



## **The Norwegian CO<sub>2</sub> Storage atlas with a case study from the Snøhvit field**

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The Norwegian CO<sub>2</sub> Storage atlas has been prepared by the Norwegian Petroleum Directorate at the request of the Ministry of Petroleum and Energy. The main objectives have been to identify safe and effective areas for long-term storage of CO<sub>2</sub> and to avoid possible negative interference with ongoing and future petroleum activity.

The study is based on detailed work on all relevant geological formations and hydrocarbon fields on the NCS. The work is based on several studies as well as data from more than 40 years of petroleum activity.

Several Formations have been individually assessed, and grouped into saline aquifers. The aquifers were evaluated with regard to reservoir quality and presence of relevant sealing formations. Those aquifers that may have a relevant storage potential in terms of depth, capacity and injectivity have been considered.

The methodology applied for estimating storage capacity is based on previous assessments, but the storage efficiency factor has been assessed individually for each aquifer based on simplified reservoir simulation cases. In the petroleum provinces, the storage potential was calculated from the extracted volume of the hydrocarbon in depleted fields. CO<sub>2</sub> storage in abandoned and depleted fields will usually require a careful study of the integrity of the wells which have been drilled into the field.

The Snøhvit field in the Barents Sea was evaluated regarding aquifer support to the CO<sub>2</sub> storage volume in a new injection well using a minimum and a maximum aquifer zone. The aquifer volumes indicate that there are sufficient water volumes available to support the planned CO<sub>2</sub> injection in the Stø Formation. Also an evaluation of the aquifer support to potential CO<sub>2</sub> storage in the Snøhvit Jurassic aquifer consisting of Stø, Nordmela and Tubåen Formation was performed.