that aims to store CO2 emissions in the subsoil of the North Sea as a kind of reverse oil rig.

Project Greensand is commencing through the pilot phase, in which carbon dioxide is captured from the Ineos Oxide factory in Belgium, before being liquified and packed in special containers that are shipped to the Nini West platform in the North Sea. There, the CO2 is pumped 1,800 metres down below the seabed through an existing well and stored permanently in a sandstone reservoir.

The next phase, which has already begun, will see the project expanded to the full Nini Main field. Specially designed cargo ships will shuttle liquid CO2 to the well, where it will be pumped to the reservoirs down dedicated new injection wells. In the final phase, expected to begin in 2025, the storage areas will be expanded to include the so-called 'Siri Fairway', which will expand the storage capacity to around **7.3 million tonnes** of CO2 per year.

When complete, Project Greensand will be capable of storing more than **13 per cent** of Denmark's yearly carbon output. The project is supported by the Danish government and a consortium of 23 Danish and international partners. Neil Taylor, operations director of partner consulting firm Kent,

described Project Greensand as: “among the frontrunners of CO2 storage projects in Europe and has the potential to support Denmark’s and Europe’s wider CO2 emission reduction targets.”

There are a wide number of CSS projects starting up or already running across the world. Some recent innovations spotted by Springwise include the permanent storage of carbon in [peridotite rocks](#), and the use of giant, [algae-filled ponds](#) to sequester carbon.

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Takeaway:

The Greensand project is not only a demonstration of the feasibility of large-scale carbon storage, but it also shows what can be achieved when international companies, research institutes, universities, and startups all work together. Each of the 23 institutions participating in the project, led by Ineos Energy, is contributing its particular expertise. For example, it is the role of UK engineering from Kent to screen the “[full value chain](#)” and scope out elements including “capture sites” on land, liquefaction, onshore storage, and transportation.