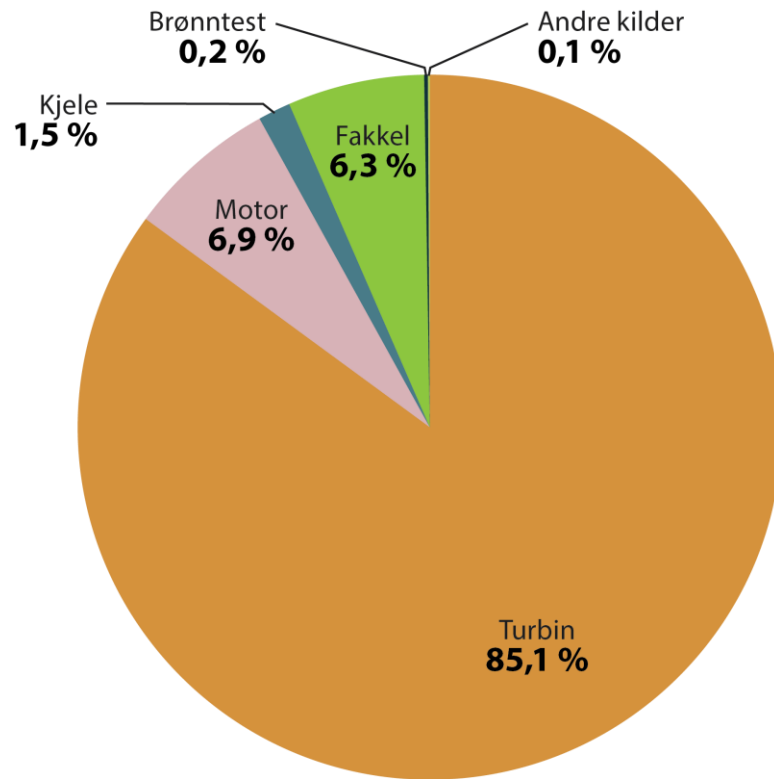


The Longship Project: Whole Value Chain CCUS Demonstration Project on the Norwegian Continental Shelf

Erik Nilsen Rundell, Norwegian Petroleum Directorate



Norwegian emissions



Emissions	Million tonnes CO2 equivalents ²
	2021
Emissions	48.9
Oil and gas extraction	12.1
Manufacturing industries and mining	11.7
Energy supply	1.7
Heating in other industries and households	0.5
Road traffic	8.7
Aviation, navigation, motor equip. etc.	7.5
Agriculture	4.6
Other	2.1



Meld. St. 33 (2019–2020) Report to the Storting (white paper)

Longship – Carbon capture and storage



The Longship Project



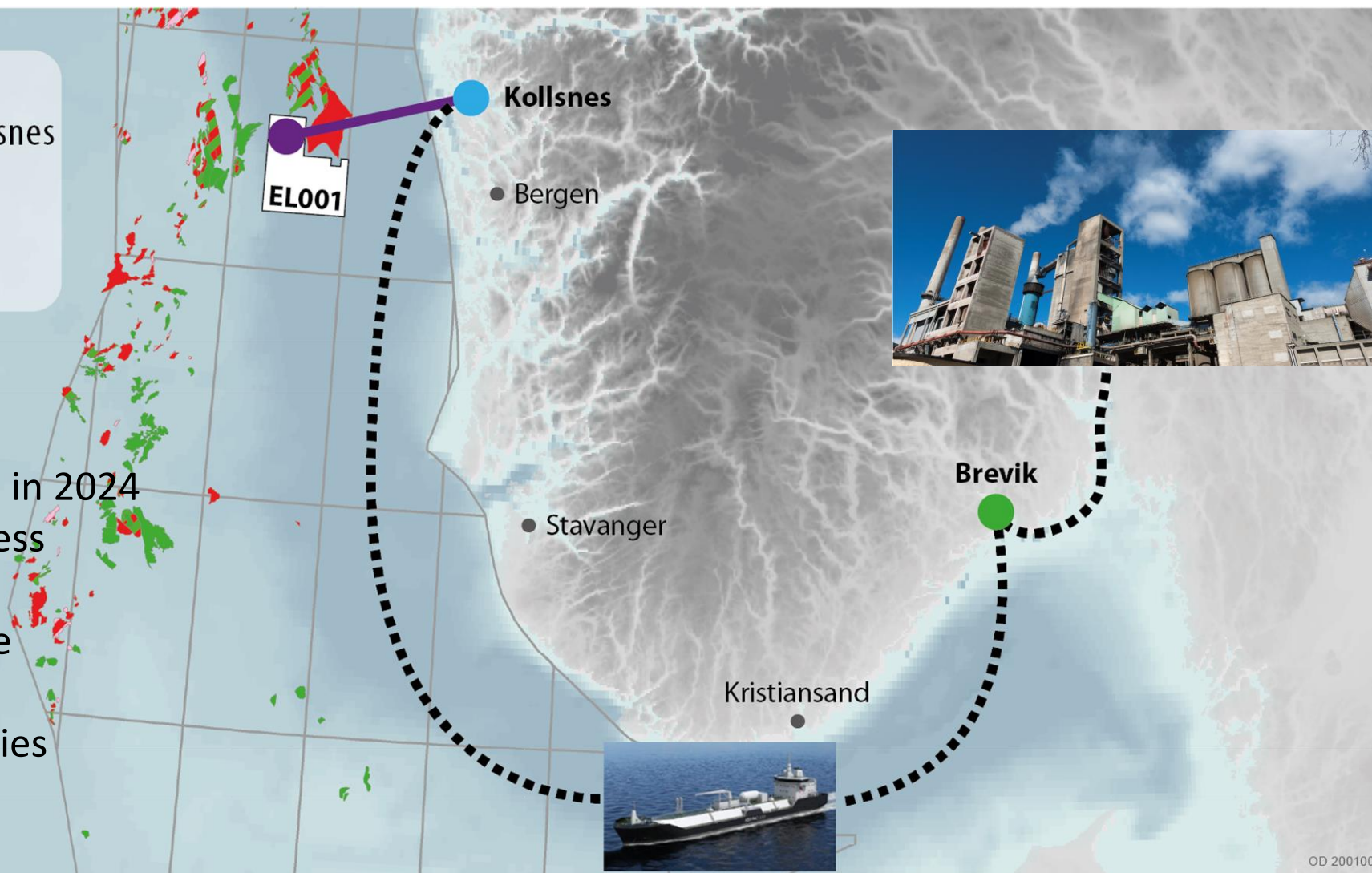
- Paris agreement (2015)
- EU to be climate neutral by 2050
- 50 % reduction by 2030
- No 1,5 degrees without CCS
- Norway can play a part

The *Longship* CCS Project

- Capture plants in Oslo and Brevik
- Onshore CO₂ receiving terminal, Kollsnes
- Permanent CO₂ storage site
- Transport by tanker ship
- Pipeline

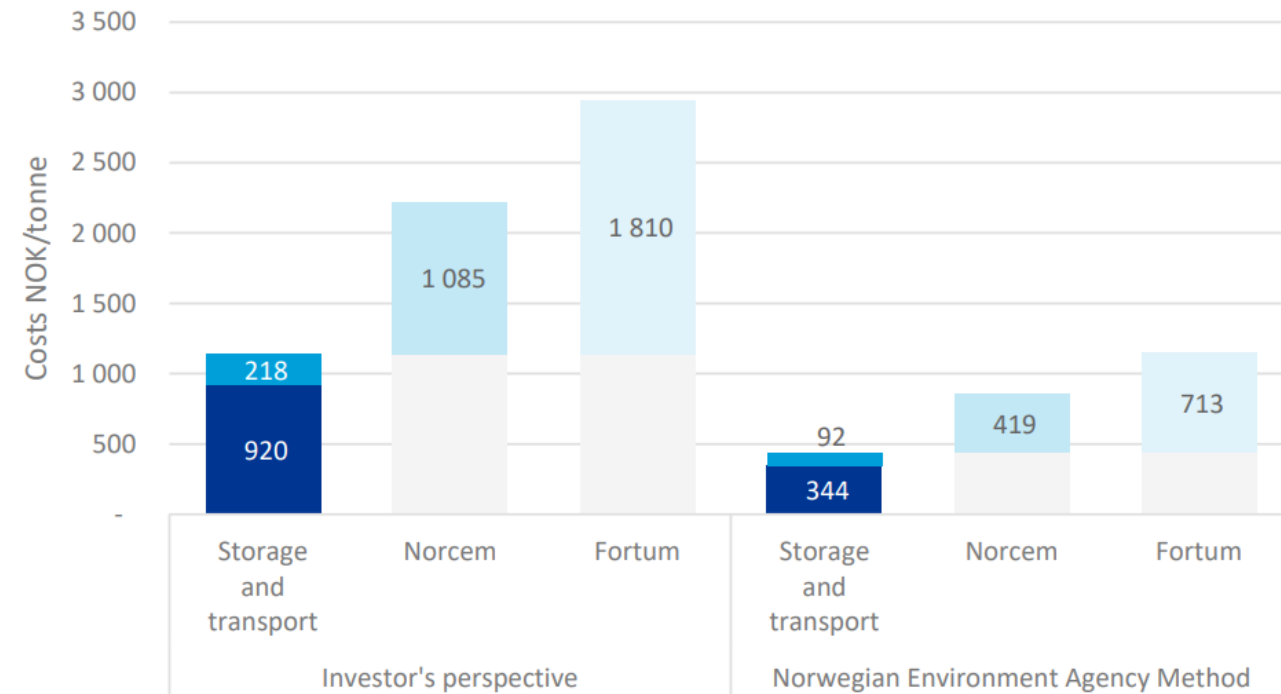
Targets

- Demonstrate value chain, start-up in 2024
- Establish a hub for third party access
- Transborder transport of CO₂
- First project under the CO₂ storage framework
- CO₂ storage from different industries
- Industry and state collaboration
- Supported by NGO's

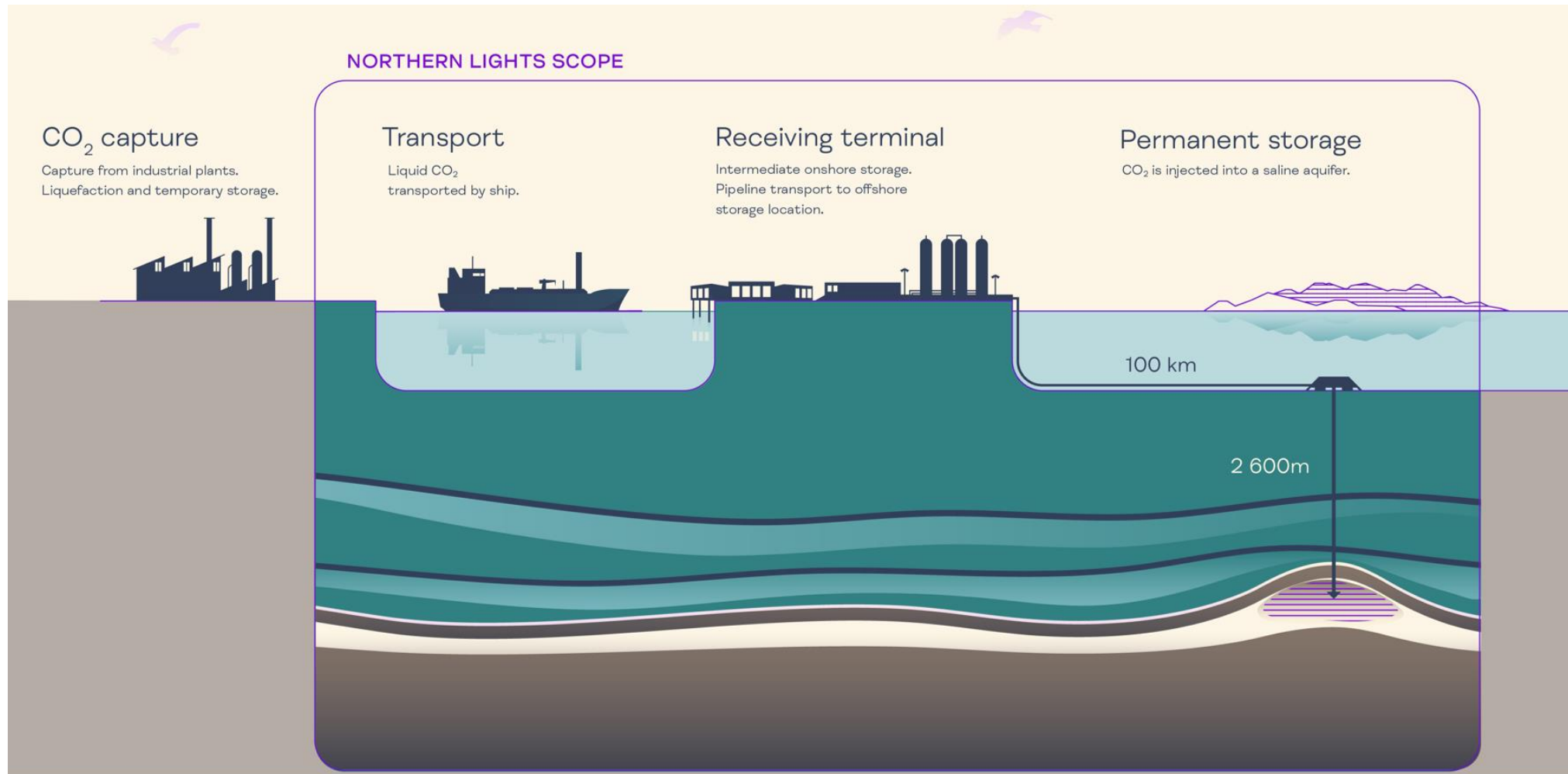


Financing

- Total cost: 25,1 billion NOK
- Governments share: 16,8 billion NOK
- Transport and storage:
 - CAPEX 80%
 - Third ship 50%
 - OPEX sliding support 95-80% over 10 years
 - 80% of extra costs
 - 80% of decommissioning and monitoring



Northern Lights

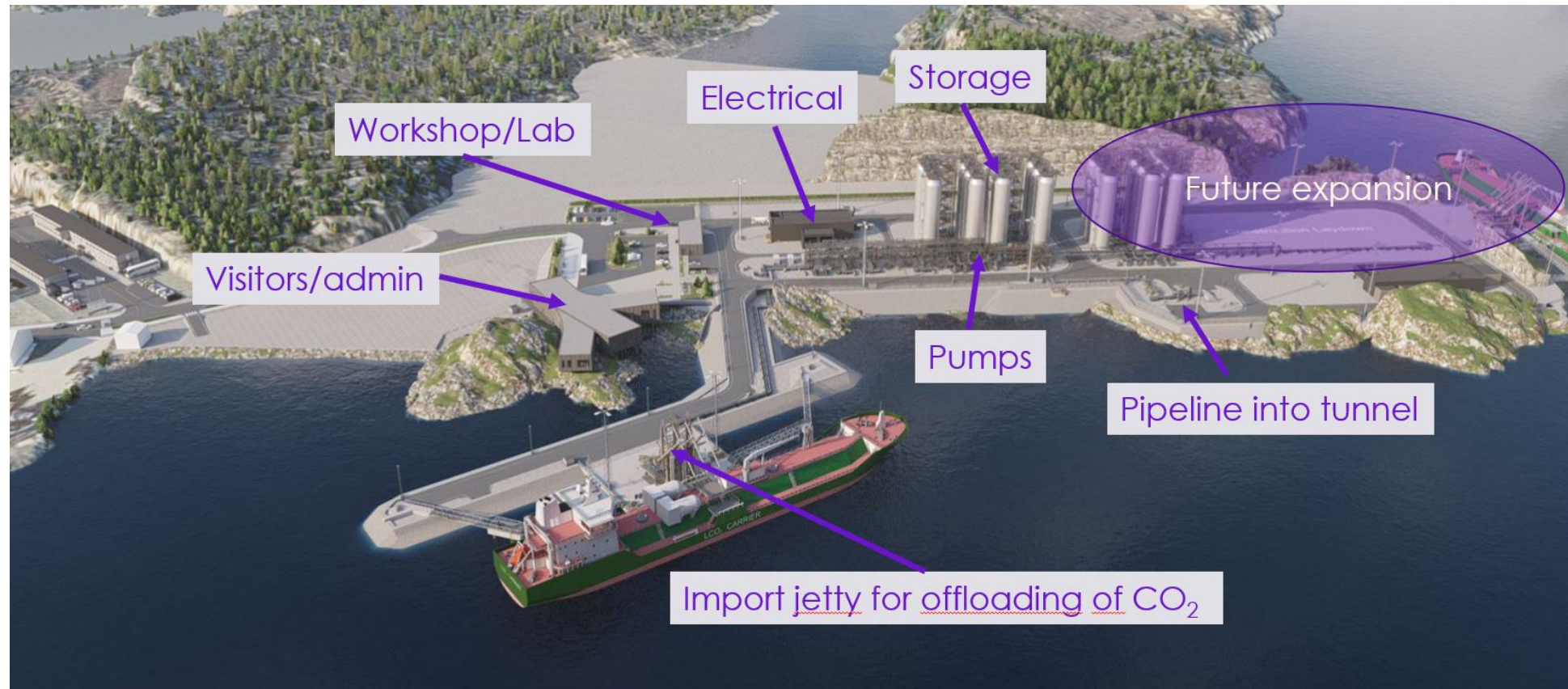


Transportation

- Ship building contracts awarded October 2021 (two vessels)
- Cargo size: 7,500 m³ (8000 tones CO₂)
- Length: 130m
- Medium Pressure cargo containment
 - C. 15 barg and -26°C
- Purpose-built pressurised cargo tanks
- Primary fuel: LNG
- Wind assisted propulsion system and air lubrication installed
 - Will reduce carbon intensity by around 34% compared to conventional systems
- Ready for delivery in 2024
- To be registered in Norway (NOR)
- Additional vessels needed
 - Subject to Phase 2 FID



Northern Lights onshore facilities



Ongoing fabrication work

Fabrication of storage tanks by Idesa, Spain



Fabrication of subsea satellite by Aker Solutions, Egersund.



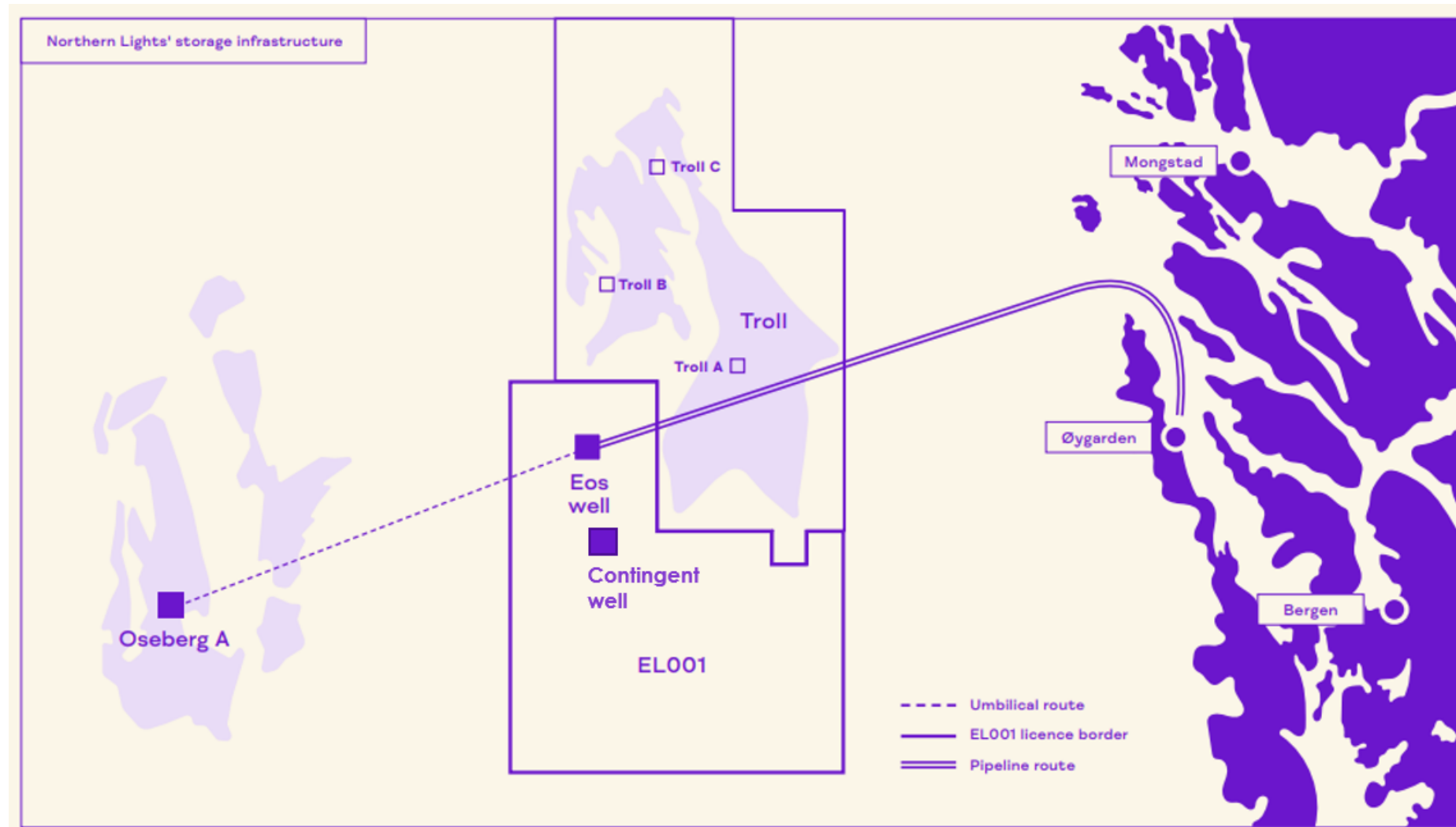
Fabrication of linepipe by Tenaris, Italy. Coating by Shawcor, Orkanger.



Detailed engineering ongoing (STASCO/Dalian, China).



Offshore Facilities



Progress



Thank you for your attention!

npd.no
factpages.npd.no/no
norskpetroleum.no

