



THE
**OFFSHORE
PARTNERS**

Decommissioning

Prepare and cooperate to enlarge potential

T.M. Vollaard
Zeeland Port Promotion Council
Terneuzen | 11 April 2019



ENGINEERING &
STUDY WORKS

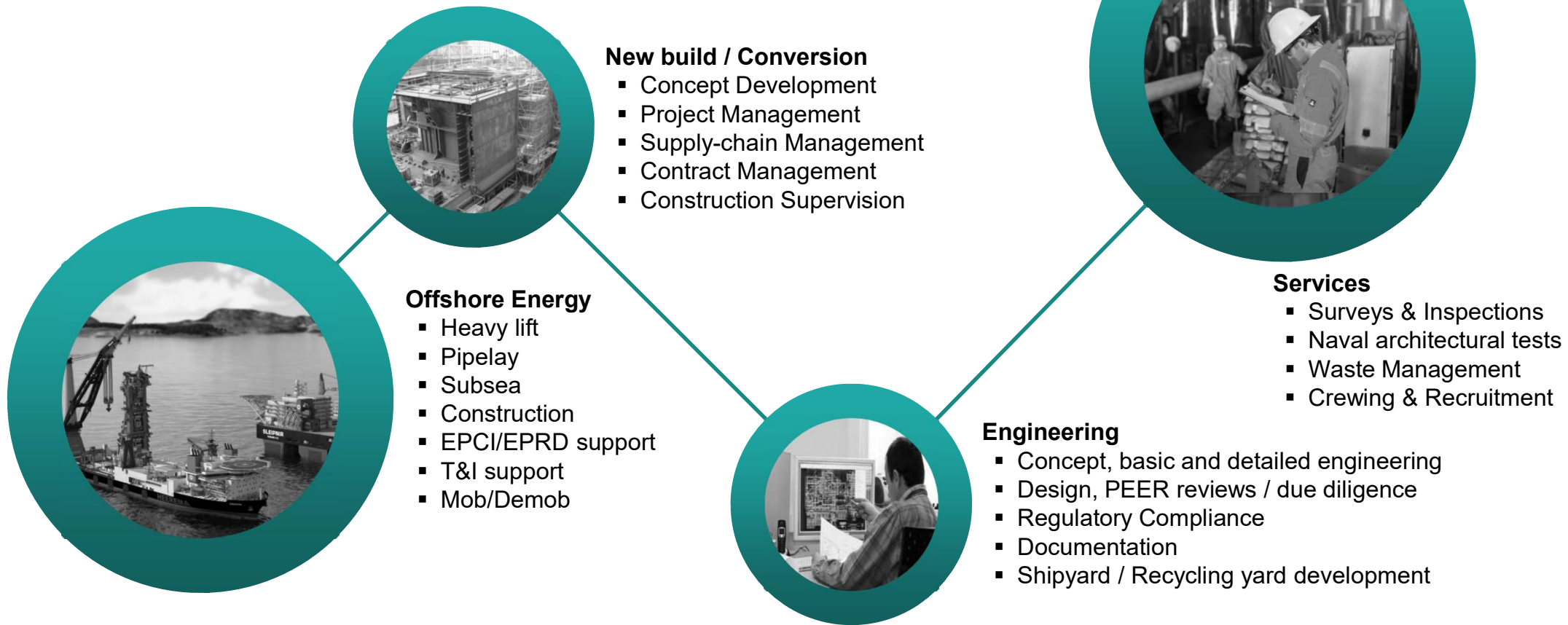


MANAGEMENT &
SUPERVISION



OFFSHORE ENERGY
PROJECT SERVICES

The Offshore Partners' DNA



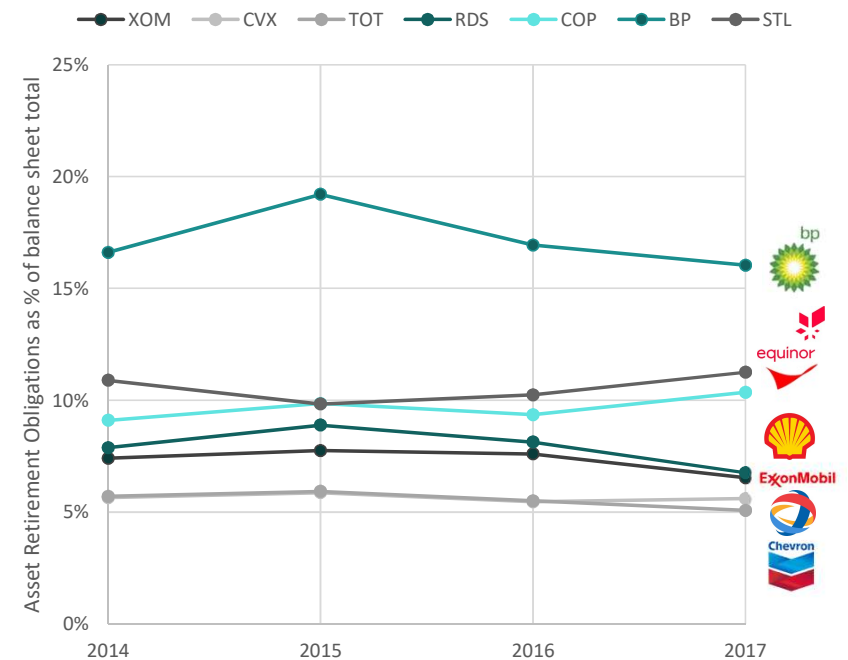
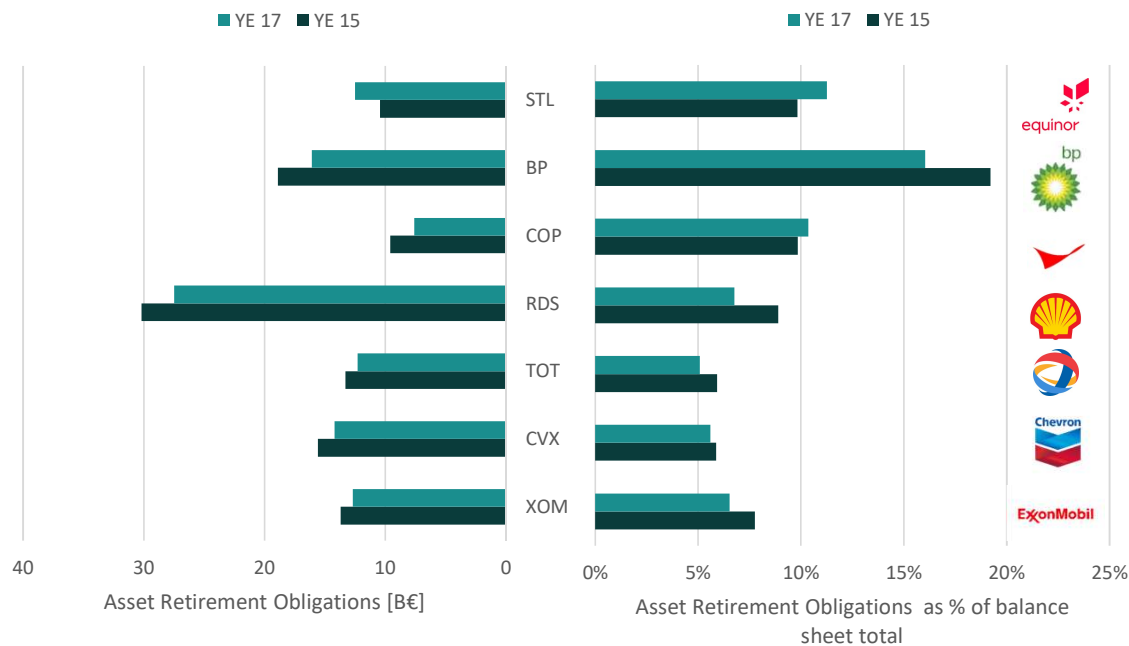
There are many reasons to defer decommissioning



However, ARO's start to attract more attention

Asset Retirement Obligations are a significant burden on the balance sheet of many operators ...

... and are mainly changing due to market factors, portfolio changes and discount rates – less due to actual decommissioning activity





PricewaterhouseCoopers Advisory

- Project finance & assurance
- Fiscal and financial analysis
- Business case

Fraser Well Management

- Well life cycle integrity
- Well investigation and preparation
- Permanent well abandonment

The Offshore Partners

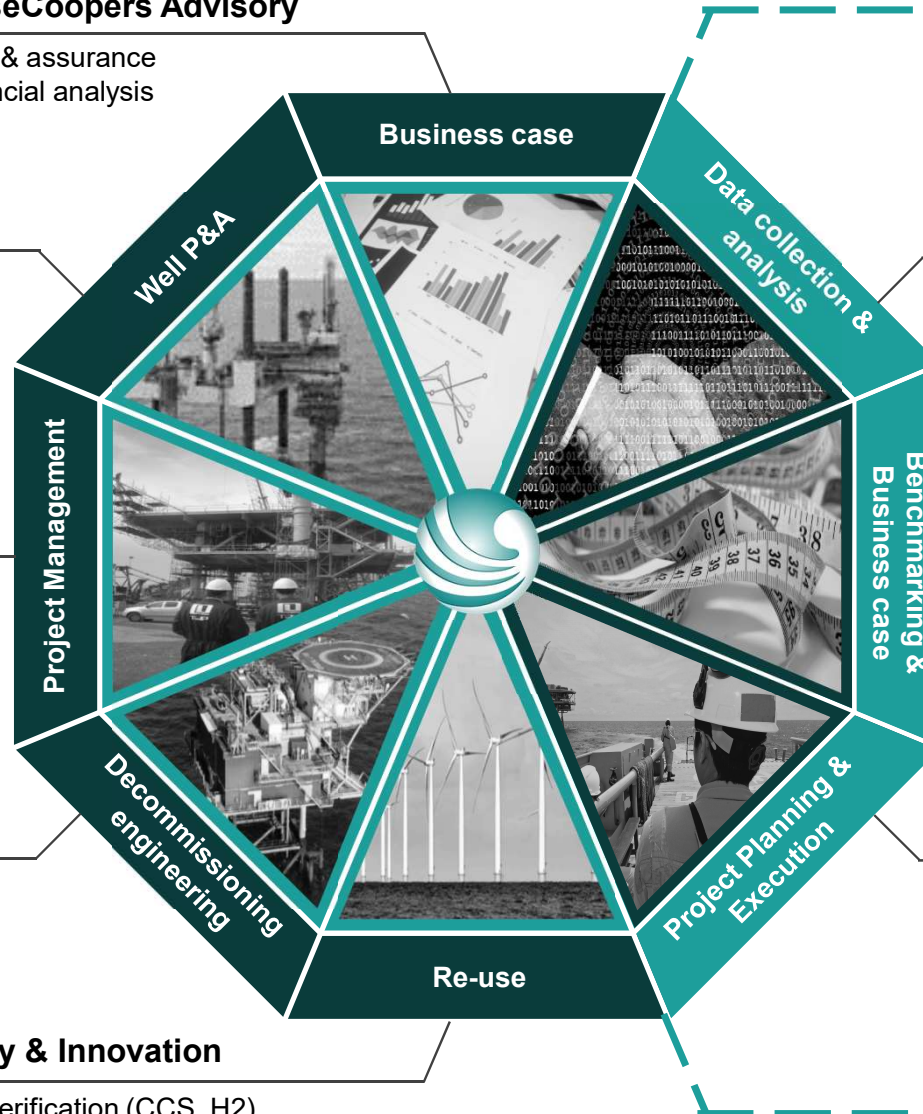
- Green Octopus Alliance Coordinator
- Project Planning & Integration
- Project Management, Control & Supervision

KCI the Engineers

- Decommissioning engineering
- Structural integrity analysis
- Removal methodology

TNO Technology & Innovation

- Re-use potential verification (CCS, H2)
- Science, Technology, & Innovation



Our Services

Independent Data-Hub

- Data collection and verification
- Data analysis and categorization
- Anonymization of technical data to facilitate multi-operator campaigns
- Data brokering

Benchmarking & Scenarios

- Technical substantiated scenarios for re-use / decommissioning
- Benchmarking against market pricing
- Business case development
- Deal brokering
- Decom liability review / due diligence

Project Planning & Execution

- Project structuring and finance
- Scoping, specification, timing
- Project Strategy & Planning
- Supply-chain strategy and tendering
- Project Management & Supervision
- Project post-mortem and monitoring

A consortium of TOP | KCI | FWM | PWC | TNO

Green Octopus' purpose

Green Octopus provides a solution that:

- Is independent from equipment-owning decommissioning players
- Works across four (4) axes

01

**Cost-savings
and tax
optimization**

Through EoS, tax-optimization and saving on cash-out through novel contract model which allows for periodic payments

02

**Synergetic
advantages,
and increased
buying power**

Synergetic advantages and increased buying power. Through EoS, and campaign staging on basis of technical similarities

03

**Risk
mitigation and
reduce
uncertainties**

Reduced risks in execution and ability for fixed-fee contracts through data scrutiny and accurate scope of work

04

**Reduction and
relief of
liabilities**

Collaboration and EoS decrease risk-profile and overall liabilities, while accounting norms are met in execution. Remaining (post-abandonment) liabilities can be capped and insured through project post-mortem and due diligence reports.

Outlook till 2027

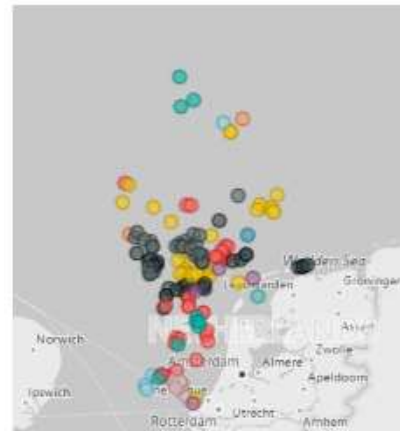
In the projected timeframe some 1,013 installations are earmarked for decommissioning.
If all installations will be removed the offshore landscape changes dramatically.

Netherlands:	125 installations 300,902 tonnes
UK SNS:	256 installations 453,020 tonnes
UK CNS/NNS:	313 installations 1,454,837 tonnes
Norway:	319 installations 669,624 tonnes

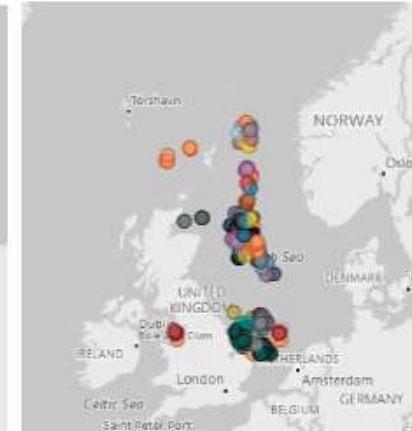
In total the weight of 394 Eiffel Towers*

- Total cost estimate for removal €1167.2M
(*approx. 25% of decommissioning WBS budget*)
- Total cost estimate for recycling €233.4M
(*approx. 2% of decommissioning WBS budget*)

NL situation end 2018



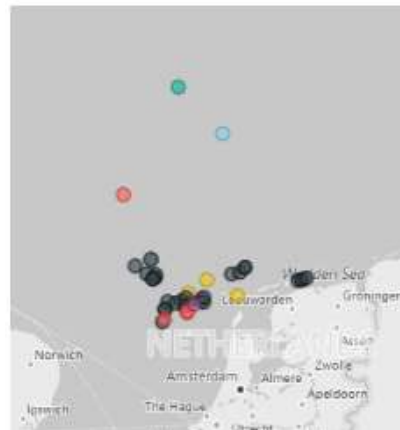
UK situation end 2018



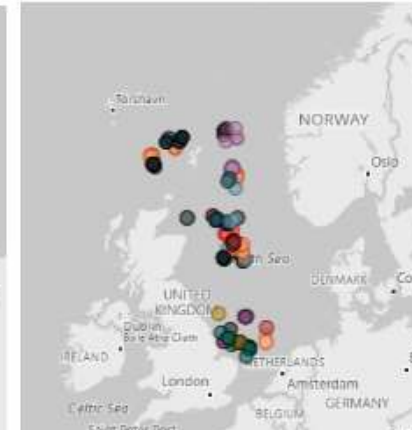
Norway situation end 2018



NL situation 2027



UK situation 2027



Norway situation 2027



North Sea decommissioning yards

Yard locations around the North Sea with decommissioning capabilities

Facility

- Able Seaton Port & TERRIC
- AF Environmental Base
- Damen Verolme
- Harland and Wolff
- Hoondert
- Invergordon Service base
- Jansen
- Kishorn port
- Kværner
- Lyness and Golden Wharfs
- M.A.R.S. Modern American Recycling Services Europe
- Montrose port
- NorSea Group
- Port of Dundee
- Sagro
- Scheepssloperij Nederland
- Semco Marine & Hellig Teigen
- Tyne dock, McNulty site
- Veolia Lutelandet
- Veolia/Peterson Great Yarmouth
- Veolia/Peterson Lenwick
- Verbrugge



Zeeland as a decommissioning hub

S

Strengths

- Access to market
- Open access incl. deep draft quays
- Accessible for a large marine spread
- Industrialized area / matured offshore industry
- Matured recycling industry cluster
- High-end (hazardous) waste treatment facilities
- Multi-modal transport network (rail, road, water)
- Excellent access to hinterland

W

Weaknesses

- Multiple yards (Hoondert, Sagro, Verbrugge, BOW)
- Disconnect of recycling industry and offshore industry
- Offshore capabilities not fully exposed in annual reports / no indication capacities handled
- Lack of public interest for decommissioning
- International brand reputation

O

Opportunities

- Use sentiments revolving around the circular economy and energy transition
- Exploit and market your capabilities to integrate/connect offshore and recycling industry for an integrated approach
- Enlarge your attractiveness through cooperation of both offshore and recycling companies to enlarge capacity and impact in line of North Sea Port Ambition
- Connect with Offshore Contractors

T

Threats

- Internal competition => race to the bottom
- UK protectionism
- Ambition of other ports in the Netherlands
- Existing alliances (HMC and AF-Gruppen)

Technology is our passion, knowledge our greatest asset

Theo Vollaard – Project & Business Development

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