

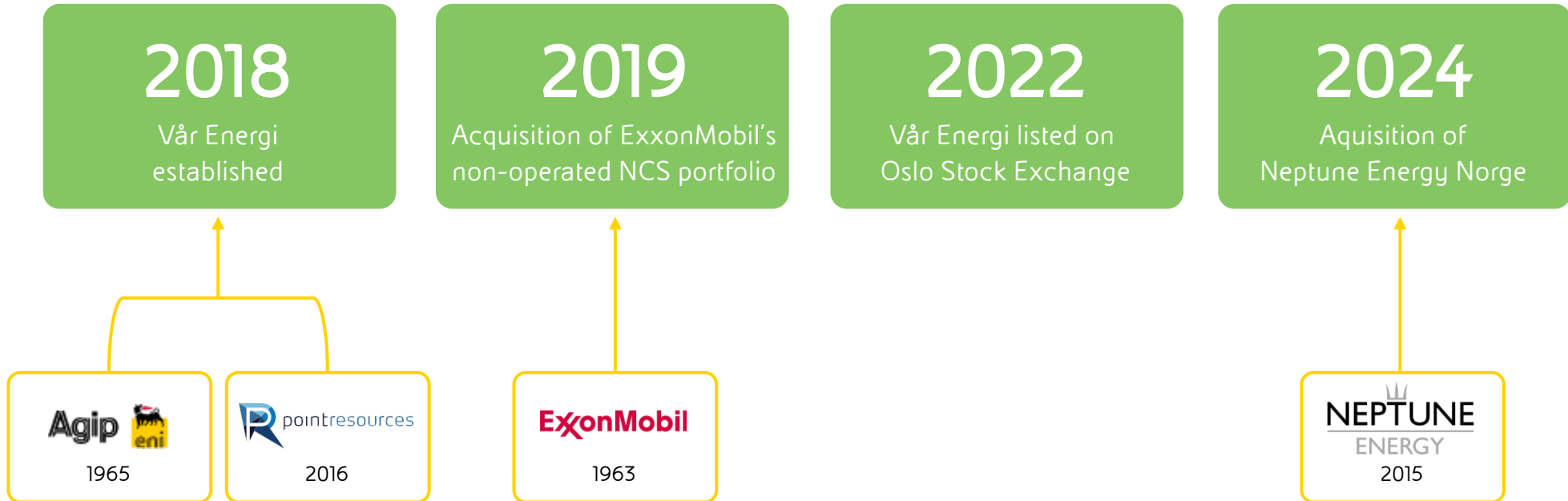
# Balder Area - Key to future growth and value creation

Sindre Wold & Vetle Dalan, Vår Energi



# Vår energi

Building on more than 60 years of experience on the NCS





1. Start-up Q4 2024

# Longevity on the NCS

## Big fields getting bigger

Technology advances

Infrastructure lead developments

Continuous infill drilling

Life-time extensions

## Vår Energi with a strong position

Ownership in  
**>50%**  
of NCS fields<sup>1</sup>

Participating in  
**~40%**  
of NCS exploration wells<sup>2</sup>

1. Per end 2023  
2. In 2024, according to Offshore Norge

# Doubling production with high value barrels



## Delivering growth

10 projects  
in execution

~400 kboepd  
by end-2025



Image: Jotun FPSO at Worley Rosenberg yard in Stavanger, Norway

## Sustaining production

>20 early phase  
projects

350-400 kboepd  
towards 2030



Image: Duva tieback to Gjøa

## Unlocking future value

~60 wells next four  
years

Accelerated  
exploration



Image: Transocean Enabler

Utvinningsstillatelse

for

petroleumsprodukter

Nr. 001

meddelt til

1944 Exploration Norway Inc.

## Balder area

# Utilising new infrastructure

Early phase projects targeting **>100** mmmboe<sup>1</sup>

Balder Phase VI

Balder electrification

Grane infill

King development

Grane gas export and electrification

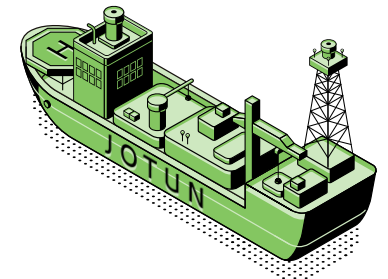
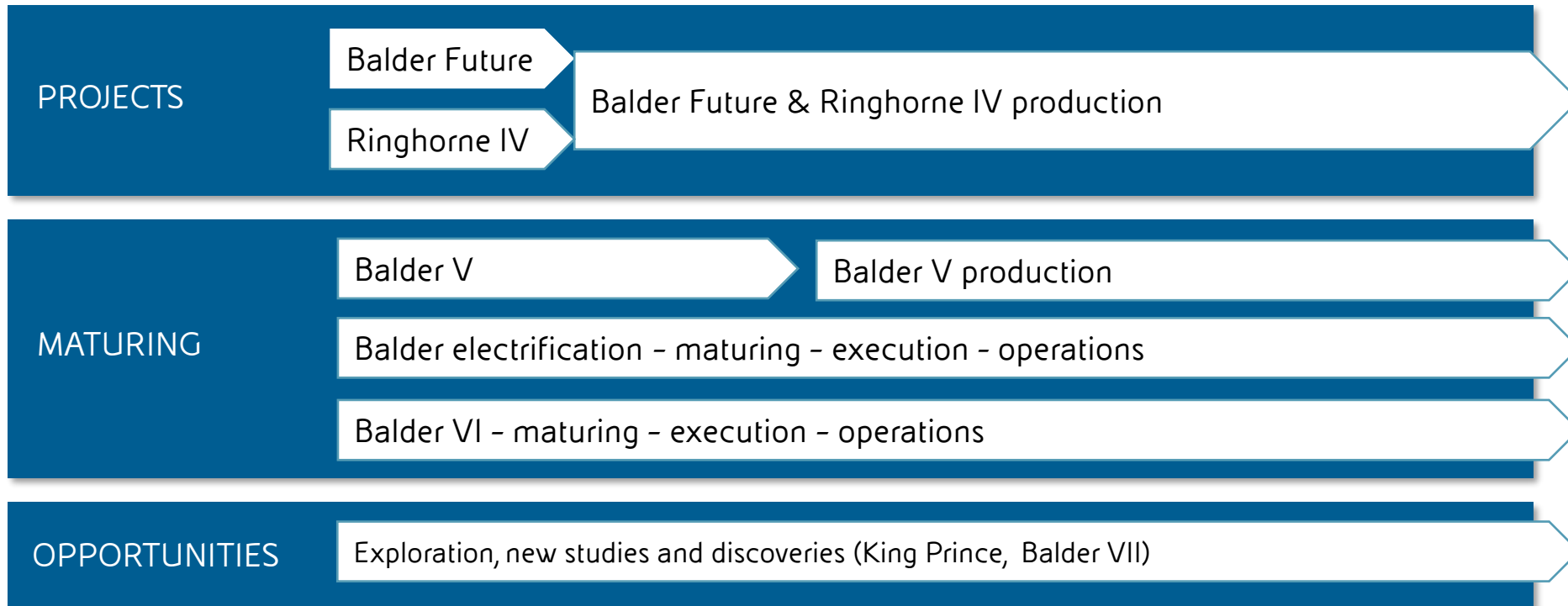
Balder future phases

**>70** infill drilling targets identified

**~10** exploration targets next 4 years



# All time high project activity in the North Sea





# Balder Future - Key enabler for future production

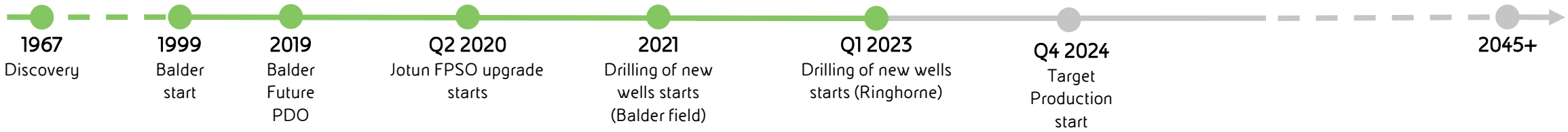
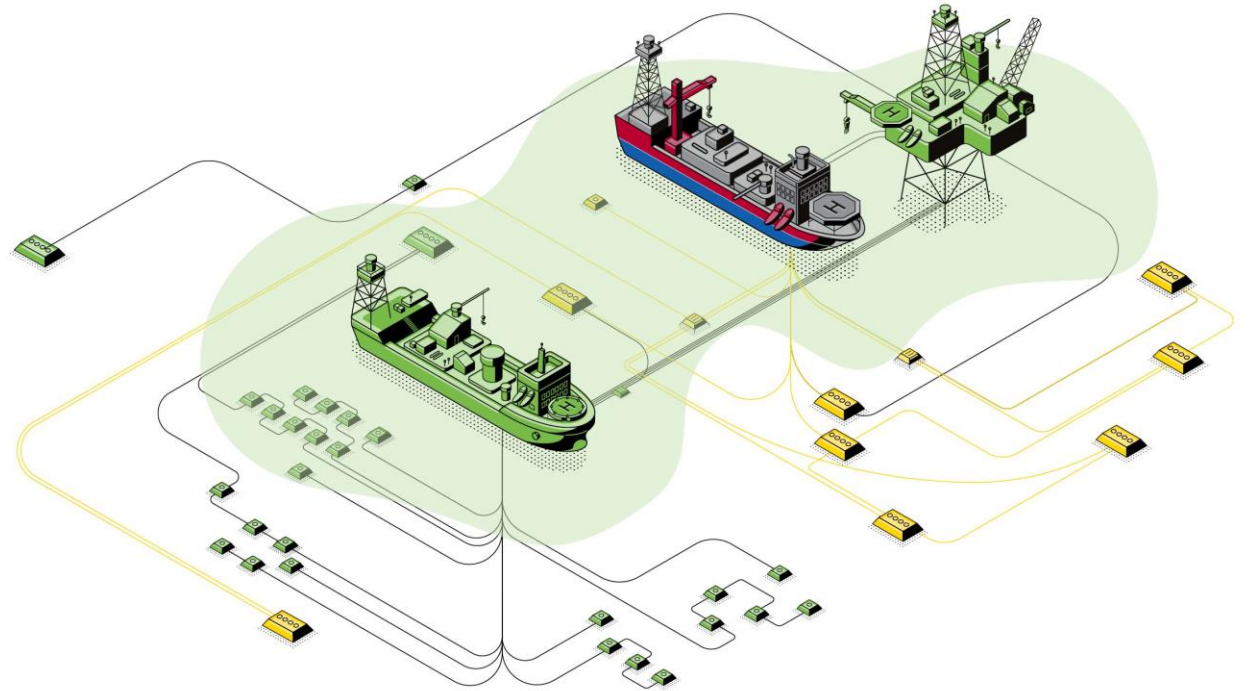
Lifetime extension to 2045+

Jotun FPSO upgrade

70% Norwegian suppliers

30 000 man-years

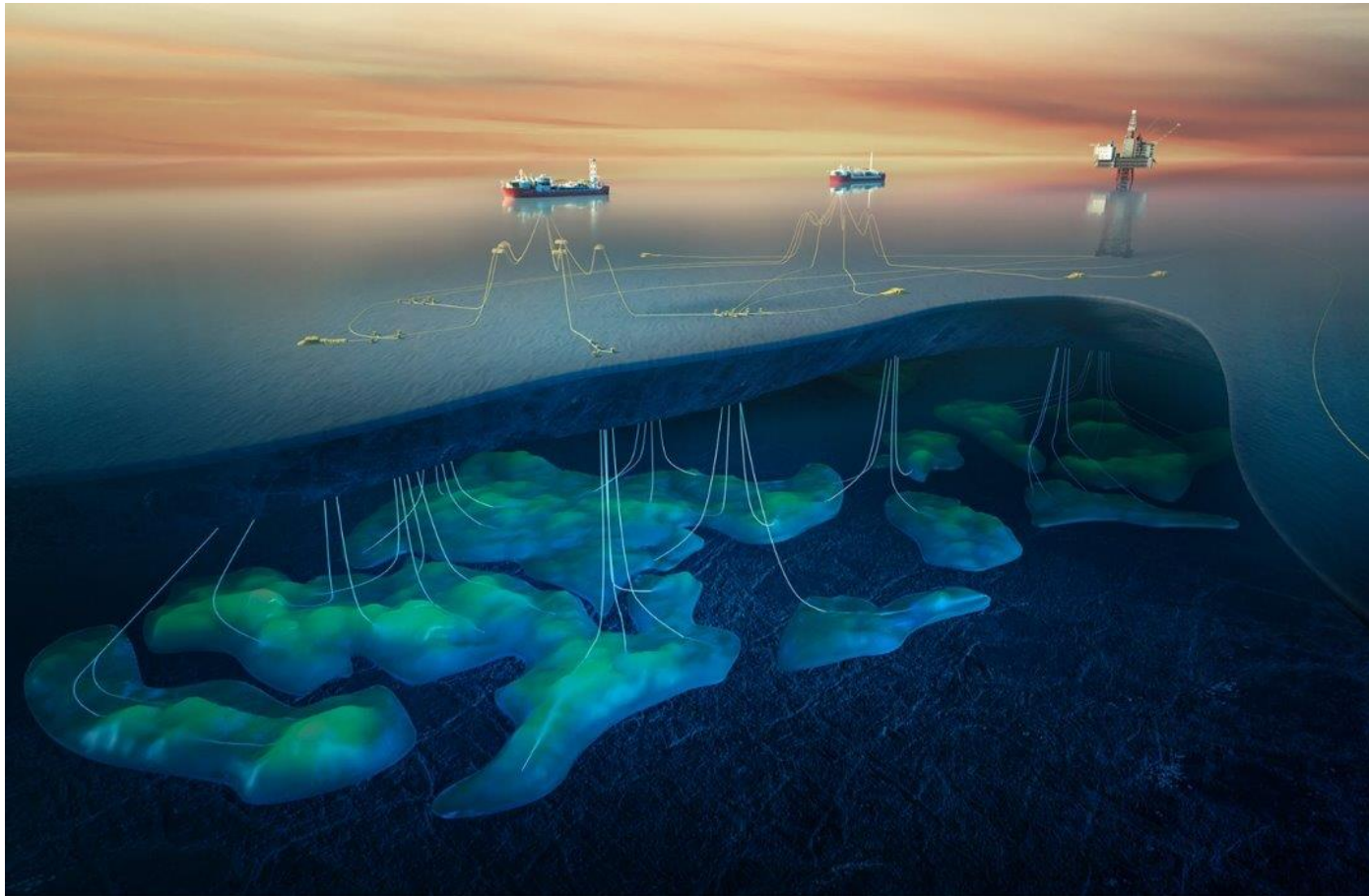
Drilling 15 new wells



# SPS/SURF



# SPS/SURF - Scope overview



## SPS

- 15 Subsea vertical x-mas tree systems;  
14 x producers + 1 x water injector
- 5 Flowbase/template 4-Slot Manifolds
- 1 Water Injector Flowbase
- 16 Tubing hanger systems
- 16 Wellhead systems
- 2 Production riser base structures
- 2 Gas lift riser base structures
- 16 Subsea control modules for x-mas tree systems
- 2 Subsea control modules for Riser Base Manifold
- 6 Subsea leak detection systems
- Topside Hydraulic power unit & Control Cabinets

## Umbilicals

- 6 Umbilicals
- 1 Static fiber-optic cable
- 2 Dynamic risers
- 2 Subsea Distribution units

## Riser and Flowlines

- 10 Flexible risers
- 16 Flexible flowlines
- 5 Mid-water arch structures
- 1 Gas export SSIV structure

# Balder Future Project



# Ocean Installer

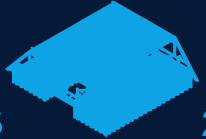
2019 to 2024



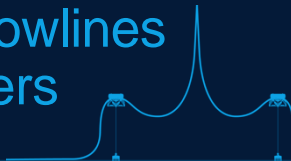
**1,943,427** man hours  
at March 2024

0 Lost time injuries 0 Restricted work-day cases

**21** structures  
2,596Te



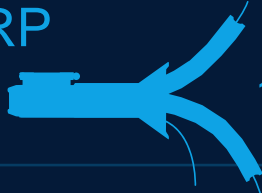
**26** flowlines & risers  
71,438m



**9** umbilicals  
26,041m



**245** GRP covers  
1,253Te



**96,440m** trenched



**137,000Te** rock  
373 locations



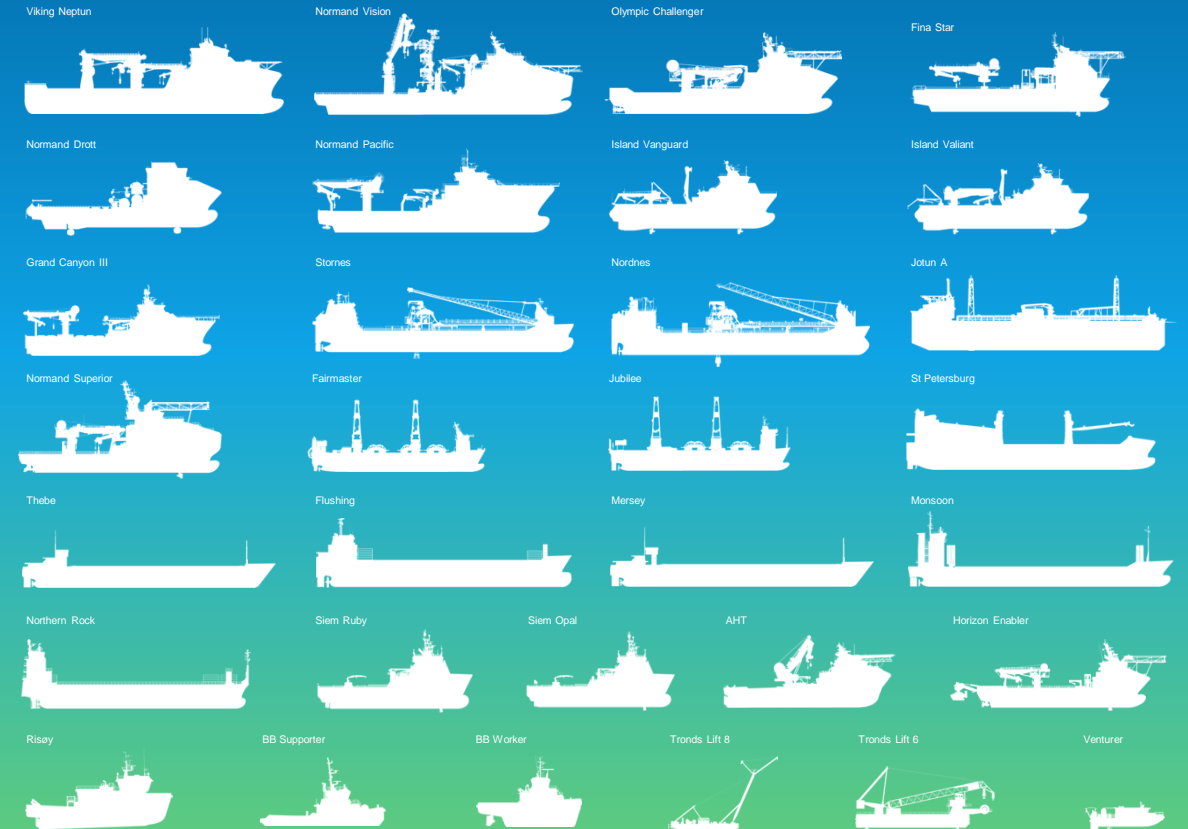
**330** dives



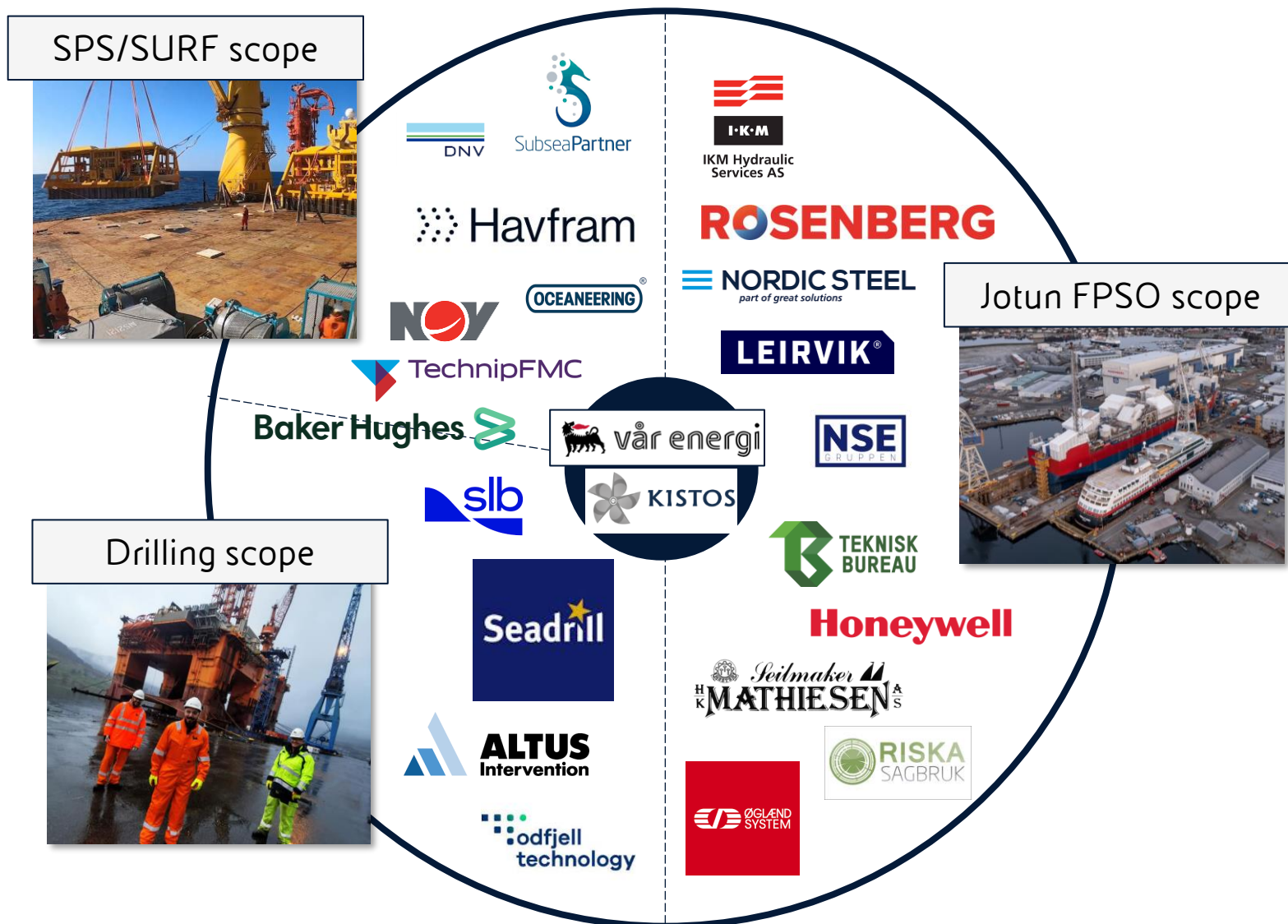
**12** mooring piles & lines  
676Te weight & 16,932m length



**1,630** Vessel days



# Balder Future - One of the biggest industry project in Norway





# Brown field refurbishment - A complex operation

- Technical condition
- System integration
- Regulations
- Vision

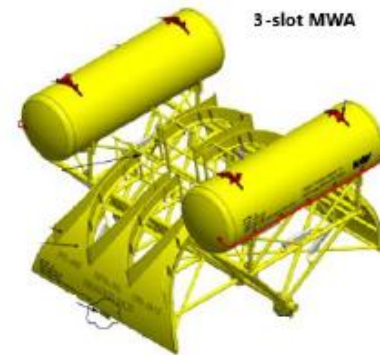
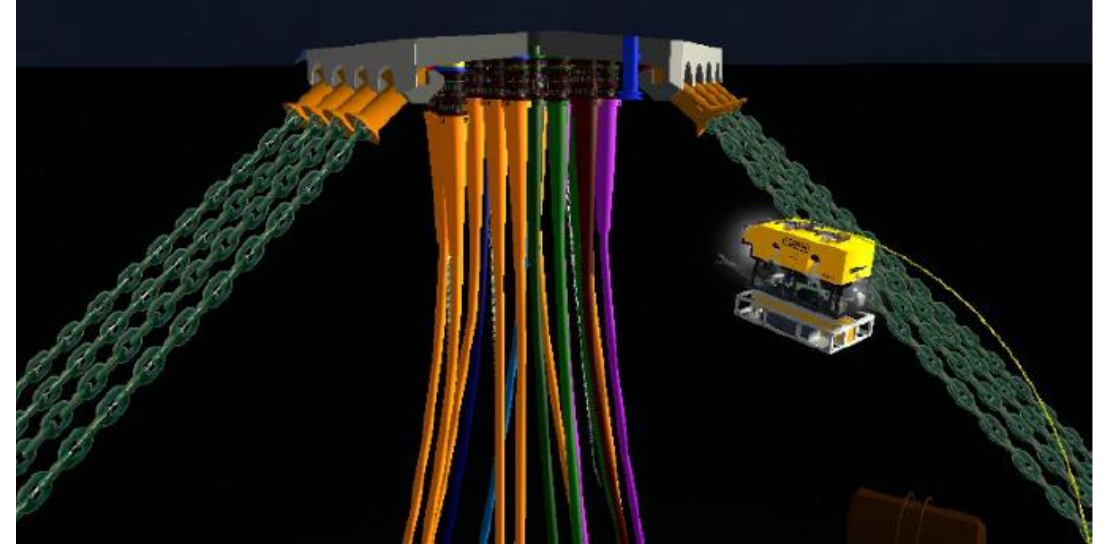
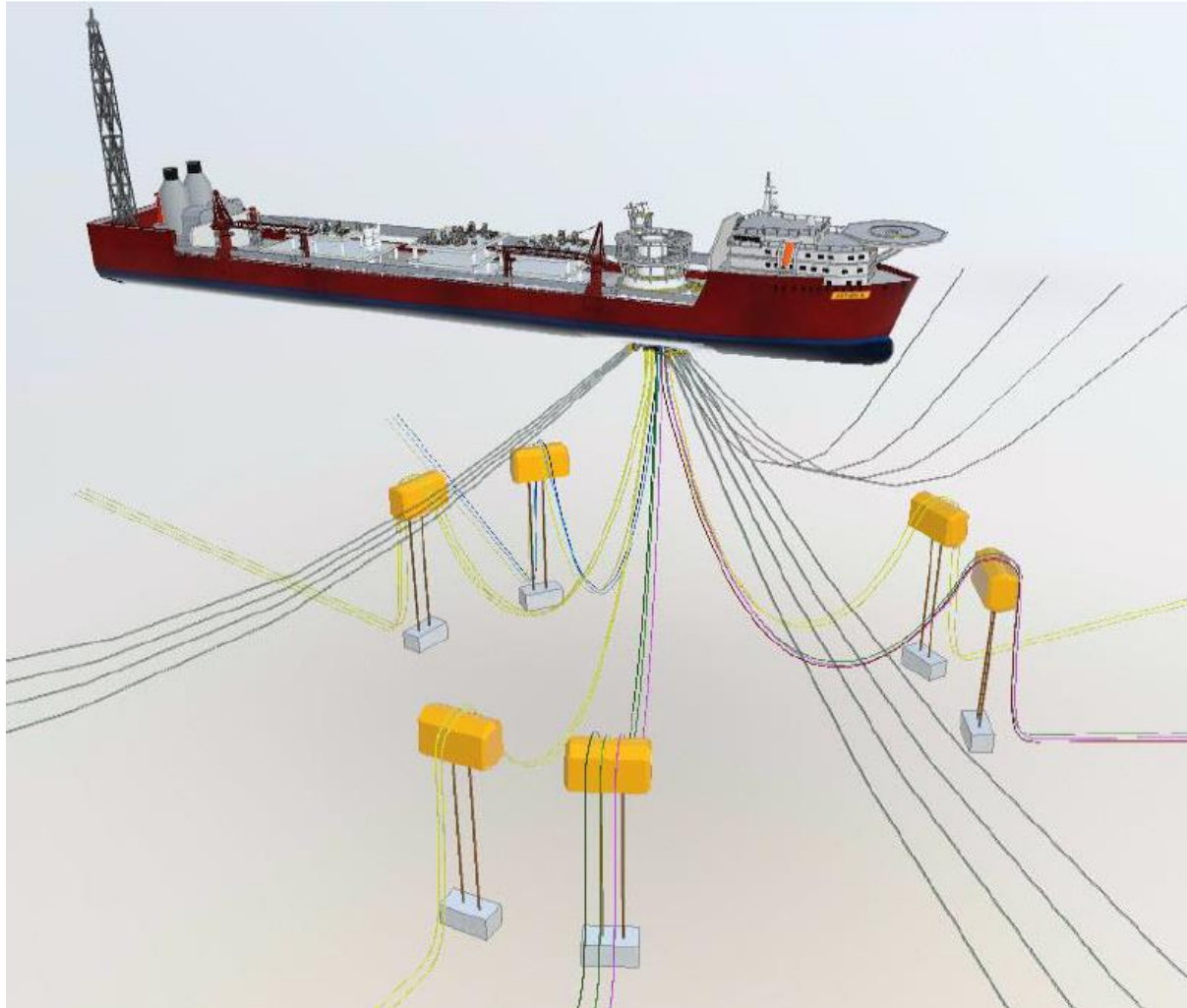


# Riser pre-lay





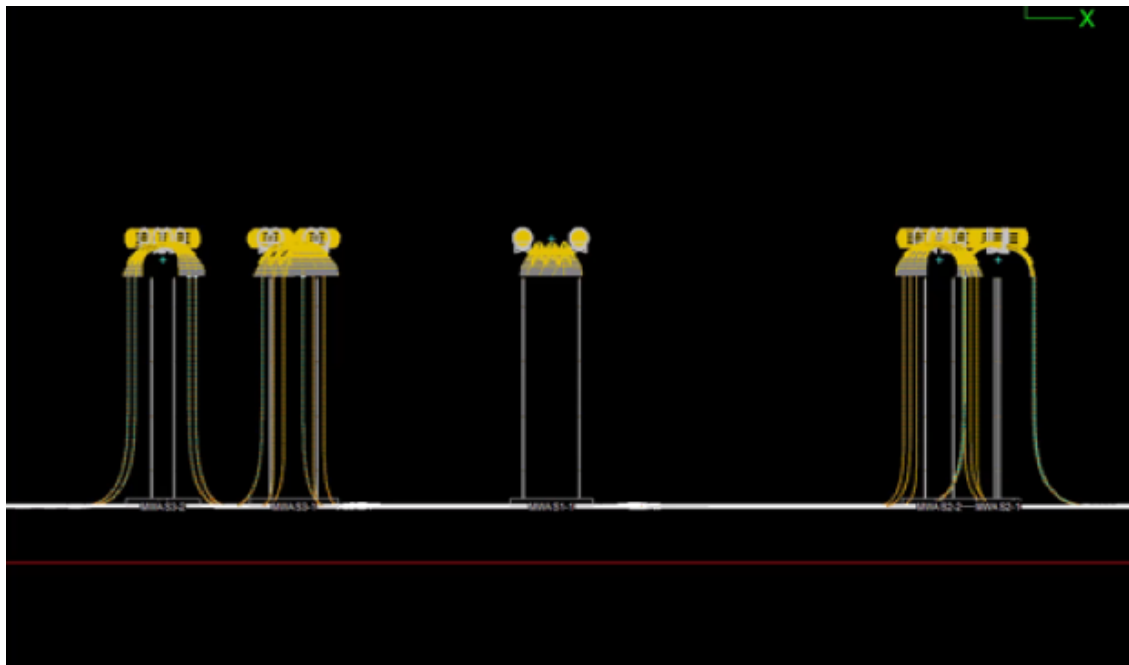
# The Jotun riser system



# Riser pre-lay storage configuration

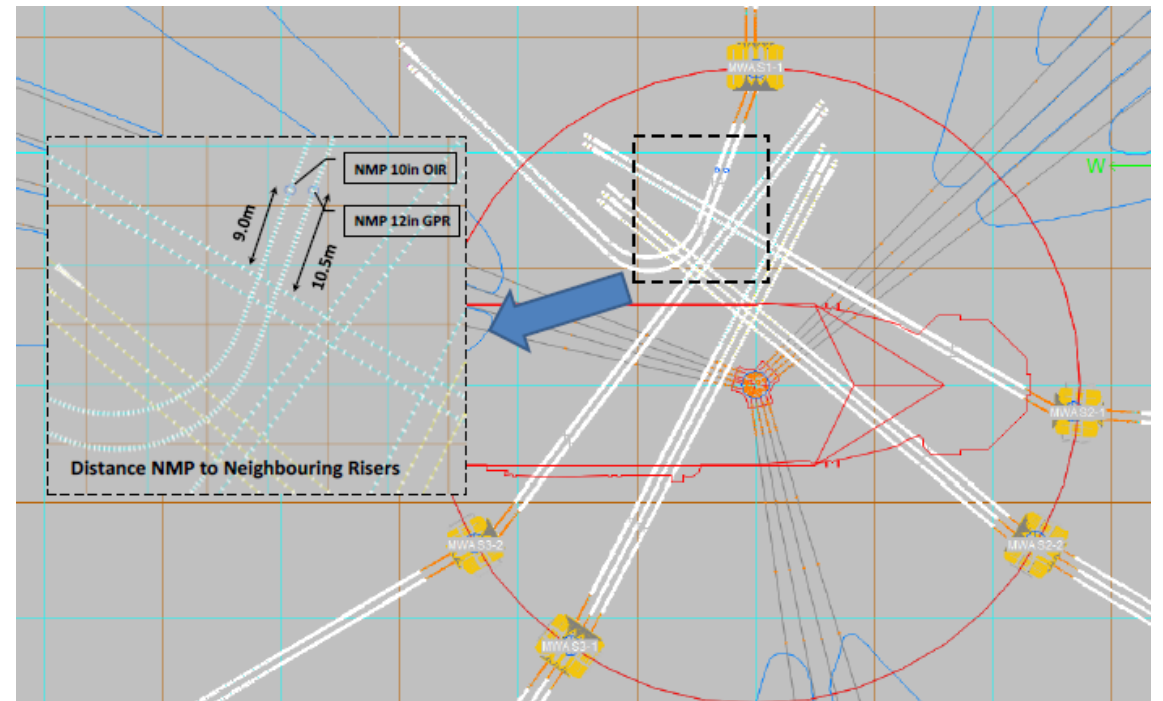
## Challenges

- Shallow water depth in combination with close MWA's
- Wet store configuration to be acceptable for the products
- To be possible to pick-up and pull-in to FPSO



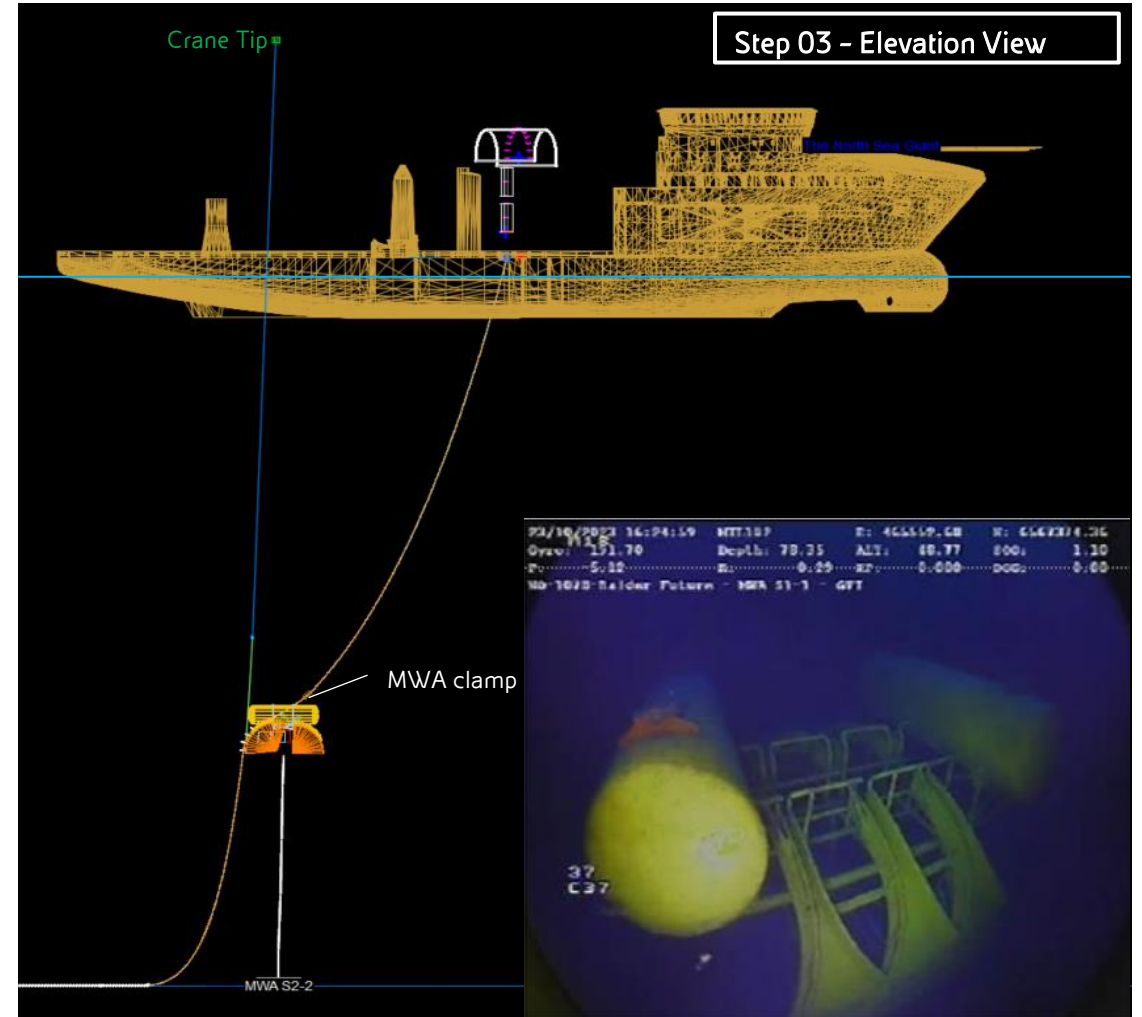
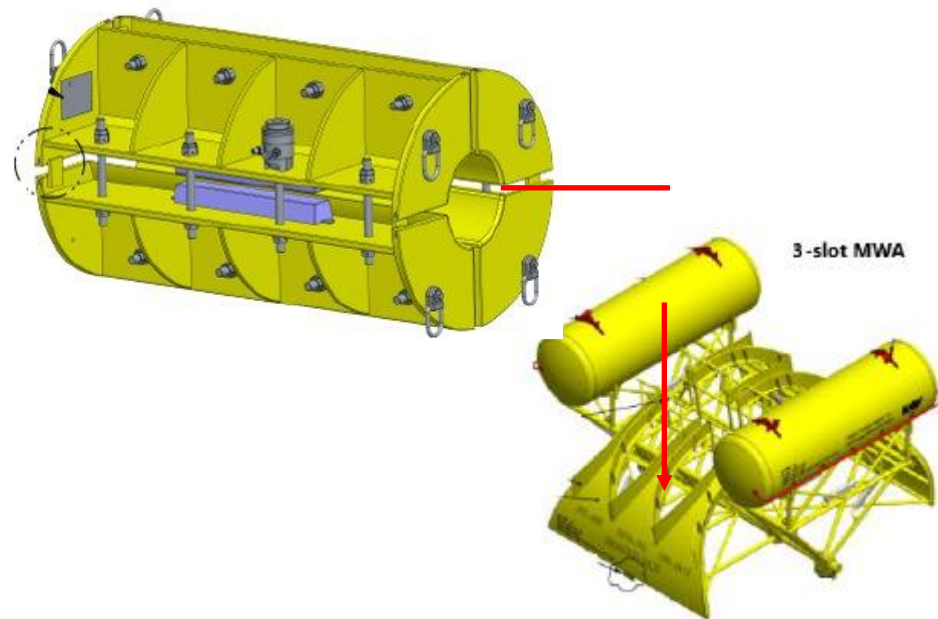
## Configuration particulars

- All straight except for Ringhorne lines
- All ends in northern sector
- Crossing each other - fixed pull-in sequence



# Wet storage installation operations

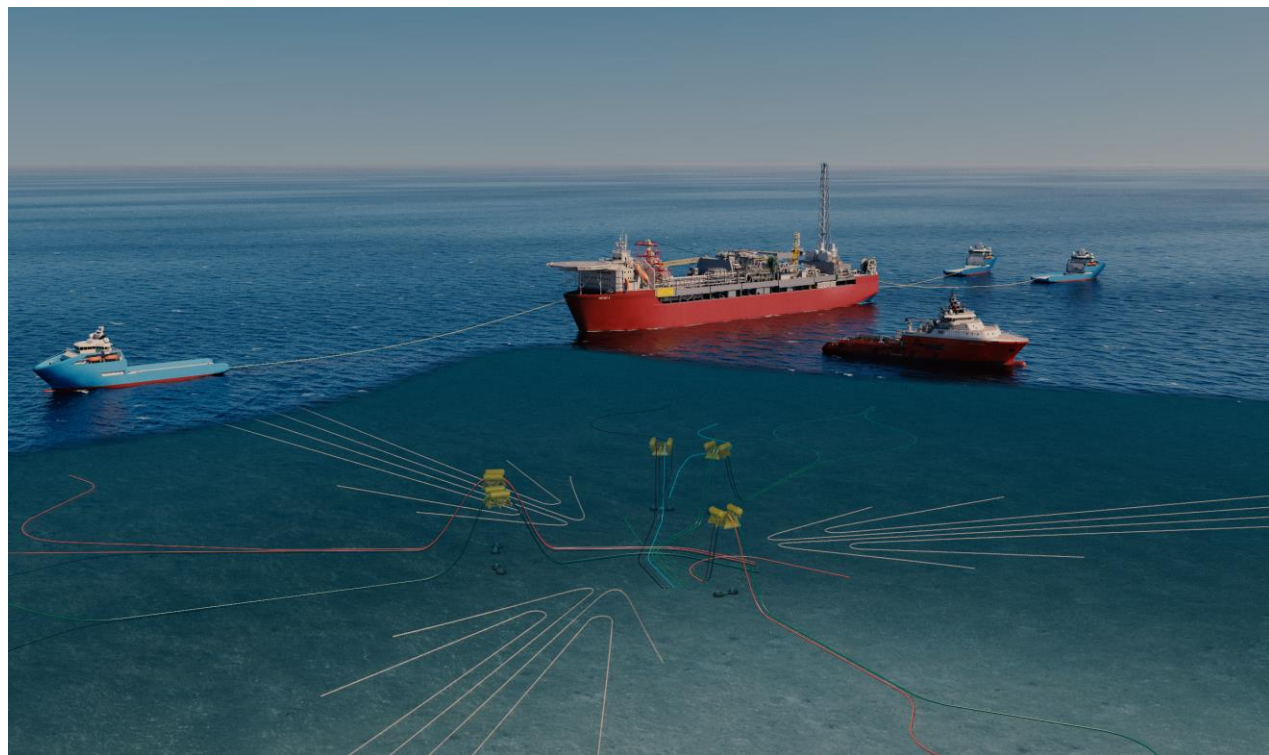
- Riser installation
- Tie-in to riser bases
- Testing of risers
- Main challenge for installation: landing of MWA clamp



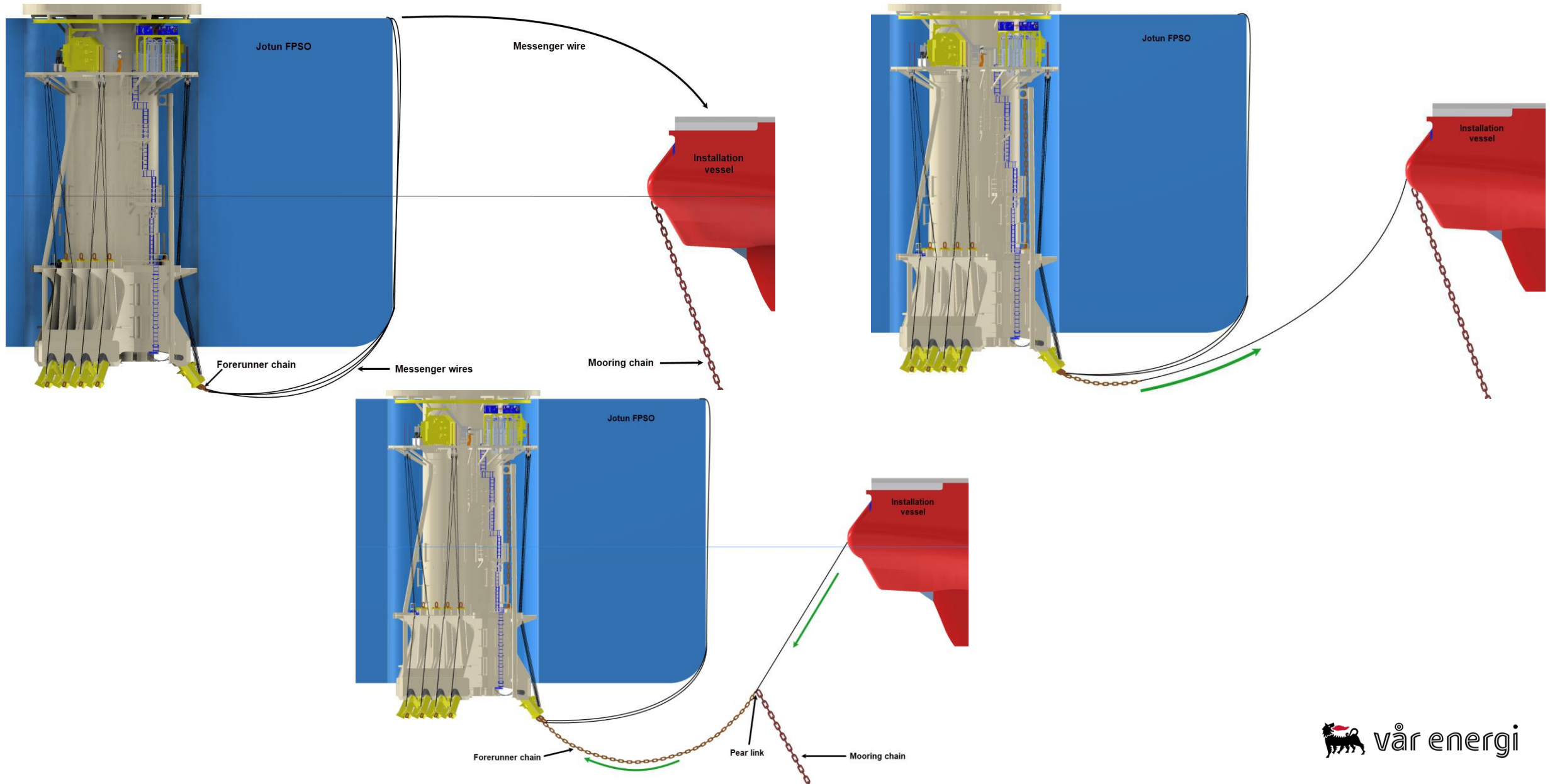
# Jotun tow-out & station keeping



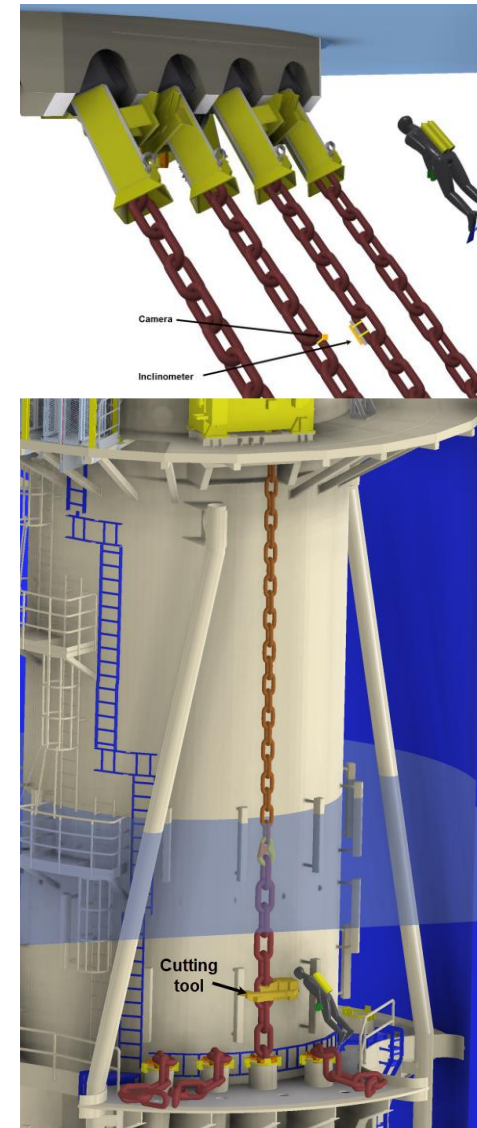
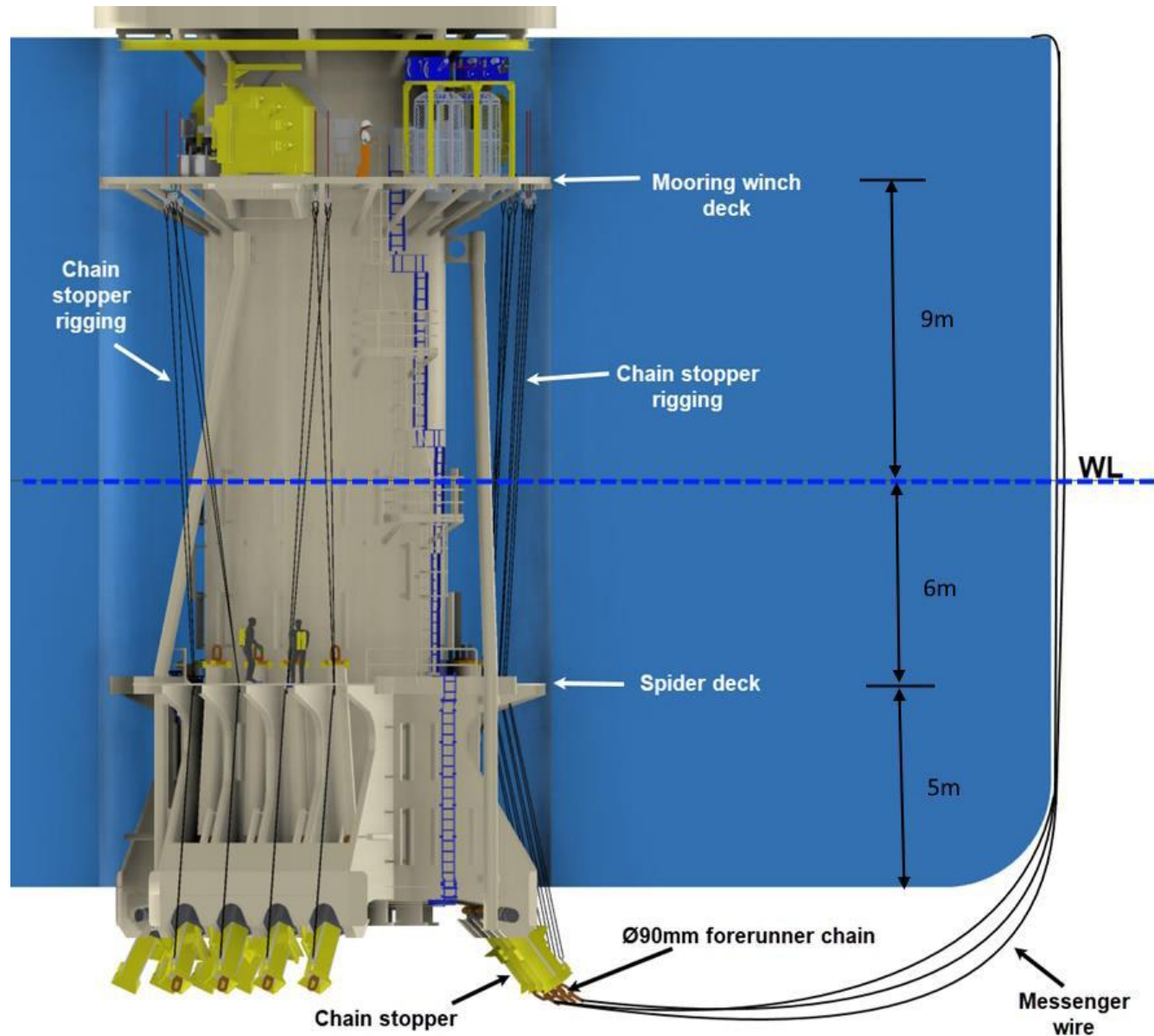
# FPSO – Tow-out & station keeping



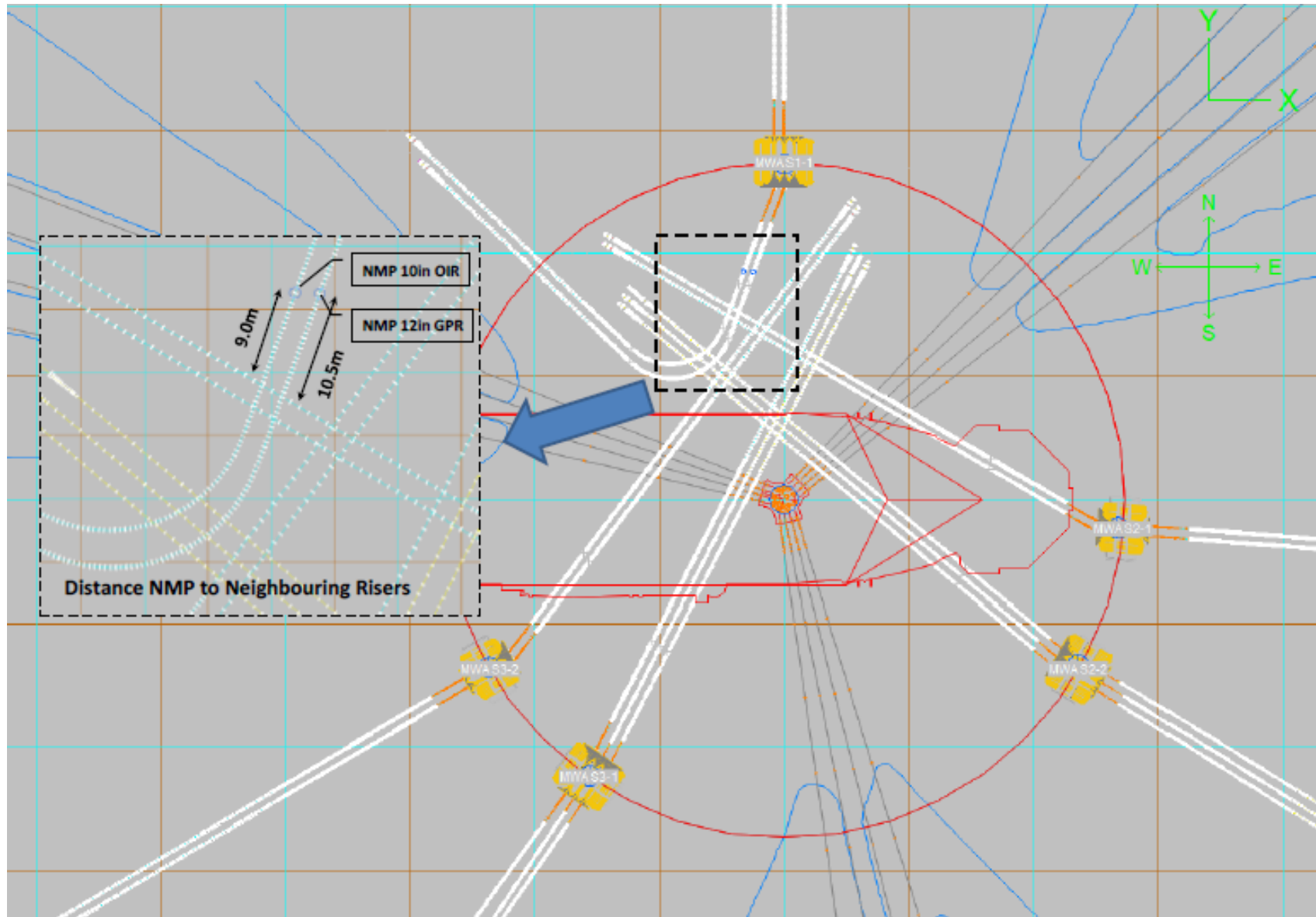
# FPSO - Mooring hook-up



# Mooring - Diving scope



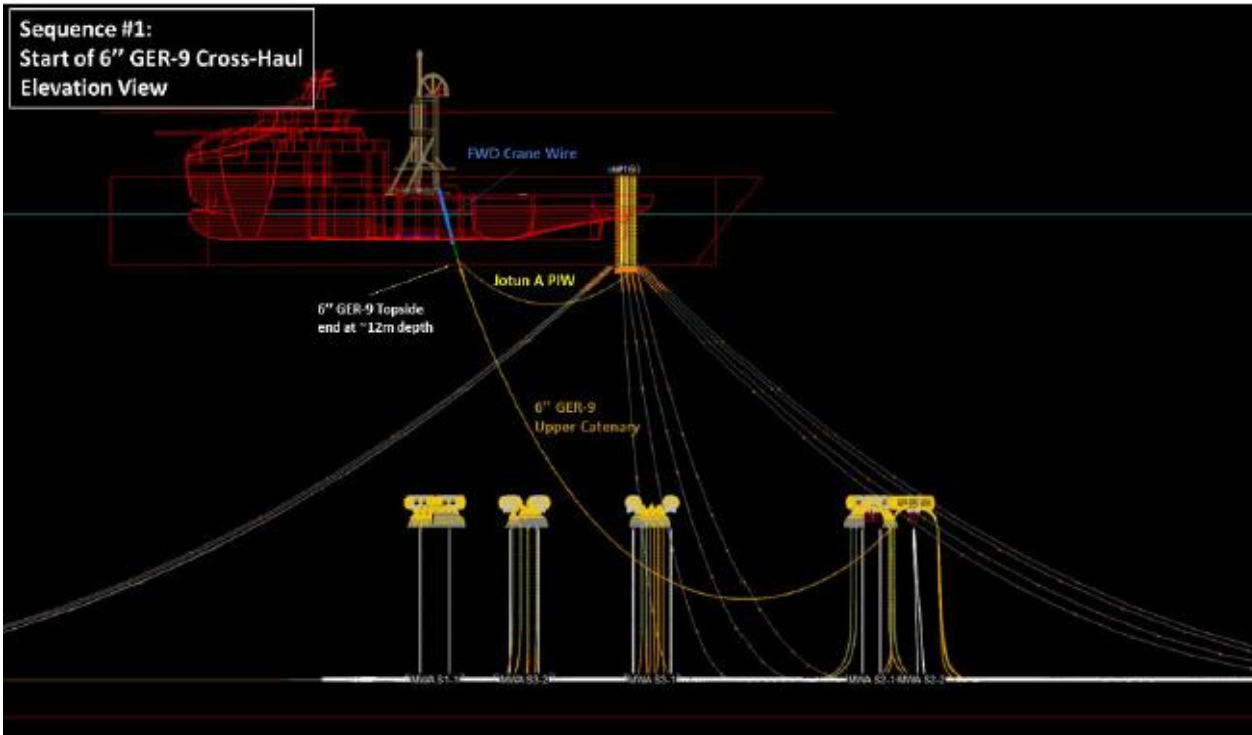
# Riser pull-in - Wet storage layout



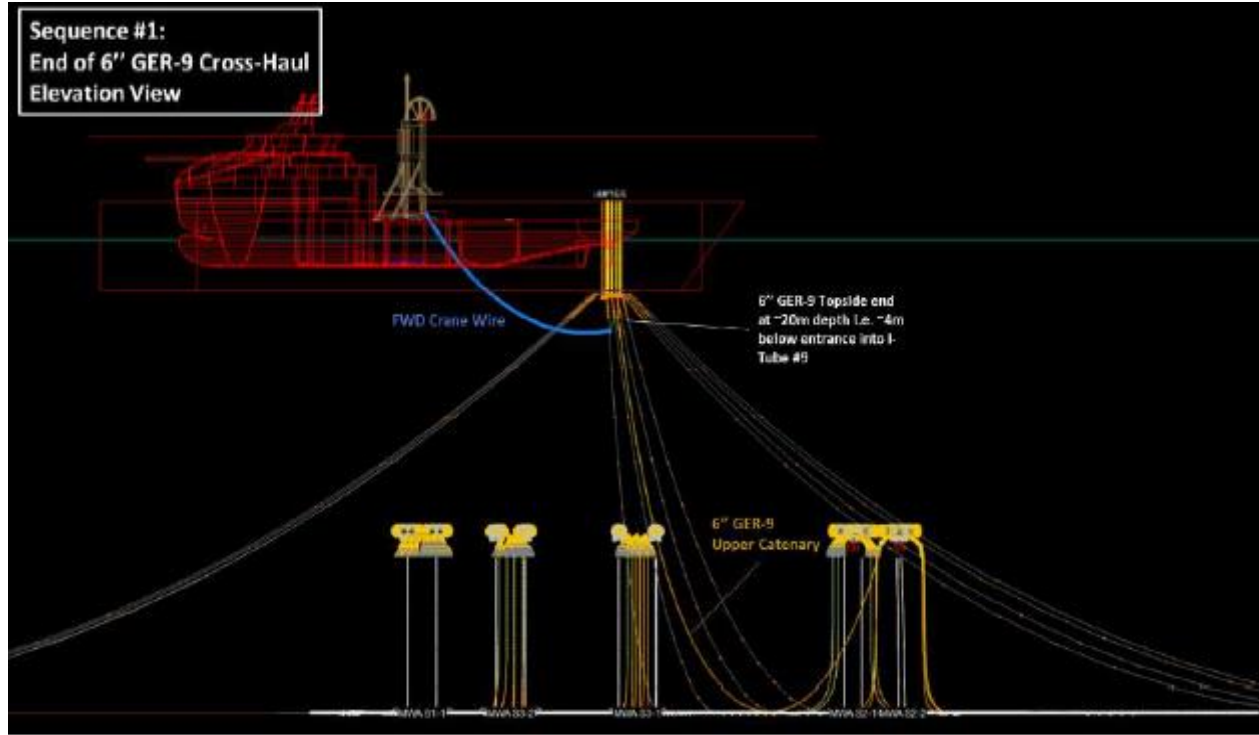


# Pull-in operations

Sequence #1:  
Start of 6" GER-9 Cross-Haul  
Elevation View



Sequence #1:  
End of 6" GER-9 Cross-Haul  
Elevation View



Where are we and way forward?



# Balder X nearing first oil

Production for decades  
in the Balder area

~80 kboepd

at peak production<sup>1</sup>, gross

~150 mmboe

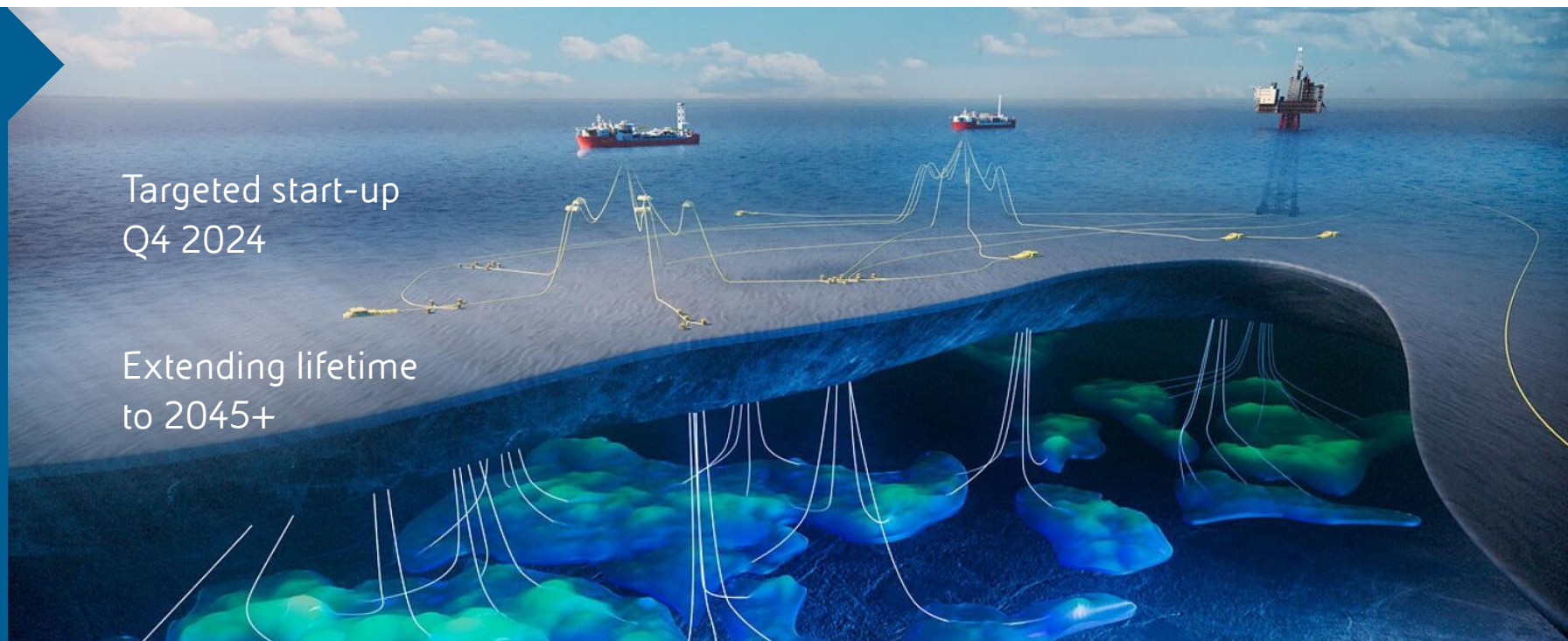
2P reserves<sup>1</sup>, gross

~5 USD/bbl

production cost

Targeted start-up  
Q4 2024

Extending lifetime  
to 2045+



SPS/SURF >85% complete

Majority of subsea equipment installed

Jotun FPSO >90% complete

High construction activity at yard

Drilling >85% complete

11 of 14 production wells completed





vår energi