



Between three to four-hundred platforms and one-hundred subsea installations in the North Sea face closure by 2030, amounting to approximately 30% of the offshore industry in the area. With this in mind it is not surprising that the issues surrounding decommissioning and its inherent risks are anticipated with growing interest.

Of course, the oil and gas industry, whose very foundation is quite literally and metaphorically affected by the procedure, are keen for solutions. However, environmentalists, governments and researchers are also gearing up to face the issues that the upcoming decommissioning wave will present.

So too are energy specialists in the insurance market who will undoubtedly face an influx of enquiries in the coming years to aid in devising risk-averse insurance solutions.

#### The road to removal

Despite the upcoming upheaval, the decommissioning of oil rigs is nothing new. Indeed, over 1,000 structures have already been removed, turned into reefs or casinos, research centres, dive tourism or fish and oyster farms. In 2008, US-based Morriss Architects won the first prize in the Radical Innovations Hospitality Awards — for their idea of converting a rig into a luxury resort.

However, the structures in the deep and often hostile waters of the North Sea present a tougher challenge than those removed from the shelf and shallow depths of the Gulf of Mexico, where the majority of decommissioning activity has taken place to date.

**PICTURE CAPTION** Rigs-to-Reefs is a nationwide programme developed by the Minerals Management Service of the US Department of the Interior to turn decommissioned offshore oil and petroleum rigs into artificial reefs

David Turp discovers how innovation is informing the industry's approach to decommissioning globally

# INTO UNCHARTERED WATERS



Furthermore, with jacket type steel structures and concrete gravity based structures, SPAR platforms and tensions leg platforms (TLPs), semi-submersibles and floating production storage and offloading platforms (FPSOs), no two structures are the same so there is no standard practice for removal. Decommissioning certainly presents a complex technological conundrum.

However, the removal of platforms does not just present a technical challenge, but an environmental one too.

Currently much research is being carried out into how best to handle redundant offshore platforms. For example, with over 60 rigs off the coast of Australia set to be decommissioned over the next decade the SERPENT project, a study jointly funded by the Australian government and oil companies, has been set up to examine the impact of rigs on underwater biodiversity.

One of its main foci is to determine the pros and cons of leaving structures under the sea, such as that practiced by the US coastal states of Louisiana, Texas, Mississippi, Alabama and Florida where over 150 obsolete rigs have been converted into artificial reefs.

Decommissioning is also very strictly regulated by international, regional and national laws, including the UN Convention on the Law of the Seas, The International Maritime Organisation's guidelines and the Oslo and Paris Convention for the Protection of the North East Atlantic. International law allows complete or partial removal of structures built before 1998. Those constructed after 1998 must be designed to ensure that total removal is a possible option upon reaching their design span life.



**PICTURE CAPTION** Morris Architects, a 70-year-old design firm, took top honours for the design of the Oil Rig Resort, Spa, and Aquatic Adventure. The concept imagined the refit of one of the Gulf Coast's 4,000 oil rigs into an exclusive resort, creating an eco-luxe oceanic experience. Morris Architects' Director of Design Douglas Oliver said: "In a twist on the symbol of oil dependence, the rig is transformed from obsolete industrial infrastructure into a vibrant component of the biosphere's ecosystem and a destination for discerning travellers" PICTURES COURTESY MORRIS ARCHITECTS

Yet while stringent regulations are in place, much research and much questioning is still needed to determine the safest method of removal: Cut down or complete removal? Should shallow water installations be completely removed and taken to shore for disposal or reuse? Should larger structures located in deepwater be removed at all? As yet there is no standard best practice solution.

#### A costly predicament?

With costs of decommissioning a deepwater platform potentially reaching £200m it follows that studies such as the one by economic analysts Wood Mackenzie in 2000 estimated that with over 300

installations scheduled to close by 2021, the cost to the oil and gas industry would easily reach £11bn.

By 2008, the projected closures and costs had risen with a report by Royal Bank of Scotland oil and gas banker, William Stevens, projecting that by 2040 the expense was to exceed £20bn; £19bn in the UK sector of the North Sea alone.

Operators have been aware of the huge costs involved in removing infrastructure that has reached the end of its production for some time. But with 25bn barrels of oil estimated to be untapped, and with the real potential for future technological advances to discover more, along with rising oil prices, many small and medium-sized enterprises are still investing.

However, concerns over the potential exposure to decommissioning costs is apparent with the slowing in investment – an Oil and Gas UK survey in February 2008 showed that new investment in oil and gas reserves in the UK sector of the North Sea fell to just under £5bn in 2007 – a real-term drop of around £1bn. This is not an unreasonable assumption since UK legislation dictates 'joint and several liability', meaning that new licence owners

assume responsibility for decommissioning costs while the seller also remains exposed since there is no automatic release from liability when licence equity is sold on.

The industry must also be aware that it does not just face the inherent cost of removal. With environmental issues receiving plenty of attention in today's media, the nature of a decommissioning project can potentially escalate into a high-profile event – especially if negatively perceived: in an era of corporate social responsibility, damage to corporate reputation can also damage the bottom line.

#### Navigating the risks

The technicalities and the risks involved in decommissioning offshore platforms in the North Sea is mostly uncharted territory not only for the oil and gas industry but for the insurance industry as well. And much thought and creativity will need to come from both parties to navigate the impending decommissioning wave.

The insurance sector is certainly waking up to the issues that will have to be faced; the challenge is knowing what information to ask for and what details to look for. And this information, just as insuring offshore platforms already require, will need an in-depth understanding of engineering details to appropriately understand the risks faced by each platform to be decommissioned.

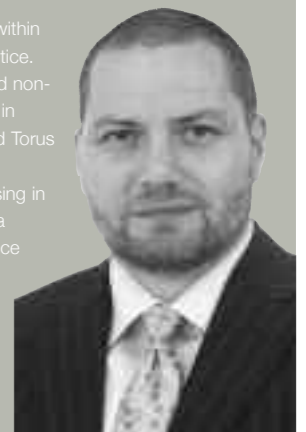
In the meantime the challenge is to secure the long-term viability of the North Sea's remaining reserves. **ep**

#### About Torus

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#### About the author

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