



KYSTVERKET

IMAROS 2

– Beredskap mot utslipp av lavsvoveloljer

Silje Berger, prosjektleder // Horten, 28.10.2025

– Vi tar ansvar for sjøvegen



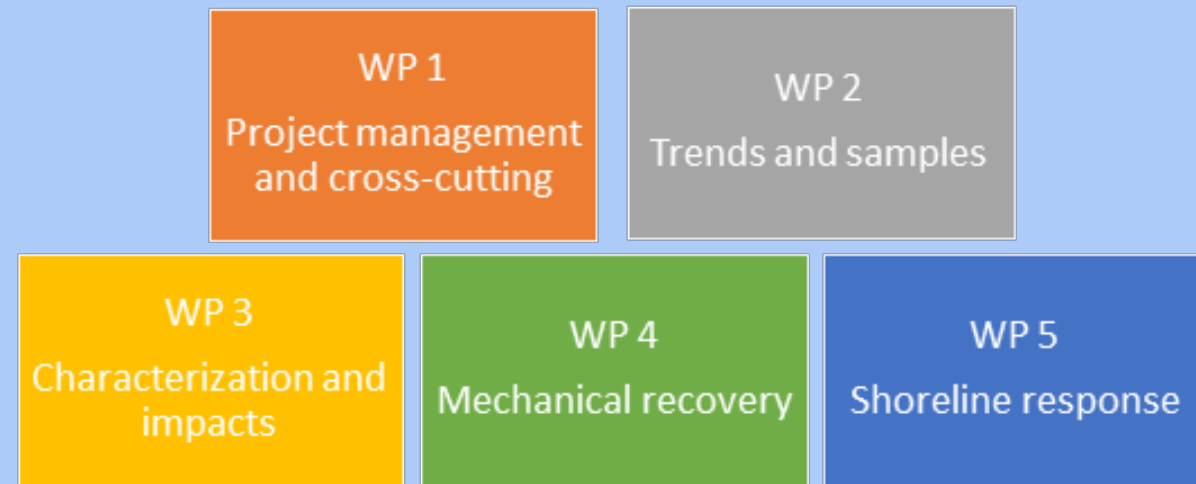
Background

- Previous tests and observations
- Results and recommendations from IMAROS project and incidents



imaros₂ Main objectives

- Improve understanding of oil spill behaviour of LSFOs, and consequently decision making on all levels of oil spill response operations
- Improve capacities of **mechanical recovery** and shoreline response
- Promote innovation and improvement of existing equipment



Project partners



Rijkswaterstaat
Ministry of Infrastructure
and Water Management



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NORWEGIAN COASTAL ADMINISTRATION



KUSTBEVAKNINGEN

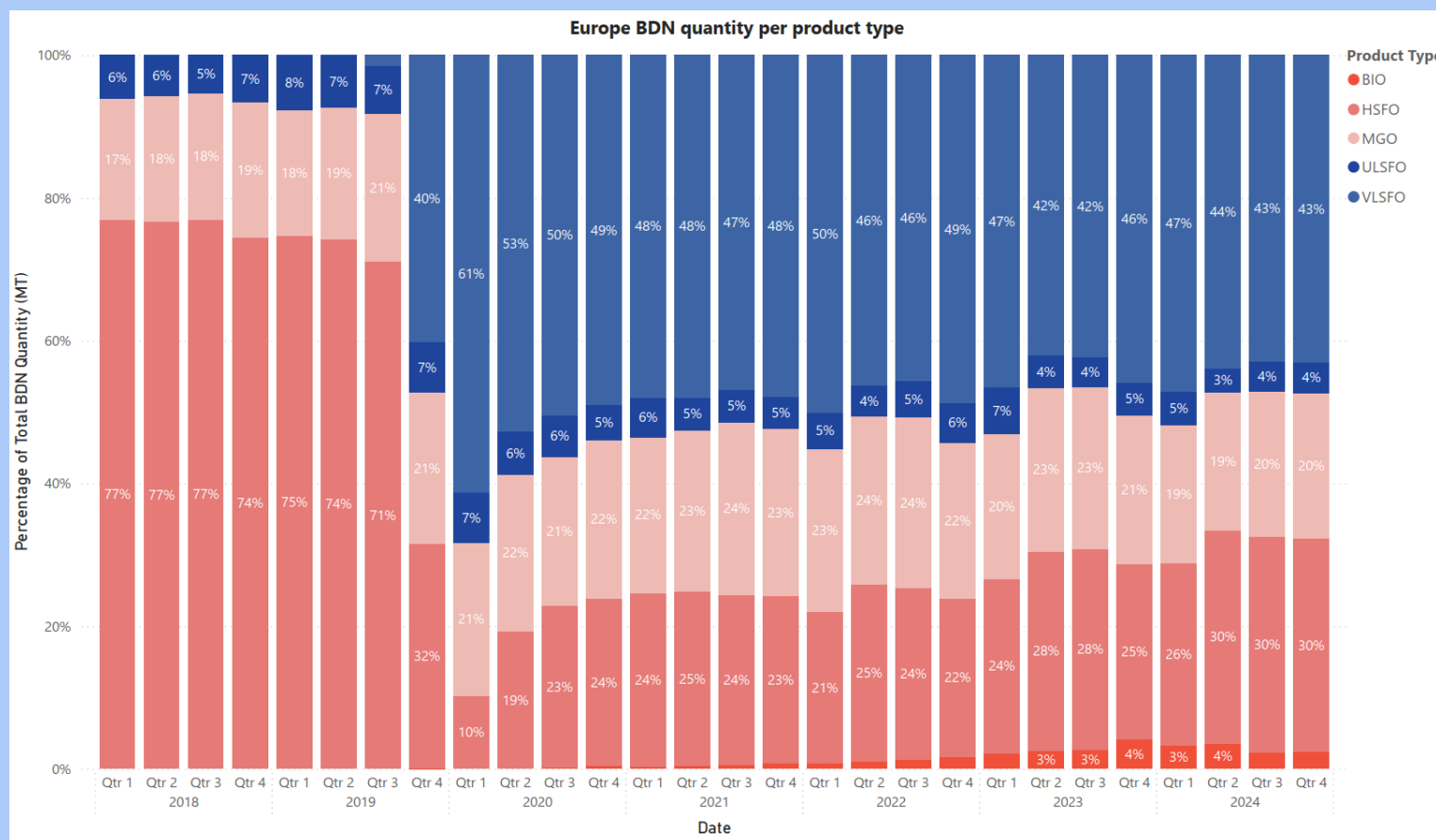


Oil samples

- ~60 different oil companies, bunker suppliers and ports contacted for samples
- Residual LSFOs – different blends
- 15 “small” samples for WP3 chemical characterization
- 3 “large” samples for response testing 2 VLSFO, 1 ULSFO



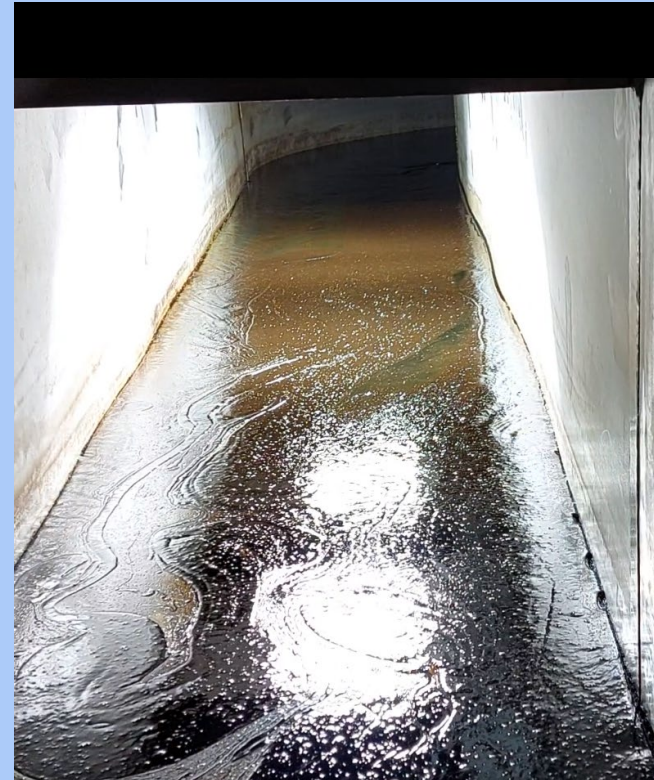
Bunker delivery



Graph reproduced
from Veritas
Petroleum
Services data
(VPS PortStats)

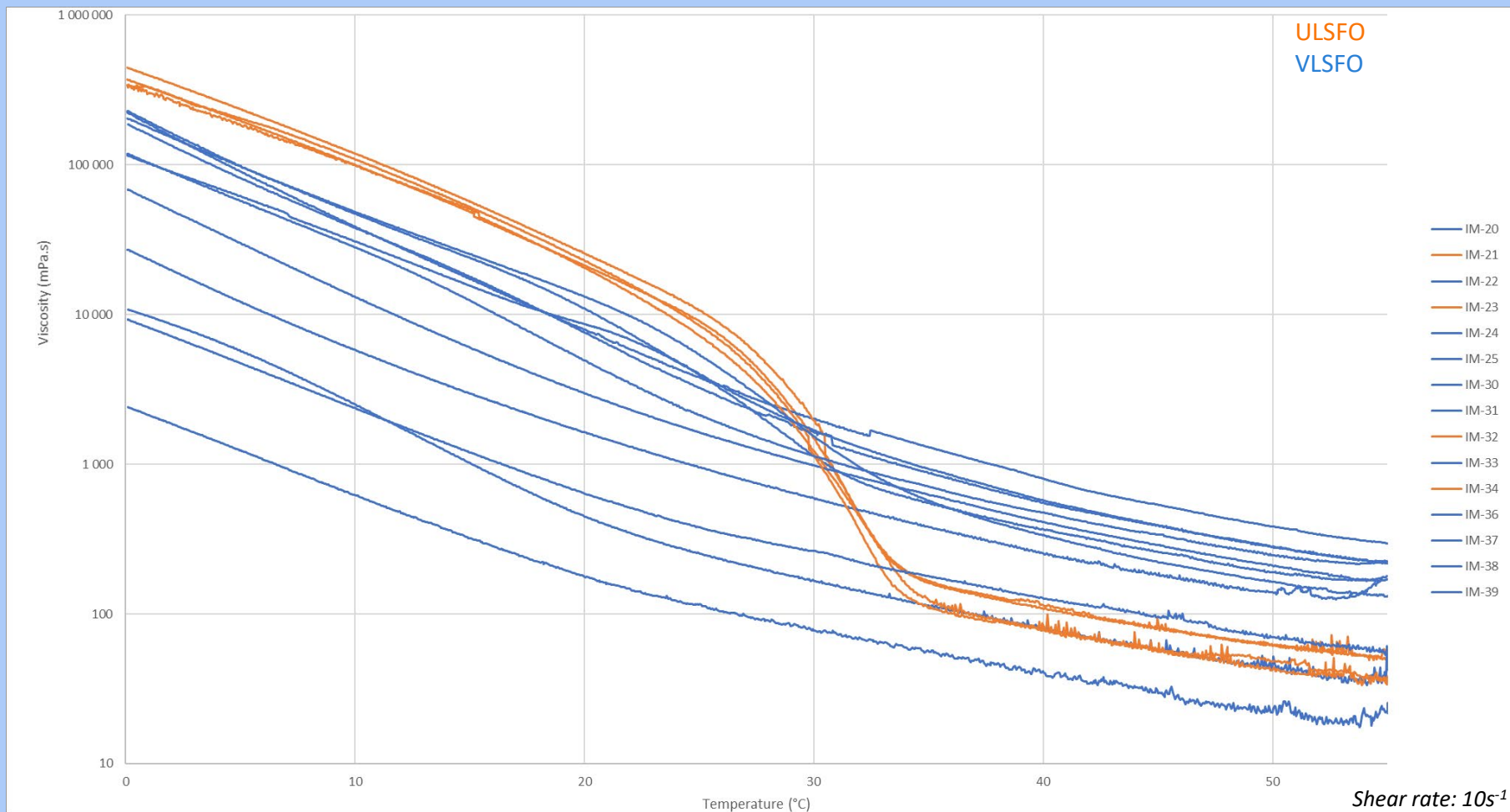
Progress – WP3

- Physico-Chemical characterisation of the oil samples
- Flume tank weathering studies on larger samples
- The characterisation results are being inputted in model to determine LSFO slick behaviour
- Findings highlight large variability in LSFO properties → response complexity



Viscosity

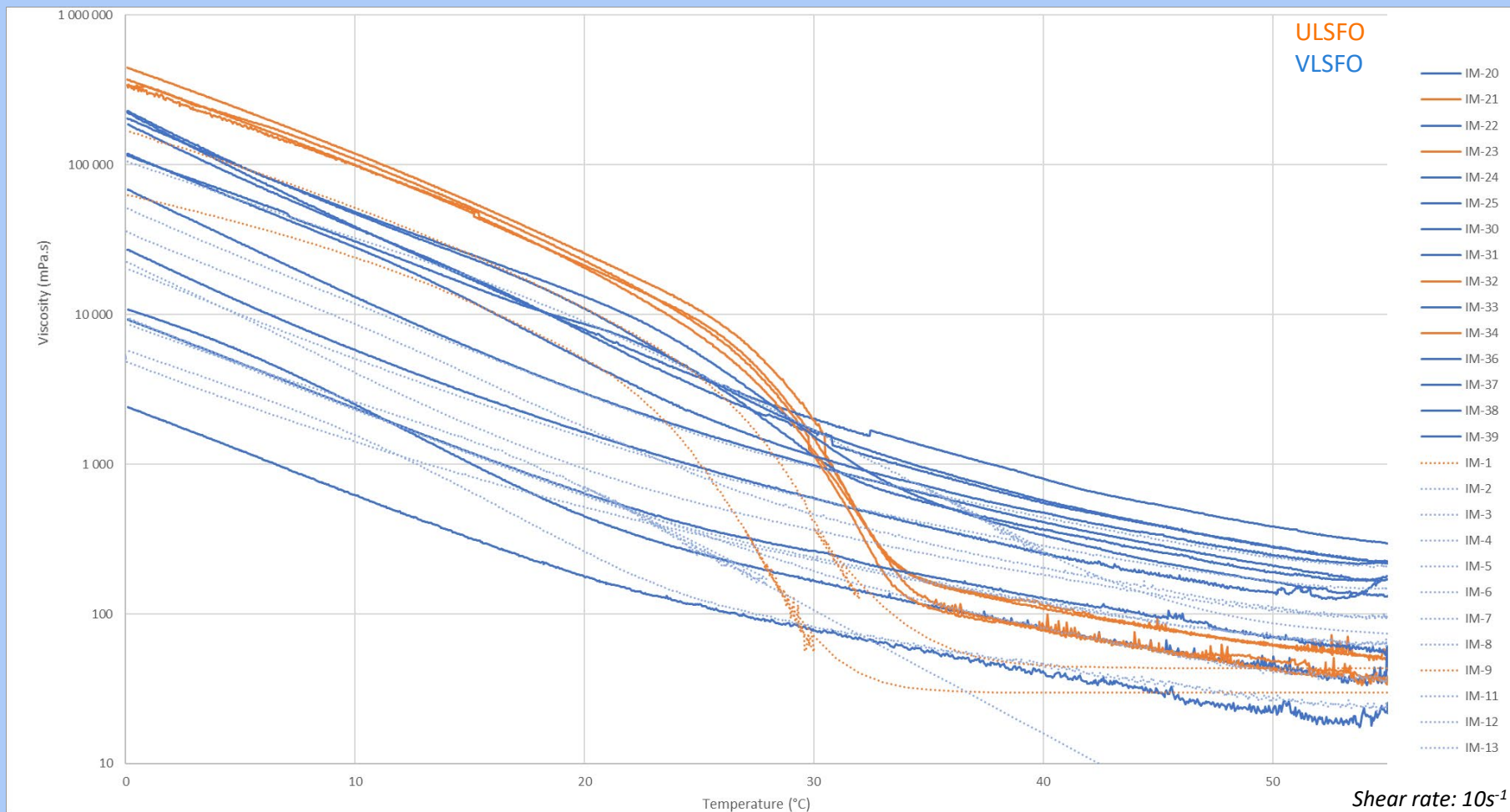
Small samples



Viscosity

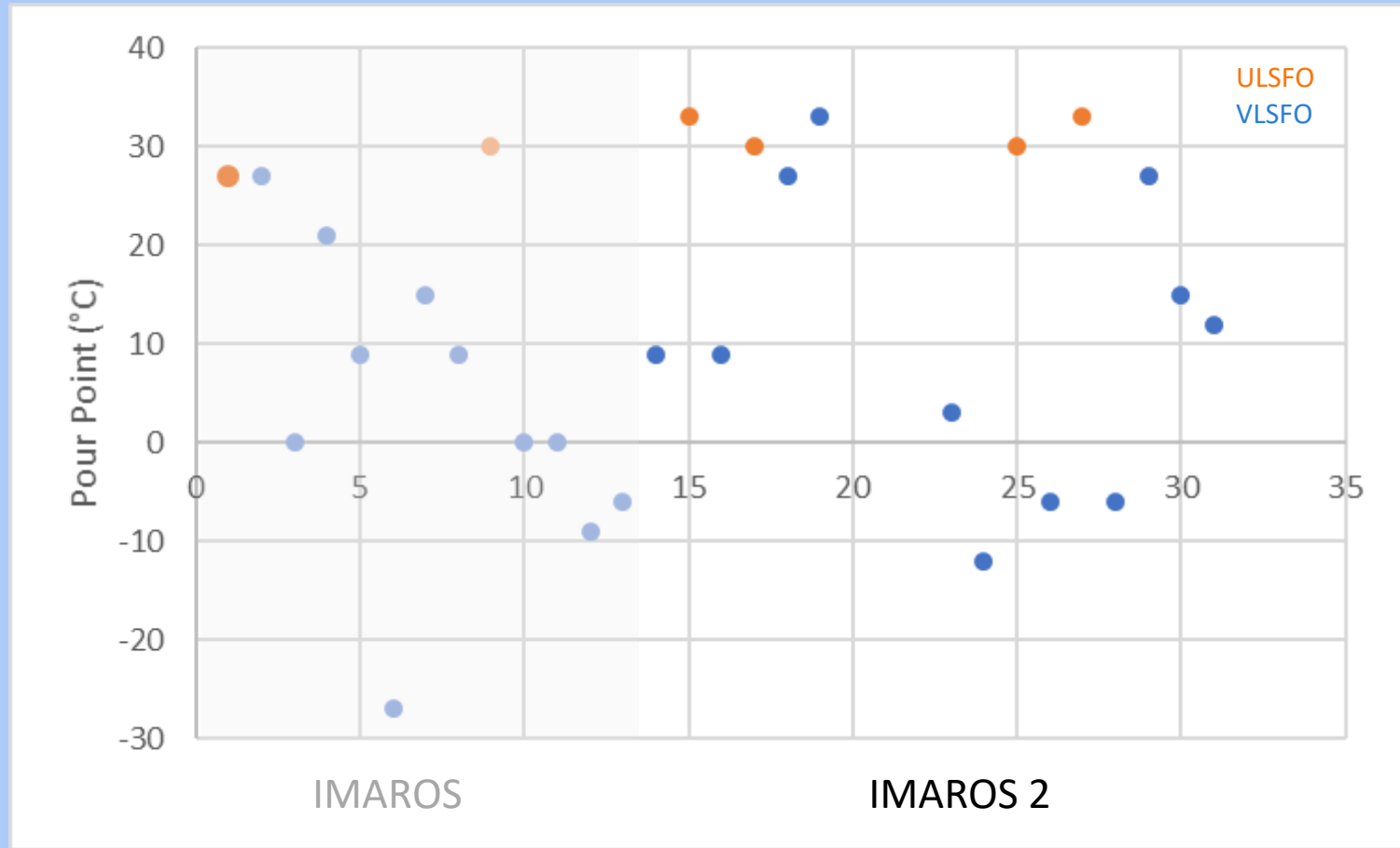
Small samples

Comparison
with IMAROS



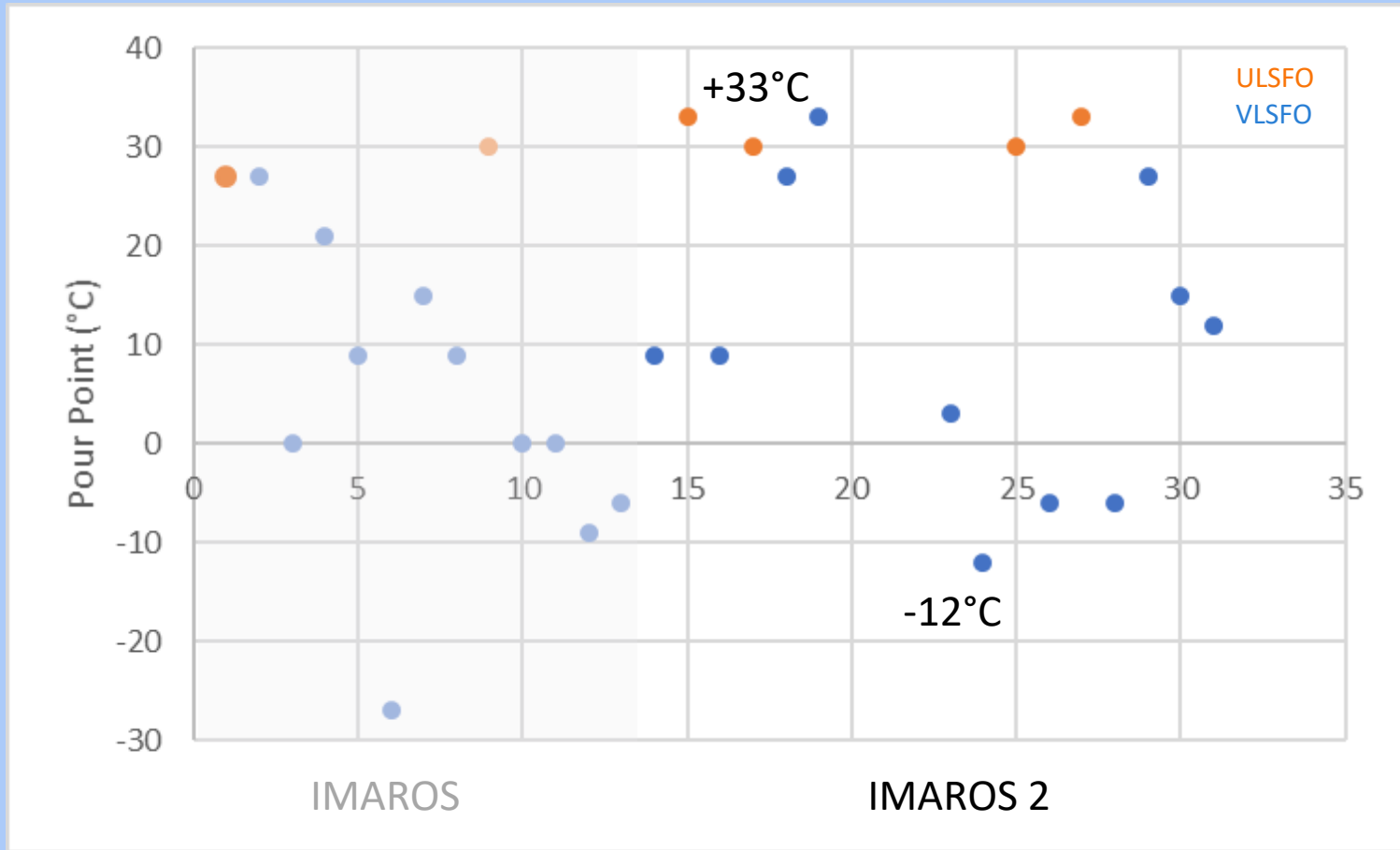
Pour Point

Small samples



Pour Point

Small samples

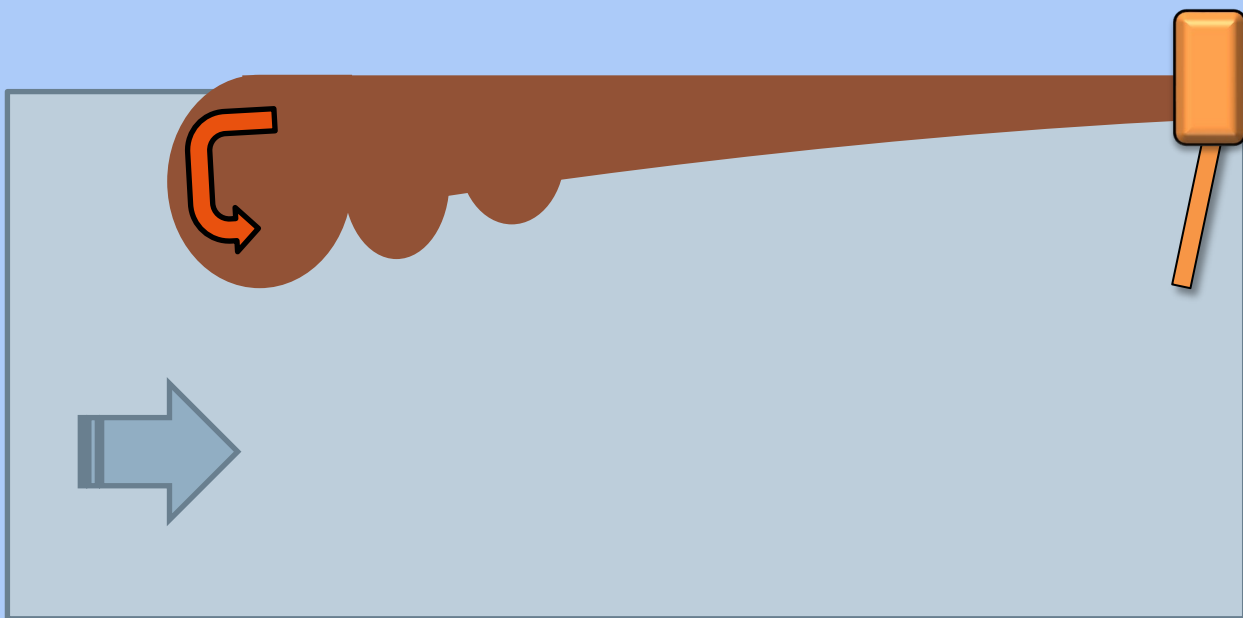


WP 4 Mechanical recovery

- Producer involvement conference, hosted by Swedish Coast Guard
- Invitation to participate in the project:
 - applications from 11 companies
- Process with all project partners to select the most promising approaches:
 - 3 concepts for testing in Horten (2 trail periods)
 - 2 concepts for testing in Kotka (ice conditions)
 - 1 concept for testing in Horten with modified test procedure
- Measurement of exposure to workers



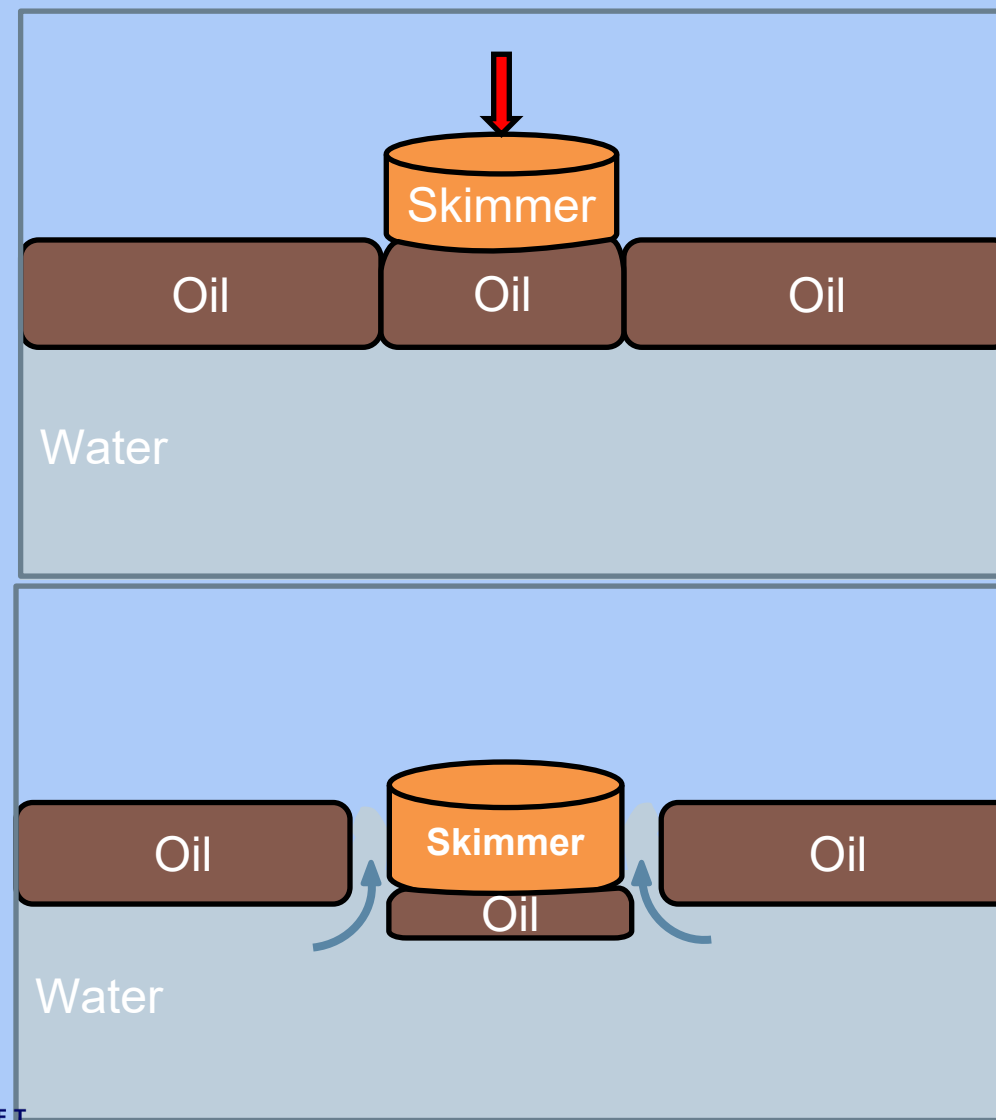
Observations



imaros₂

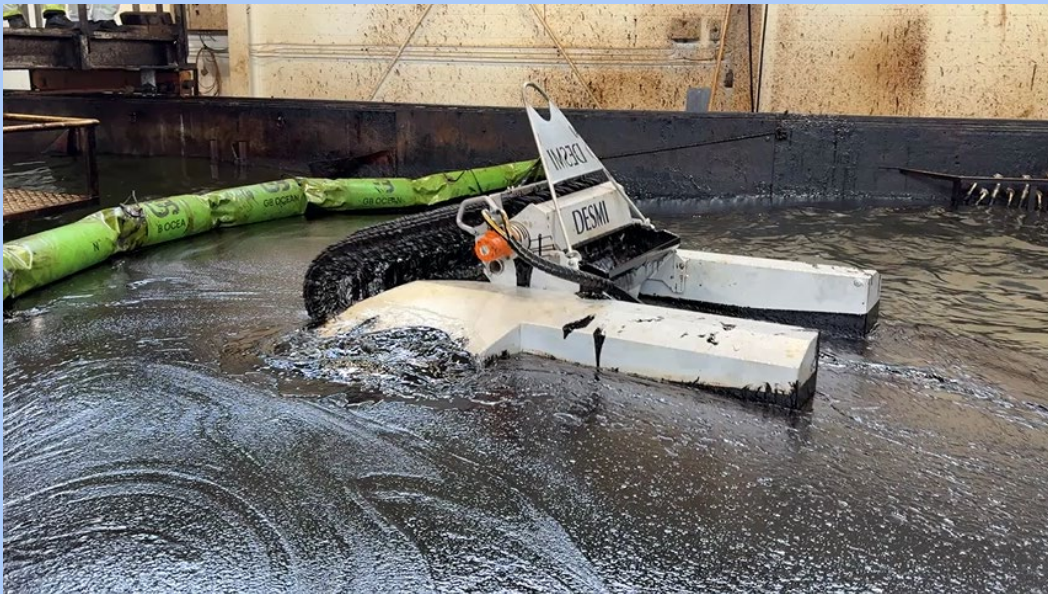


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Preliminary results test period 3

- Significant improvement of recovered oil (m³/h) from the first trail period



Oil in Ice tests - Kotka, Finland



- Testing of oil skimmers in winter conditions
- Recovery of LSFO from broken ice
- Test conditions mimicking solid ice field that has a fairway broken in the sea
 - Air temperature: -2,0°C
 - Water temperature: 0°C

Oil in Ice tests - Kotka, Finland



Progress – WP5

- Focus:
 - Examining oil behavior
 - environmental impacts
 - clean-up techniques through a combination of laboratory studies, mesoscale experiments, and practical trials
- Shoreline experiments in France, Norway, Malta
- Rock colonization & sediment interaction studies
- Clean-up trials & cleaning agent testing
- Testing in progress and is expected to run till the end of the project



Testing of practical cleaning techniques



Shoreline clean-up
simulation container

Adjustable angle of the shoreline

Artificial shoreline

VLSFO IM-28, 15 °C



Cleaning of weathered oil



Cleaning of weathered oil



Next Steps & Final Conference



Final conference: 18–19 Nov 2025, Malta (hybrid event)



Outputs: reports, video clips, operational guidelines



Updates shared via EU Civil Protection Knowledge Network



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Takk for oppmerksomheten

Visit IMAROS 2:

[https://civil-protection-knowledge-
network.europa.eu/projects/imaros-2](https://civil-protection-knowledge-network.europa.eu/projects/imaros-2)

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www.kystverket.no

