

Focused seismic monitoring in the Greensand CCUS project

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Summary

The Greensand project aims to convert the depleted oil fields in the Siri Canyon offshore Denmark into long-term CO₂ storage sites. During the pilot CO₂ injection project, a novel focused seismic monitoring method developed by SpotLight was tested. We conducted a seismic baseline acquisition prior the first CO₂ injection as well as monitoring surveys during and after the pilot campaign. A special processing flow was developed to increase signal/noise ratio and comparability to vintage 3D seismic data for the newly acquired focused seismic data. We were able to detect the change in subsurface CO₂ concentration when comparing baseline with monitoring surveys in correlation to synthetic modelling results. We have proven with the seismic monitoring of the Greensand pilot CO₂ project that the tested method can therefore be used as a smart and lean monitoring tool for CO₂ storage projects.