

Northern Lights

A European CO₂ transport and storage network

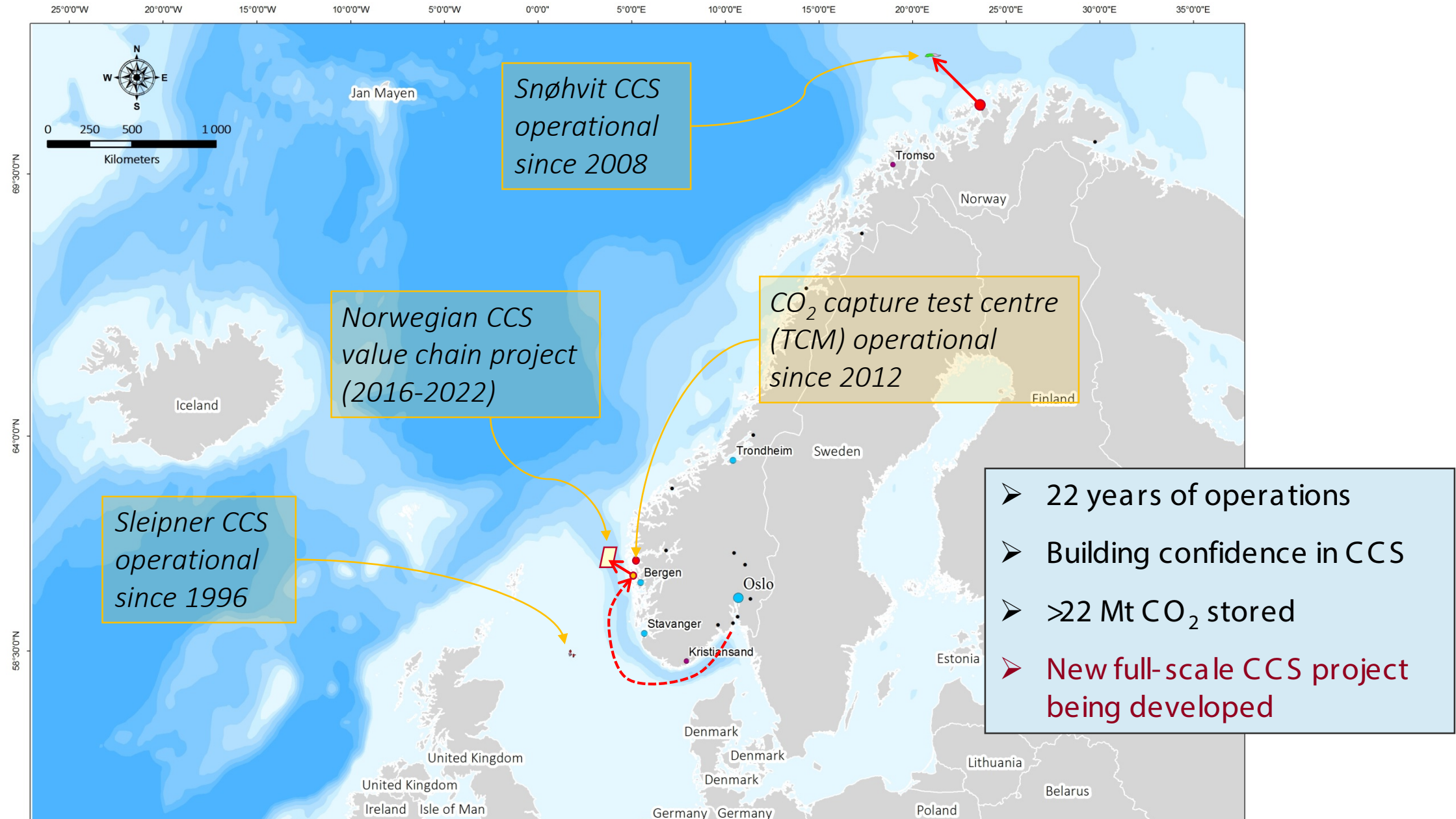
Norway's full-scale integrated CCS project -
Transport and Storage aspects

International Panel on CCS Value at NETL Meeting
Pittsburgh, USA, 29th August 2019

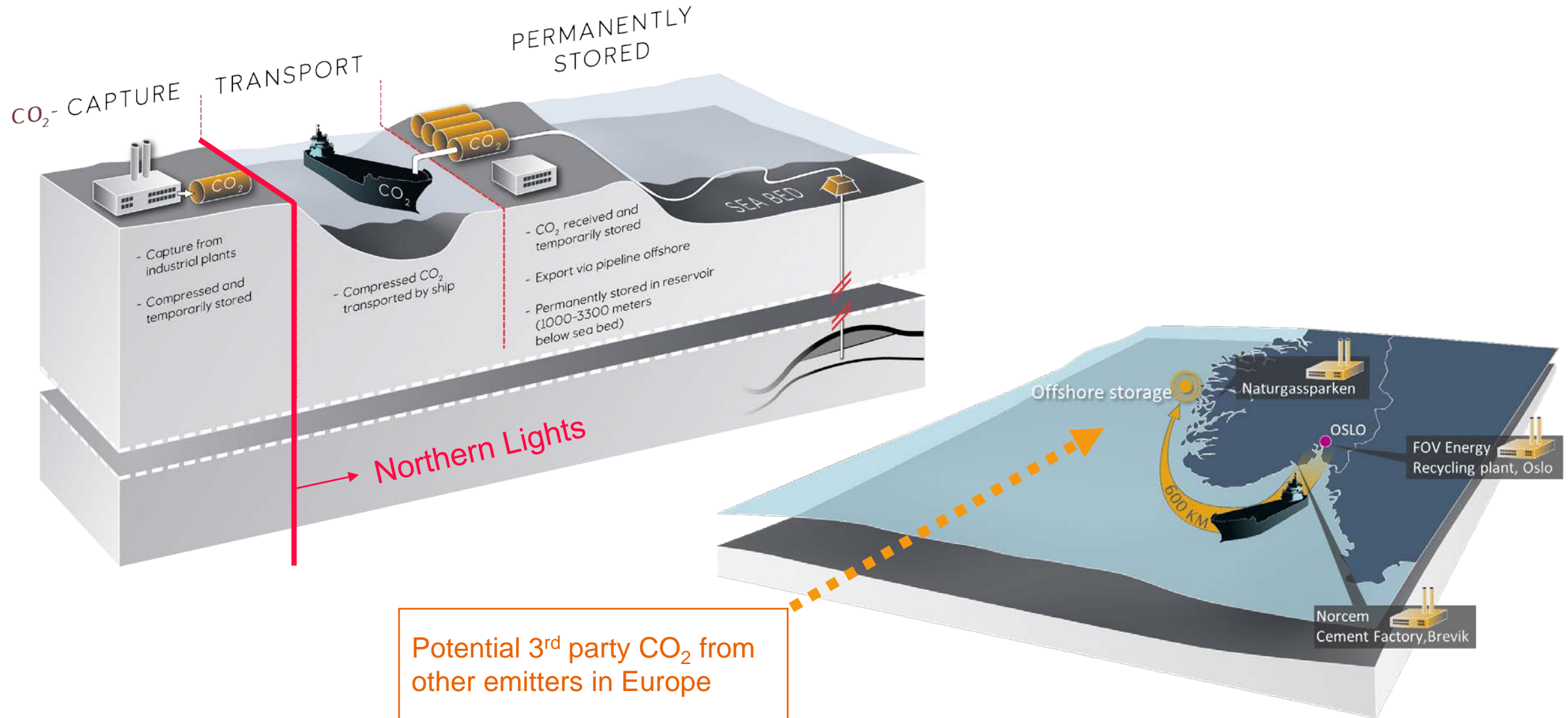
Presented by Philip Ringrose



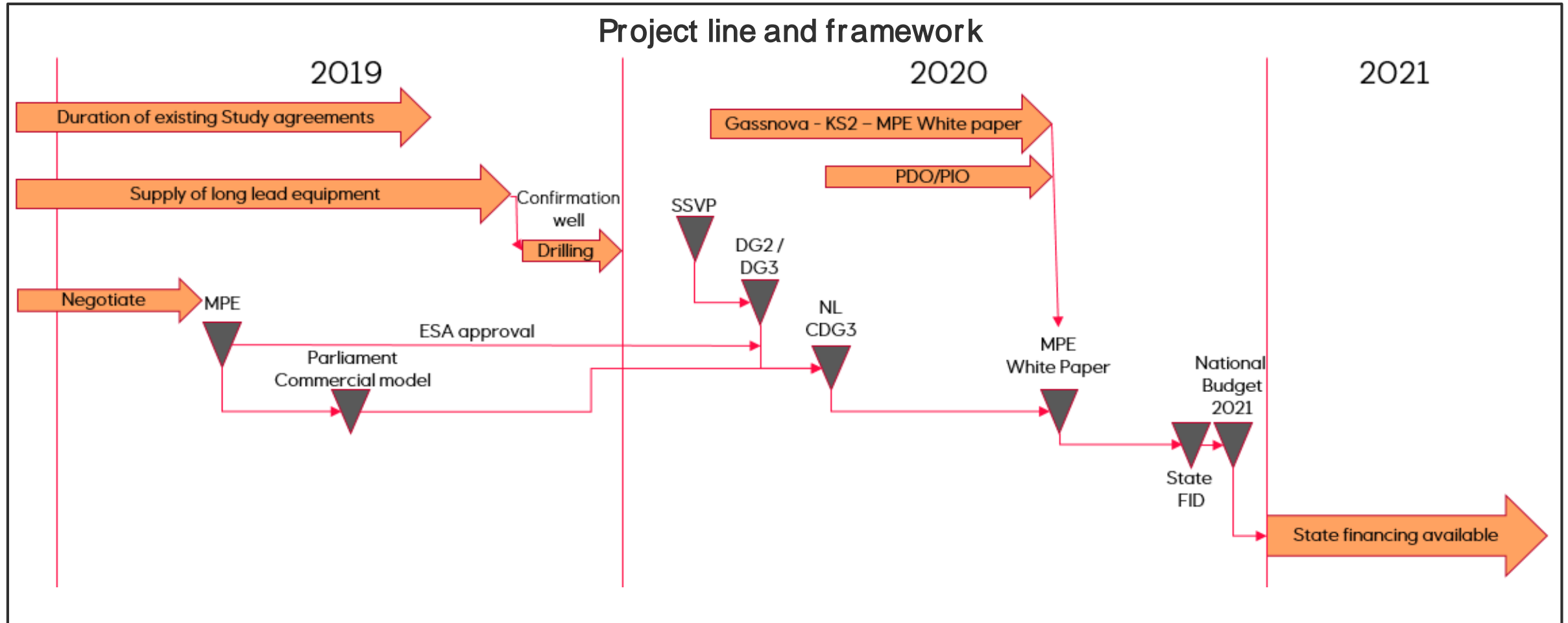
Norway CCS: Building on experience



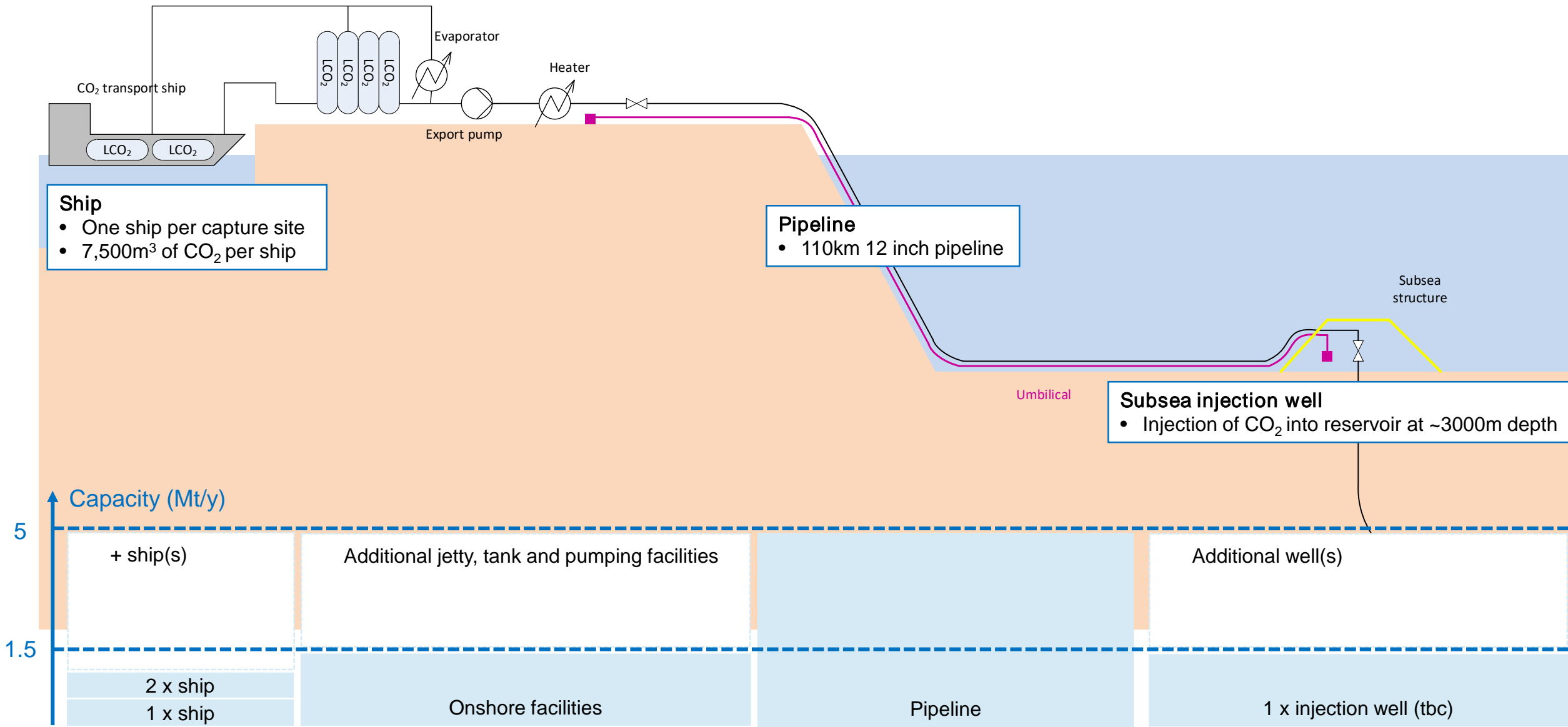
Northern Lights Overview



Project time-line overview

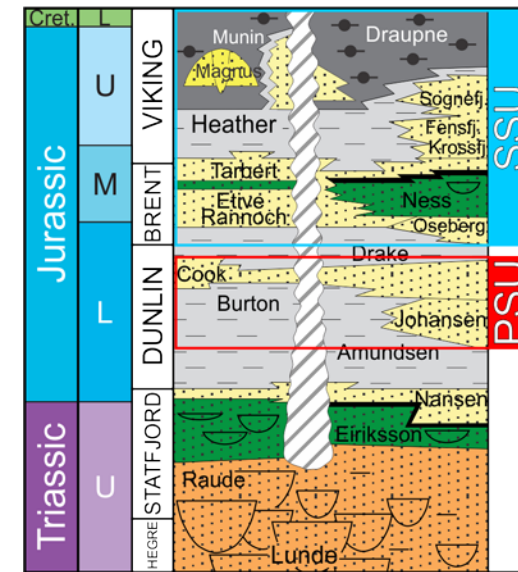
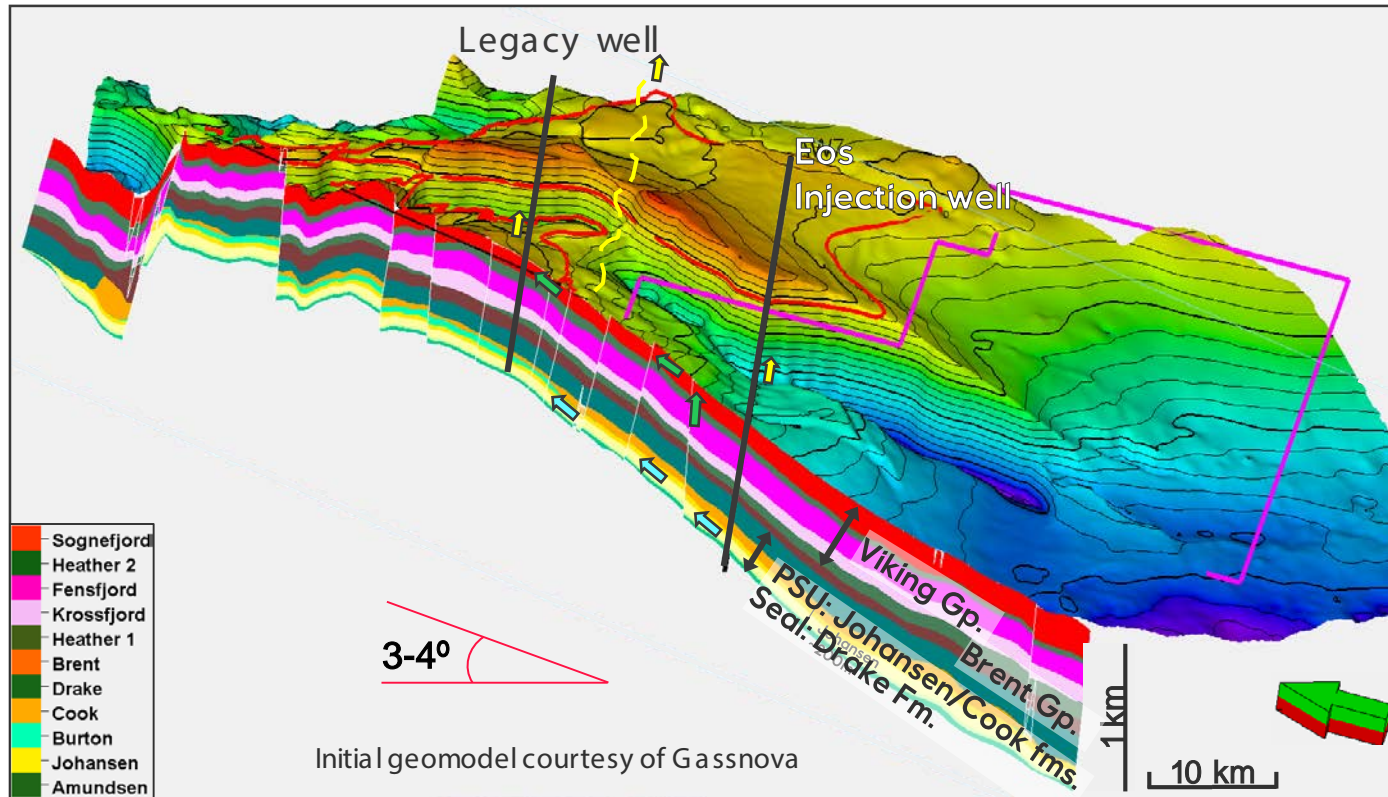


Northern Lights: design concept overview

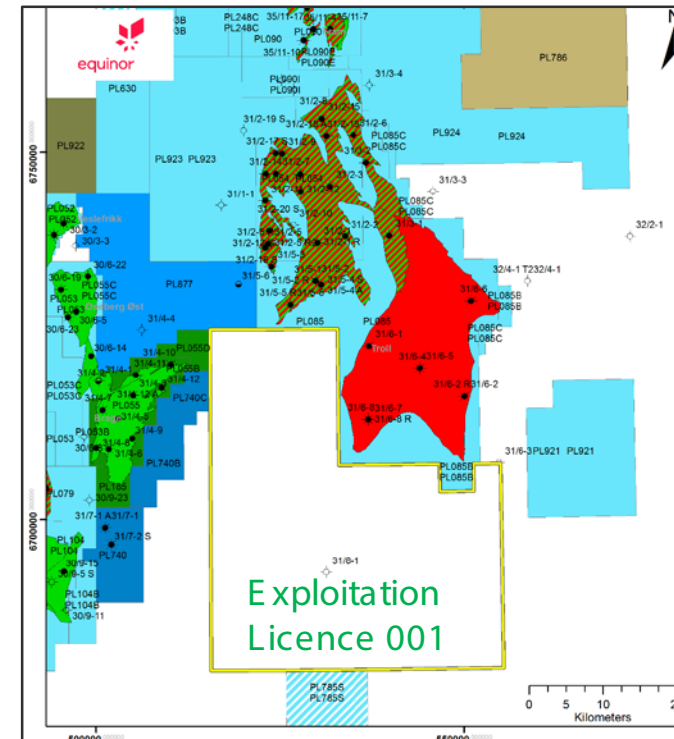


Aurora storage concept

1. CO₂ to be injected in the Lower Jurassic Johansen Formation in “Exploitation Licence 001”, south of producing Troll field
2. CO₂ will migrate up dip (northwards)
3. Aim is to keep the CO₂ plume within the licence boundary until Troll shutdown



PSU: Primary Storage Unit
SSU: Secondary Storage Unit



Screening of 3rd party volumes

- Northern Lights project is currently screening for potential candidates for 3rd party volumes of CO₂ from outside of Norway
- On request from the Norwegian Oil and Gas Association a model has been developed by Endrava (Valentin Vandenbussche) with support from Carbon Limits (Gaëlle Bureau)
- Data from The European Pollutant Release and Transfer Register also used
- Currently reviewing:
 - Sites emitting more than 100 kt/y of CO₂ in Europe
 - Industrial sites producing power and heat, industrial and waste management facilities



Design for onshore terminal in Kollsnes, Øygarden



Northern Lights Summary

- A full-scale CCS project that combines industrial sources of CO₂ from Norway and other countries with safe storage on the Norwegian continental shelf
- **Objective:** Stimulate development of CCS so that long-term climate targets in Norway and EU can be reached at lowest possible costs

