The Decommissioning Company

Finding Petroleum Conference

June 7th 2016

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Overview

- Operators in Europe are forecast to spend over **£60 billion** on decommissioning over the next 30 years
- The decommissioning challenge is complex including:
  - financial security provision
  - OSPAR derogation applications
  - regulatory and tax implications
  - technology development
  - planning and execution
- The Decommissioning Company (**TDC**) was created to provide Operators with business solutions for decommissioning:
  - **TDC** has exclusive rights to market the Twin Marine Lifter (**TML**) technology for removal of platforms and subsea equipment
  - Removal is offered at a price fixed several years in advance and underpinned by an insurance package developed with **Munich Re**
  - The **TML** System is owned by **Shandong Twin Marine Ltd.**
  - **TDC** is forming alliances with other service providers for a comprehensive decommissioning service.

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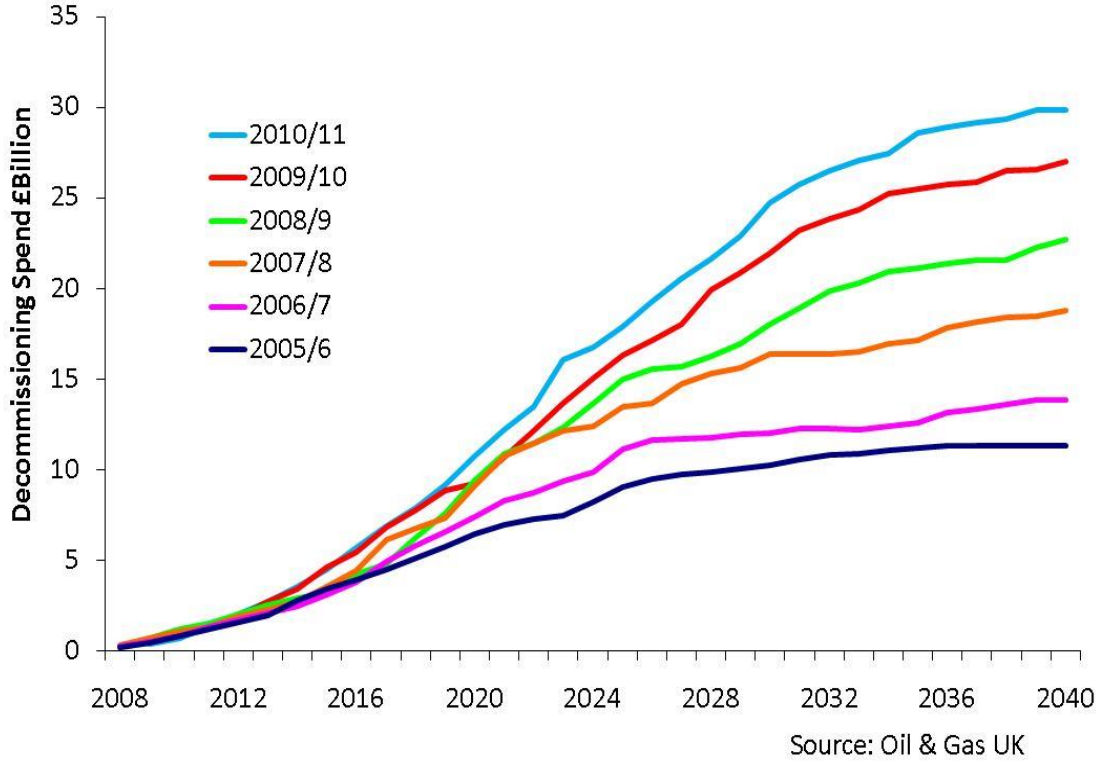
When **TDC** was formed in 2011….



- The Oil & Gas UK Decommissioning Survey cost forecast had risen threefold over 6 years.
- UKCS Operators estimated 2011 that they would spend **£30 billion** on decommissioning.
- Approximately, **£15.5 billion** was forecast to be spent in the decade from 2015 to 2014.

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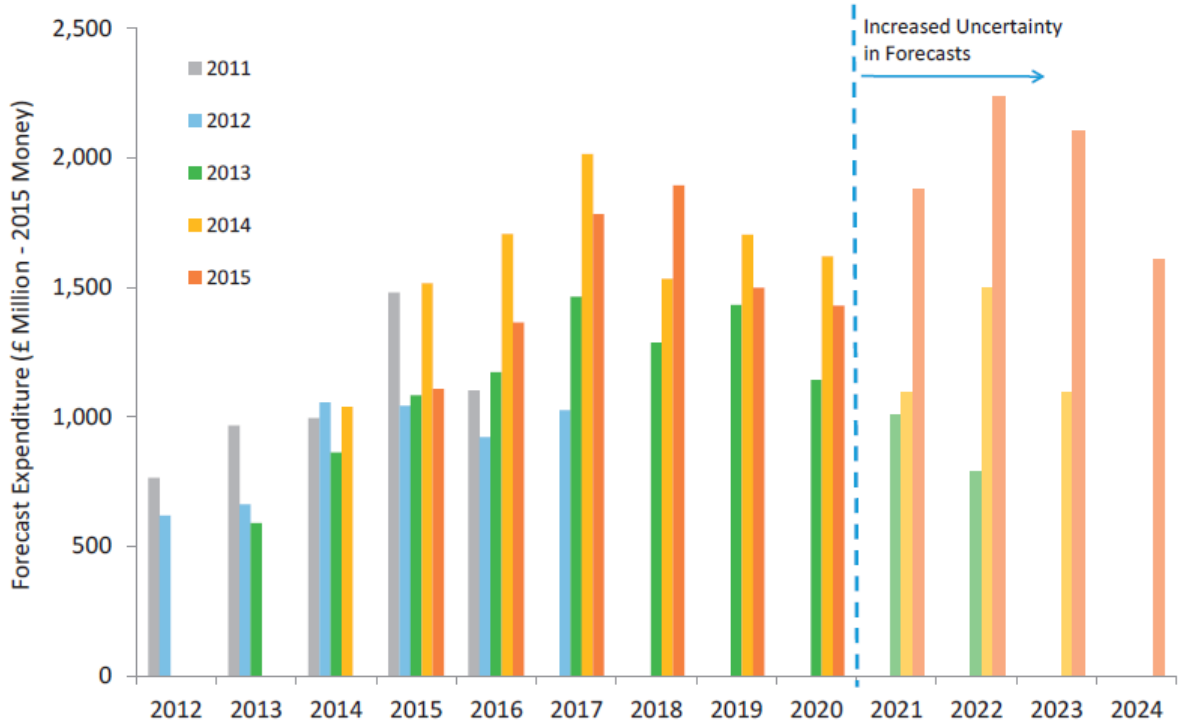
Recent UKCS Forecasts



- The 2015 survey shows UK Operators spending **£16.9 billion** in the next decade.
- During this period **23%** of platforms by weight and **17%** by number will be removed and **30%** of wells P&A.
- This implies that forecast total cost has more than doubled since 2011 to over **£60 billion**.

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The *Non Sequitur* (Part 1)

- The heavy lift vessels active in NW Europe are:

Vessel	Lift capacity	Build date
Hereema Thialf	14,200t	1985
Saipem 7000	14,000t	1983
Hereema Hermod	8,100t	1978
Hereema Balder	6,300t	1978

- Every one of these vessels is at least **30 years** old
- The lift capacities shown are maxima at minimum load radius
  - None of these could remove the **3000t** Dunlin main support frame
- These vessels can only lift small jackets clear of sea level
- They cannot lift jackets designed for barge launch
  - NW Hutton jacket removal required **>40 lifts**
- An average CNS/NNS jacket and topsides requires **150 days** of barge time
  - Limits a barge to **one asset per summer** season
  - Without new technology the North Sea scope cannot be delivered

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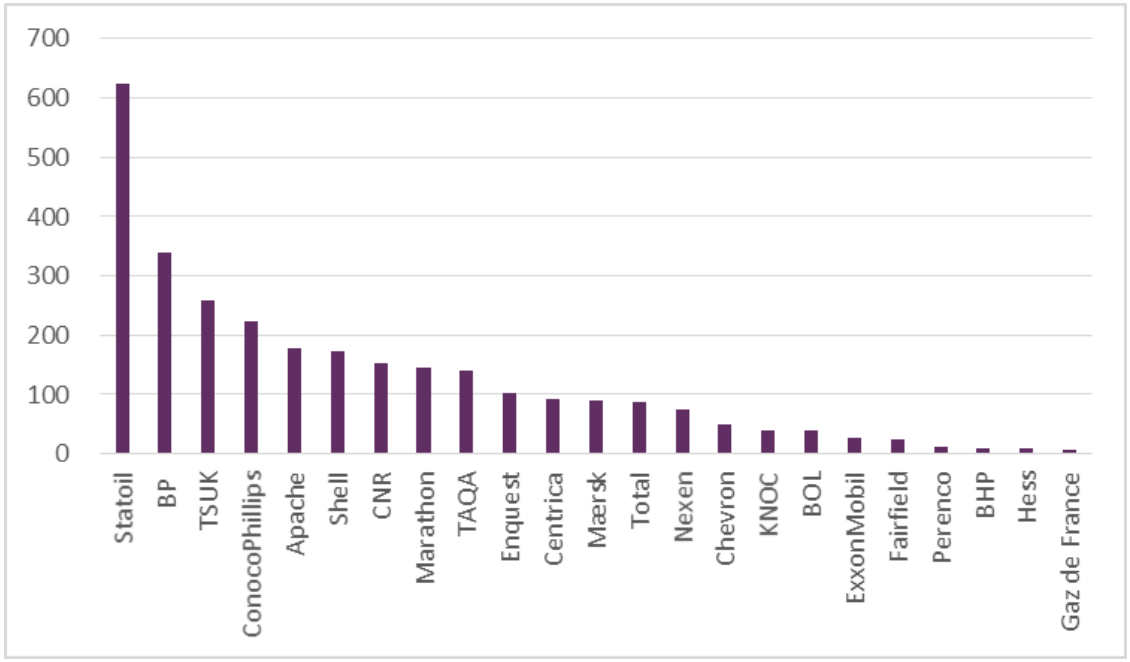
The *Non Sequitur* (Part 2)



- There are 23 Operators in Europe with lifts over **5,000 tonnes**.
- Together they have **3 million tonnes** of platform to remove.
- Based on the NW Hutton experience this amounts to around **150 years** of crane barge time.

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TML Technology

- The Twin Marine Lifter System (**TML**) is designed to install and remove topsides, jackets and subsea structures
- The system has a maximum lifting capacity of **34,000 tonnes**
  - Platforms are removed in far fewer lifts
  - Offshore manhours are reduced by about 80%
  - **Cost overrun risk** is constrained
  - **HSE exposure** is significantly reduced
- Water depth independent with a **2.5m significant wave** height
- **TML** can remove almost all North Sea topsides in a single lift
- **TML** can remove every North Sea jacket in one or two lift

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TML v Single Lift Alternatives

- **TML** is the only one of the proposed single lift solutions with a flexible geometry allowing it to access every North Sea platform.
- It is also not subject to the very large stresses encountered by other single lift systems
- Because of its innate dampening properties, **TML** does not rely on an active heave compensation system.
- **TML** lifts jackets vertically and so can lift every North Sea jacket in no more than two lifts.
- The third TML vessel is identical to the other two and so loads do not need to be transferred to a barge closer to shore.
- The **TML** vessels can move at 14 knots, allowing for rapid delivery of loads to shore and movement between projects.
- With a draft of **11m,** the TML transport vessel does not require special deepwater facilities for offloading topsides and jackets.

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One Reality

This reality has come into sharp focus with the recent issue of Decommissioning Deeds securing current levels of tax relief.

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Two Responsibilities

This will only happen if we optimise learning between projects and maximise co-ordination of facility removal campaigns.

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Two Responsibilities

This will only happen if we can reduce the amount of dead capital tied up in decommissioning security.

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Three Questions

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Three Questions

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Three Questions

A Radical Solution

- A new generation of Owners of super-mature fields
- Primary business is decommissioning
- In-house capability for:
  - Well P&A
  - Platform Removal and Disposal
- Little or no outsourcing of key activities
- **Ability to provide adequate decommissioning security to previous owners without hindering investment**

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Has it been done before?

Hurricane Downers

- Hurricane Katrina summer 2005
- Seven bp platforms destroyed
- Grand Isle and West Delta fields GOM
- Operator managed recovery for a year
- Then brought in **Wild Well Control Inc.**
- WWC managed recovery & remediation
- Turnkey contract
- Transfer of operatorship and license

Wild Well Control
A SUPERIOR ENERGY SERVICES COMPANY

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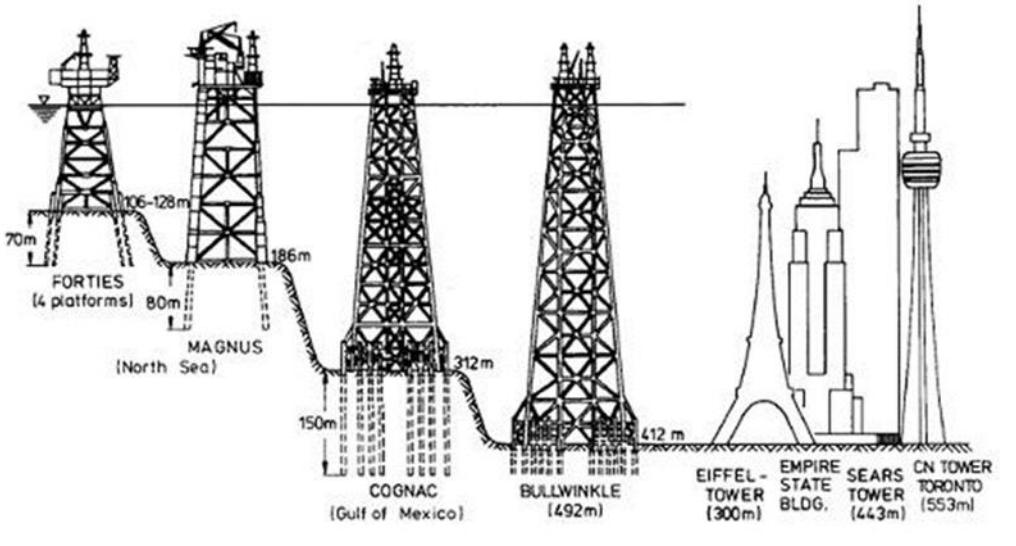
Bullwinkle

- Gulf of Mexico
- Green Canyon Block 65
- Installed in 1988
- 150 miles from New Orleans
- 1,353 ft water depth
- Shell operated



- Deepest fixed leg production platform on the Outer Shelf
- A total of 29 wells to plug and abandon

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Bullwinkle

- **Superior Energy Services** took 100% ownership in Feb 2010.
- Superior is Wild Well Control parent company.
- Field was producing 4,000boepd.
- Sold 49% to Dynamic Offshore Resources.
- Dynamic operate the field.
- At the end of economic field life:
  - Superior will P&A 29 wells.
  - Platform will be removed.
  - Shell will pay Superior a pre-agreed undisclosed amount.

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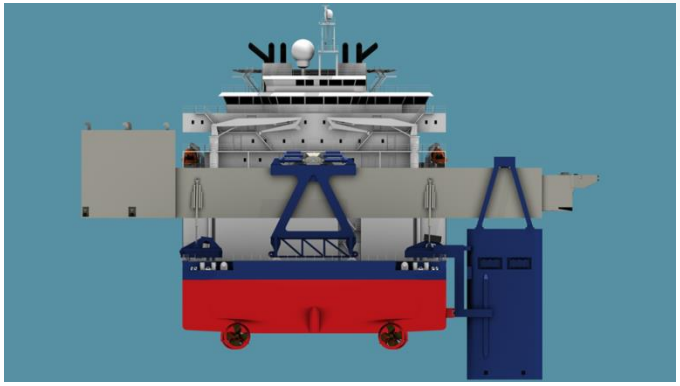
What is needed
for it to work here?

Role of Insurance



- **TML** transfers most deconstruction from offshore to onshore
- Cost overrun risk is significantly reduced
- **TDC** has developed an insurance product:
  - designed and led by Munich RE
  - provides performance guarantee for system capability
  - underpins fixed price platform removal offering
- Price certainty will be used to build **TML** market share:
  - attractive to Operators both large and small
  - can be used to fix financial security provision
  - can be purchased by buyers or sellers of mature oil production

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Shoot for the moon…..

- The Decommissioning Company has brought together
  - The Twin Marine Lifter System
  - Munich Re insurance product
- Offering a comprehensive platform disposal package
- A fixed price is available several years in advance of COP
- Platform removal is underpinned by AA insurance
  - suitable for decommissioning security
- Alliances with P&A providers will be formed
- Field ownership is under discussion with Operators

…and you might get the stars!

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