

Decommissioning potential in the North Sea



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With declining production on many mature fields and the current oil price environment, operators are increasingly having to make a decision as to whether to run a field at a loss or to shut fields down and book the decommissioning costs. This choice might be painful for oil companies, but there is potential upside for many vessel owners.

Decommissioning entails plugging wells, removing platform jackets, topsides and subsea structures, and ultimately, complete site remediation.

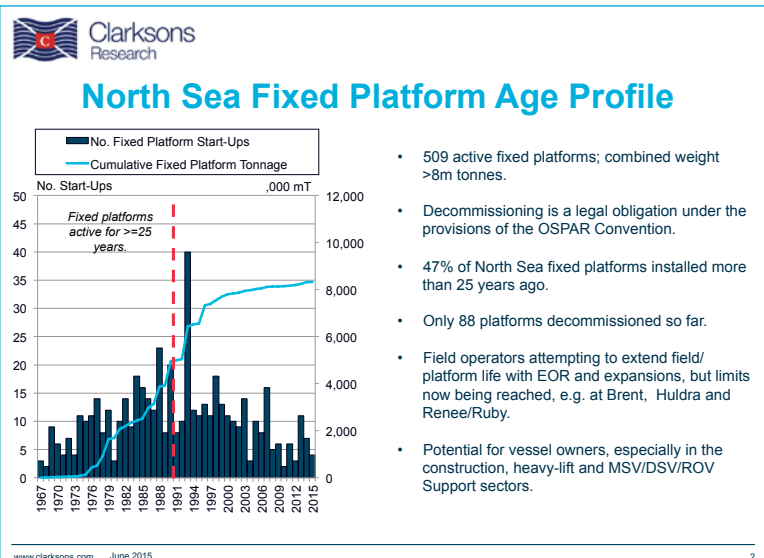
The North Sea is home to a dispersed mass of steel and concrete, namely: 509 active fixed platforms with a combined weight exceeding 8 million tonnes; 1,440 subsea structures; 9,370 active wells and their completions; and over 45,000km of pipeline, all within an area of 750,000 km. Under the provisions of the OSPAR Convention, field operators are obliged to decommission and clean all this up one day, and that day may be approaching.

Stephen Gordon, Managing Director at Clarksons Research, looks at the potential upside to our Offshore members.

Diamonds and rust

Since first oil in 1967, approximately 54bn barrels (bbls) of oil have been produced in the North Sea. However, recoverable reserves on many older fields are depleting with production in 2015 forecast to stand at just 2.86m barrels per day (bpd), compared to a peak of 5.9m bpd in 2000. Around 47% of fixed platform tonnage installed in the North Sea now sits on fields older than 25 years and oil companies are

increasingly having to contemplate decommissioning (see below). Decommissioning can be money- and time-intensive, so it is unsurprising that only 88 platforms in the North Sea have been decommissioned to date. For example, the decommissioning of the Brent facilities is expected to take 10 years, and even small projects are expected to take two years and more than \$300m in capital expenditure.



Often postponed

There is a strong history of decommissioning being postponed, for example with operators utilising enhanced oil recovery (EOR) to extend field life or connecting new field developments to existing structures. For example, while the 12 wells on Heimdal are being abandoned, the platforms are being kept to process gas from Vale and other fields.


However, it is thought that in the current oil price environment, OPEX is encroaching on profits at a rising number of fields. Operators striving for fiscal discipline are between the hammer and the anvil – either run fields at a loss, or shut fields down and book the decommissioning costs.

Pain and pleasure

This choice might be painful for oil companies, but there is potential upside for many vessel owners. The slide below sets out the offshore spread required during a typical decommissioning project. Drilling rigs and well intervention vessels will

be needed to plug many of the wells. Crane vessels, self-elevating platforms and heavy lift vessels will be needed to remove and transport topsides and jackets (indeed, part of the rationale of the 'Pioneering Spirit' is that it is one of very few units capable of lifting massive structures like the 42,500gt topsides of the 'Gullfaks A' gravity base platform). MSVs, DSVs and ROV support vessels can be used to assist throughout decommissioning and will be especially important for removing subsea structures and for site remediation, when dredgers will also have a part to play. These various vessels will need to be assisted throughout the process by OSVs and utility support vessels.

The CAPEX implications for oil companies active in the North Sea will be significant once decommissioning commences. But sooner or later (quite possibly sooner) they may have little choice. This could potentially benefit many different owners, with decommissioning becoming an important driver of North Sea vessel demand.

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Decommissioning and the Offshore Fleet

		Decommissioning Project Stage					
		Well Abandonment	Preparation	Tops/Jack. Rem.	Subsea Removal	Site Remediation	Monitoring
Survey	Seismic/Acoustic						
	Hydro/Oceanographic						
MDU	Multirole						
	Jack-Up Drilling Unit						
	Semi-submersible						
	Drill Ship						
Construction Vessel	Drill Barge						
	Drill Tender						
	Crane Vessels						
Self-Elevating/Installation	Pipe Layer						
	Cable/Steel Layer						
	Tram/Heavy Lift Vessel						
Accommodation Unit	Offshore Launch Barge						
	Self-Elevating Platform						
Subsea Construction Support	Wind Turbine Installation						
	Jack-Up Accom. Unit						
	Accom. Vessel/Semi-sub						
Dredger	Accommodation Barge						
	MSV						
Mobile Production	DSV/ROV Support						
	Trailing Suction Hopper						
Offshore Support Vessels	Gravel/Sediment Discharge						
	ESPO						
	Semi-sub Production						
Rescue & Salvage	TLP/SPAR						
	Jack-Up Production Unit						
Utility Support	AHTS						
	AHT						
Maintenance	PSV Supply						
	Crew Support						
Key units involved in decommissioning fixed platforms and subsea structures	R.R.V.						
	Ocean Going Tug						
Other vessels potentially involved in a decommissioning project	Utility Support*						
	Utility Support*						

Key units involved in decommissioning fixed platforms and subsea structures
Key units involved in well abandonment
Other vessels potentially involved in a decommissioning project

*Includes well intervention vessels

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