

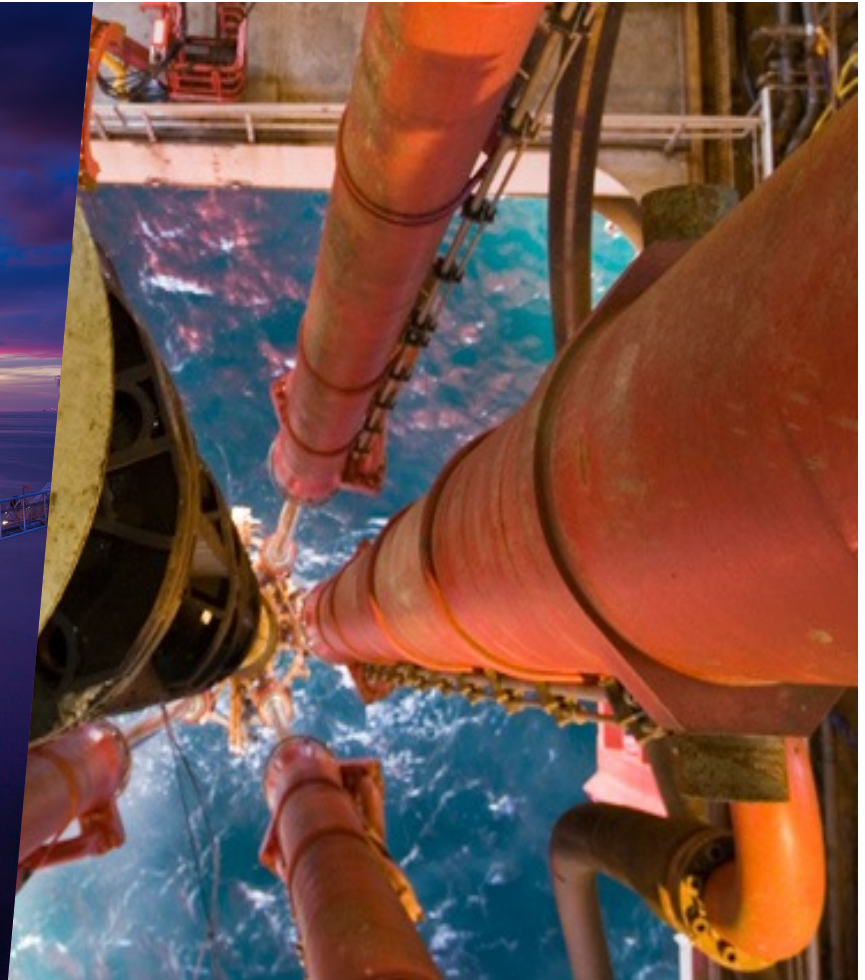


International
Association
of Oil & Gas
Producers

Offshore Platform Decommissioning

2021 Science Day

15 April 2021
Win Thornton



Offshore Platform Decommissioning

a view from the waterline



- Assets & Scope
- Regulations
- Supply Chain
- Methods
- Disposal
- Questions

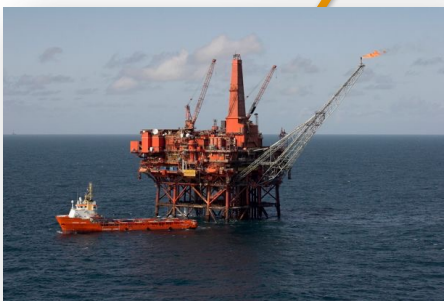
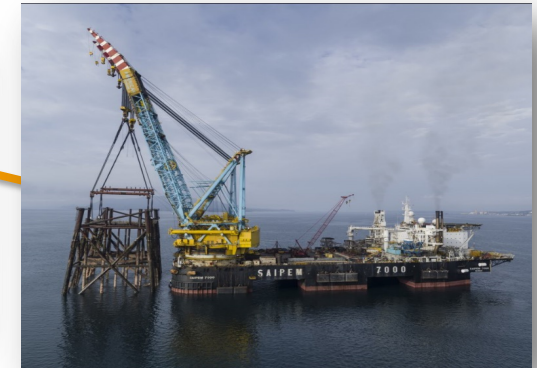
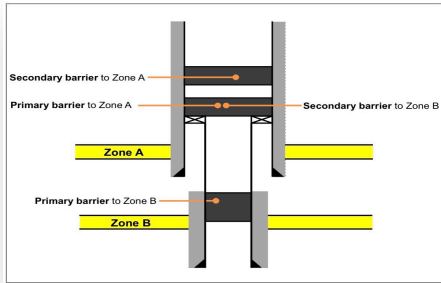
Decommissioning Offshore Platforms

MODU drilling rigs and jackup units are not offshore platforms



Decommissioning Scope

establish asset definition, end state and decommissioning methodology



Safe, Responsible and Cost Effective

options selected through comparative assessments or prescriptive rules



Where there are options, selection of decommissioning solutions based on:

- Safety of own staff and contractors
- Residual risk to “other users of the sea”
- Ecosystem impact of removal, or leave in place
- Emissions and energy use from activities
- Waste hierarchy principles
- Stakeholder views
- Technical/engineering options
- Cost

Decommissioning Regulations

process understood; global experience being gained through projects



RECOMMENDED PRACTICE
DNV-RP-H102

MARINE OPERATIONS DURING REMOVAL OF OFFSHORE INSTALLATIONS

APRIL 2004

November 2018
Version 3

Offshore Petroleum Regulator
for Environment & Decommissioning
Replace with operator logo and picture of asset

Standard Decommissioning Programme(s) Template



REPORT 584 JULY 2017

Overview of International Offshore Decommissioning Regulations

Volume 1 – Facilities



REPORT 585 JULY 2017

Overview of International Offshore Decommissioning Regulations

Volume 2 – Wells Plugging & Abandonment



International
Association
of Oil & Gas
Producers



§ 250.1700

30 CFR Ch. II (7-1-15 Edition)

complete measurement of produced sulphur for royalty purposes.
(b) Evidence of mishandling of produced sulphur from an offshore lease, or tampering or falsifying any measurement of production for an offshore lease, shall be reported to the Regional Supervisor as soon as possible but no later than the next business day after discovery of the evidence of mishandling.

Subpart Q—Decommissioning Activities

GENERAL

§ 250.1700 What do the terms "decommissioning", "obstructions", and "facility" mean?

(a) Decommissioning means:

- (1) Shutting off, sea, or sulphur operations; and
- (2) Retaining the lease or pipeline right-of-way to a condition that meets the requirements of regulations of BSEE and other agencies that have jurisdiction over decommissioning activities.

(b) Obstructions mean structures, equipment, or objects that were used in oil, gas, or sulphur operations or marine growth that, if left in place, would hinder other uses of the OCS. Obstructions may include, but are not limited to, shell mounds, wellheads, casing stubs, mud line suspensions, well protection devices, subsea trees, jumper assemblies, umbilicals, manifolds, termination skids, production and pipeline risers, platforms, templates, pilings, pipelines, pipeline valves, and power cables.
(c) Facility means any installation other than a pipeline used for oil, gas, or sulphur activities that is permanently or temporarily attached to the seabed on the OCS. Facilities include production and pipeline risers, templates, pilings, and any other facility or equipment that constitutes an obstruction such as jumper assemblies, termination skids, umbilicals, anchors, and mooring lines.

218

§ 250.1701 Who must meet the decommissioning obligations in this subpart?

(a) Lessees and owners of operating rights are jointly and severally responsible for meeting decommissioning obligations for facilities on leases, including the obligations related to lease-term pipelines, as the obligations accrue and until each obligation is met.
(b) All holders of a right-of-way are jointly and severally liable for meeting decommissioning obligations for facilities on their right-of-way, including right-of-way pipelines, as the obligations accrue and until each obligation is met.

(c) In this subpart, the terms "you" or "I" refer to leases and owners of operating rights as to facilities installed under the authority of a lease, and to right-of-way holders as to facilities installed under the authority of a right-of-way.

§ 250.1702 When do I accrue decommissioning obligations?

- (a) You accrue decommissioning obligations when you do any of the following:
 - (1) Drill a well;
 - (2) Install a platform, pipeline, or other facility;
 - (3) Create an obstruction to other users of the OCS;
 - (4) Are or become a lessee or the owner of operating rights of a lease on which there is a well that has not been permanently plugged according to this subpart; a platform; a lease term pipeline; or other facility; or an obstruction;
 - (5) Are or become the holder of a pipeline right-of-way on which there is a pipeline, platform, or other facility; or an obstruction; or
 - (6) Re-enter a well that was previously plugged according to this subpart.

§ 250.1703 What are the general requirements for decommissioning?

When your facilities are no longer useful for operations, you must:

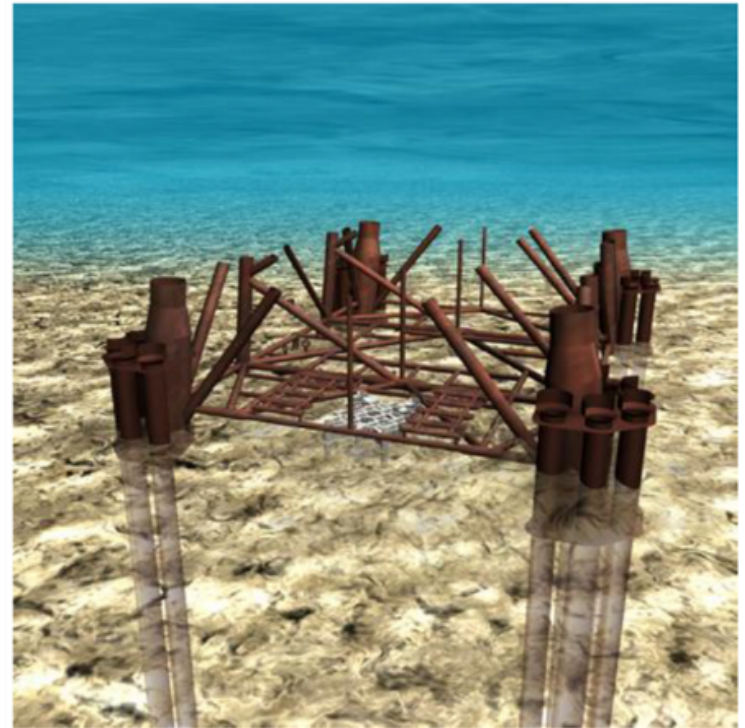
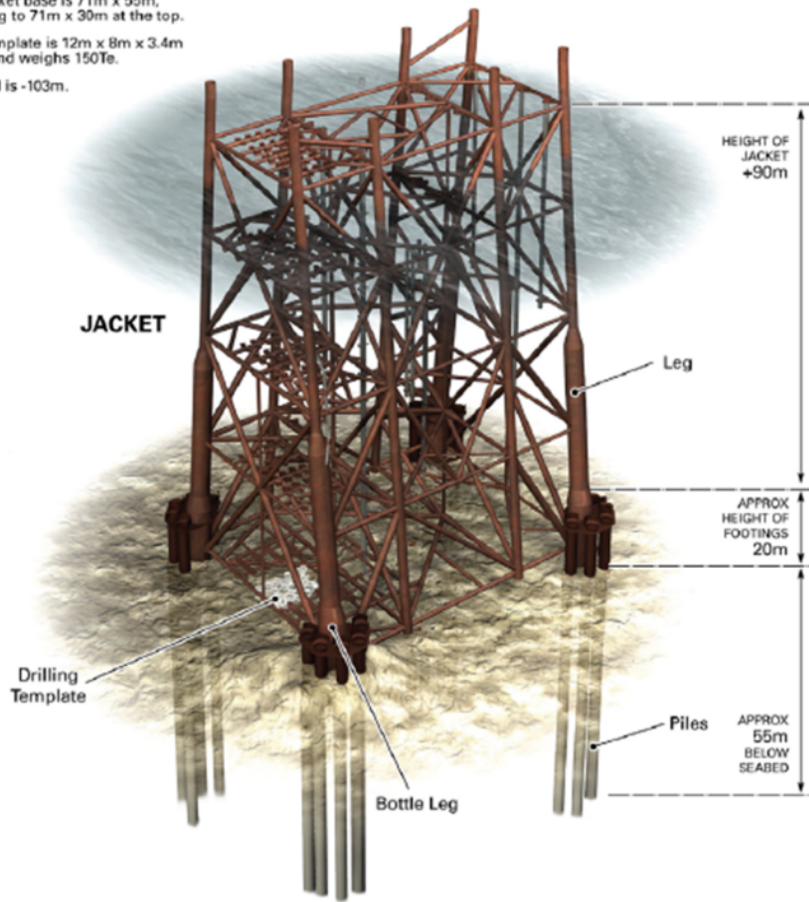
- (a) Get approval from the appropriate District Manager before decommissioning wells and from the Regional Supervisor before decommissioning



End State - OSPAR 98/3 Derogation

enables safe decommissioning of large jackets

The jacket base is 71m x 55m, tapering to 71m x 30m at the top.
The template is 12m x 8m x 3.4m high, and weighs 150Te.
Seabed is -103m.

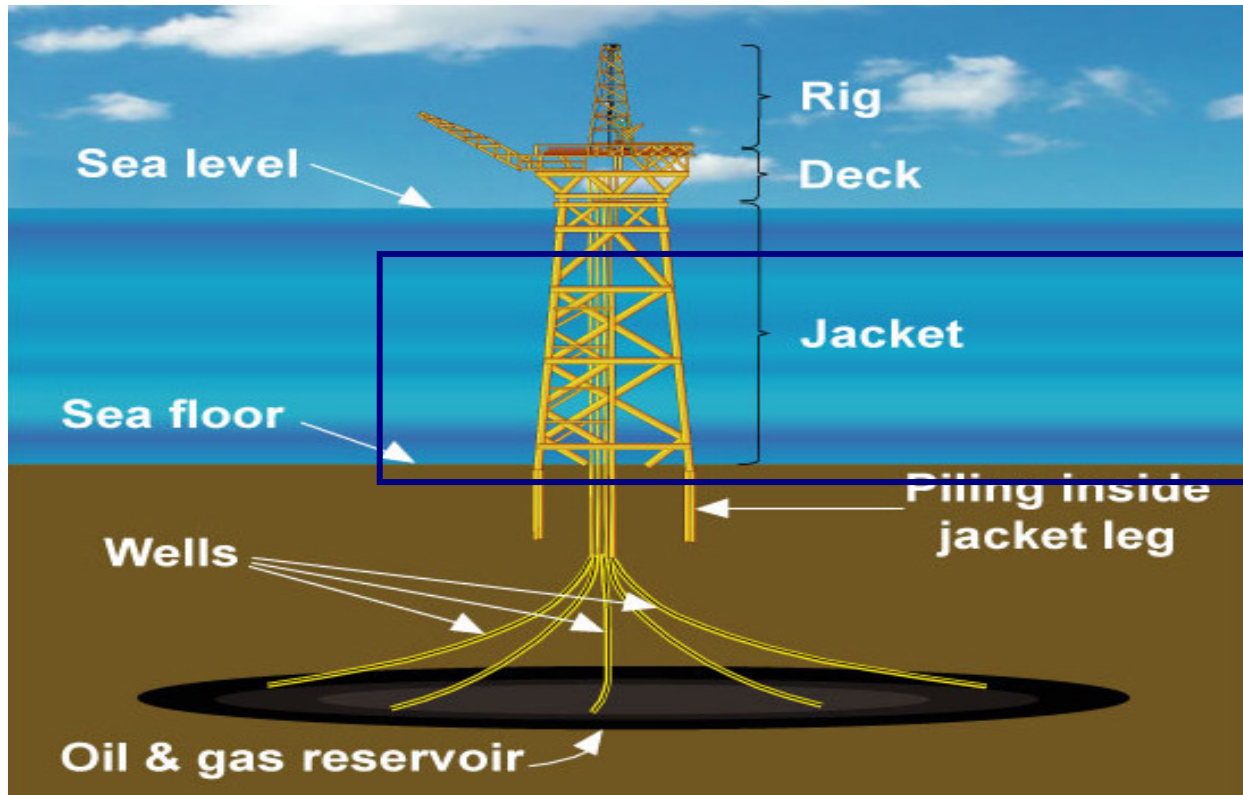


End State – GOM Reefing In-Place

preferred configuration is partial abandonment in-place vs topple or cluster

Program gets the steel

Operator keeps the well liability

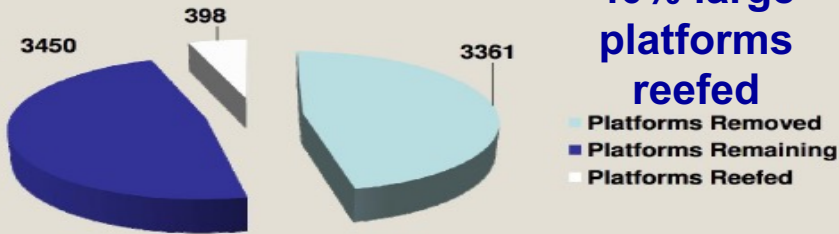


Leave Jacket Base as Reef

Louisiana Artificial Reef Program

Gulf of Mexico Platforms 1942-2010

7209 Total Platforms Installed - 11% of All Platforms Decommissioned Were Reefed

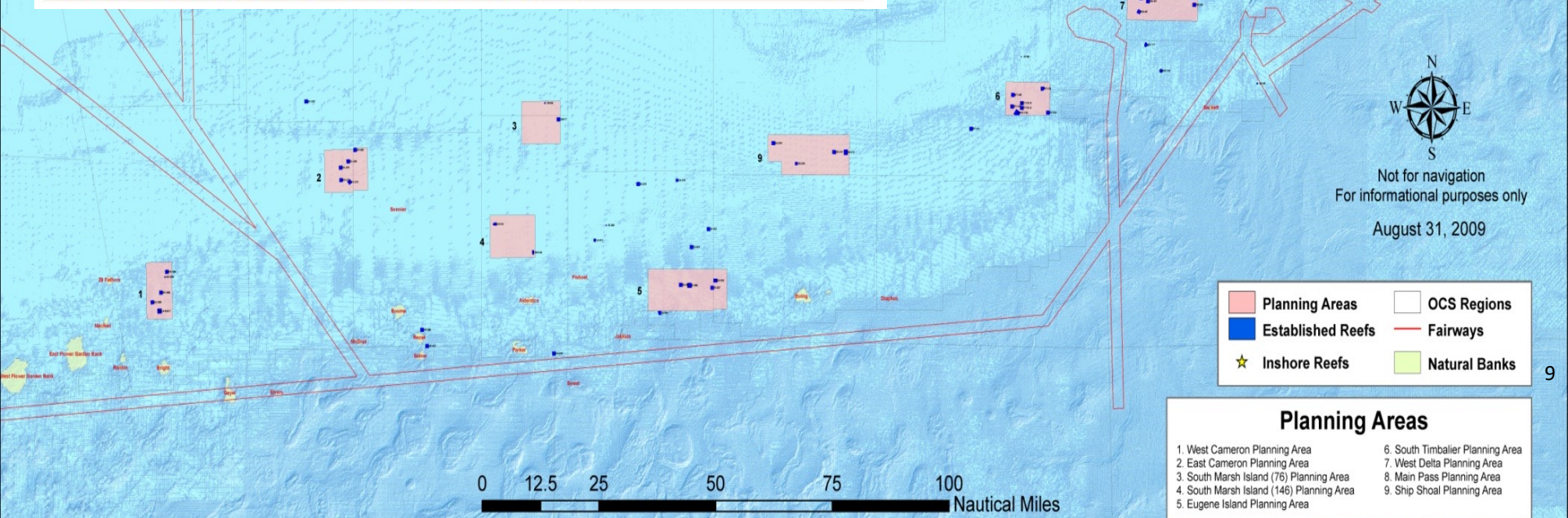


**40% large
platforms
reefed**

■ Platforms Removed
■ Platforms Remaining
■ Platforms Reefed

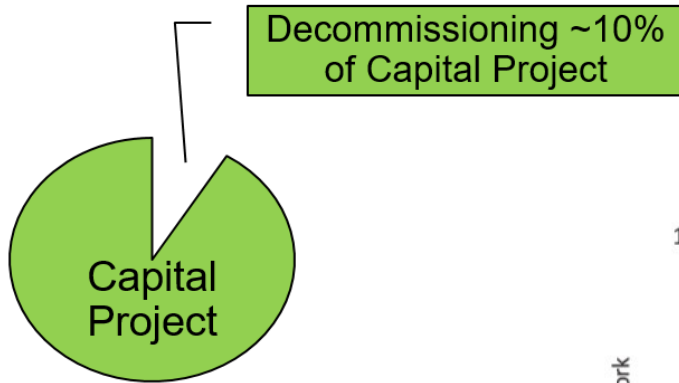


MMS: Securing Ocean Energy & Economic Value for America

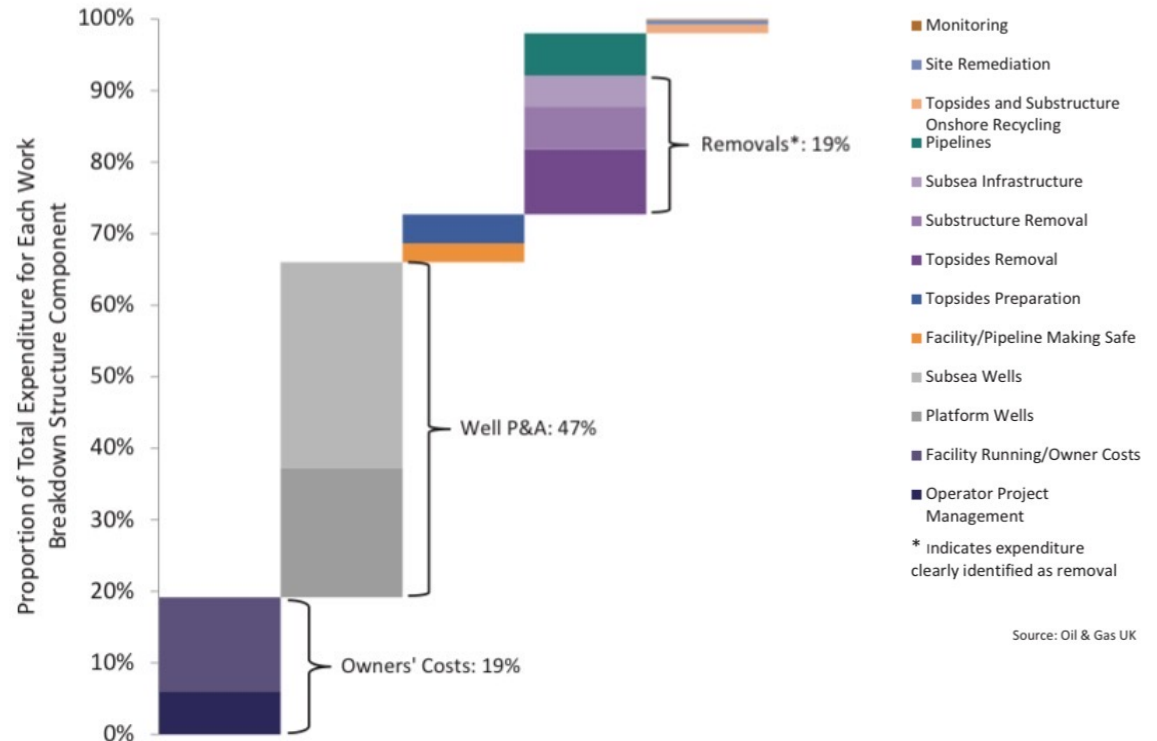


Decommissioning Costs

distribution varies globally with regulations and asset makeup/configuration



All UKCS Projects



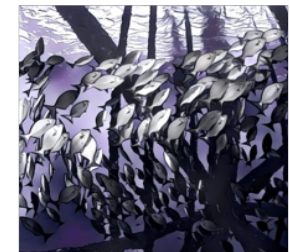
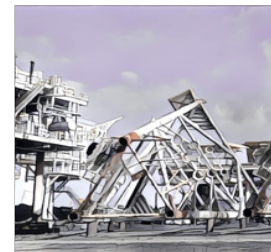
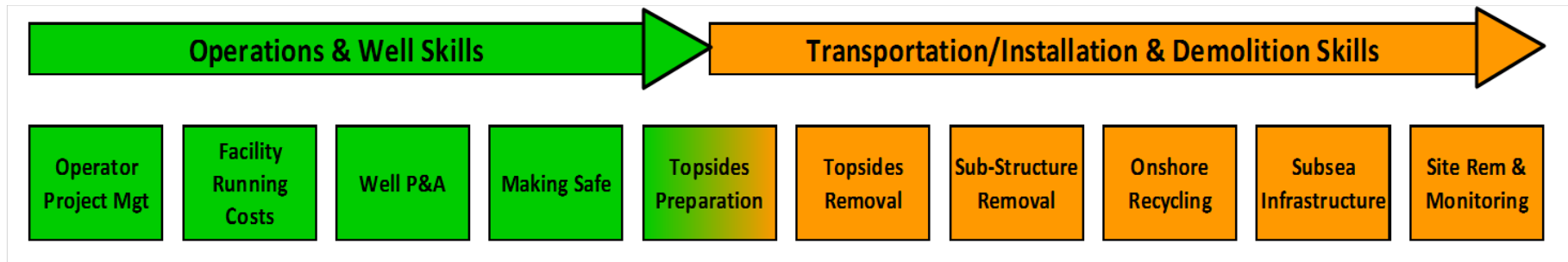
Source: Oil & Gas UK

Decommissioning Supply Chain

skills & opportunity throughout the WBS; maturing global supply chain

The initial phases of a decommissioning project use skills that are very similar to Late Life Operations. Be the incumbent or improve on the incumbent.

The later phases of a decommissioning project use skills that are very similar to Installation, IMR and Demolition. Be a part of an integrated solution that minimizes/optimizes offshore/onshore content.



Multiple Methods & Tools Available

global supply chain capable of delivering fit for purpose solutions

Reverse
Installation

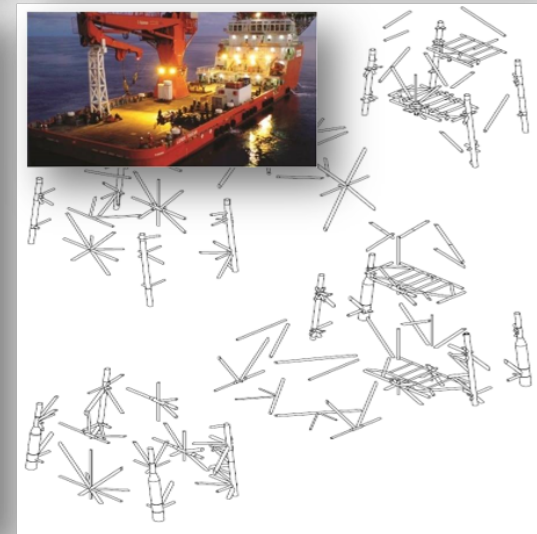
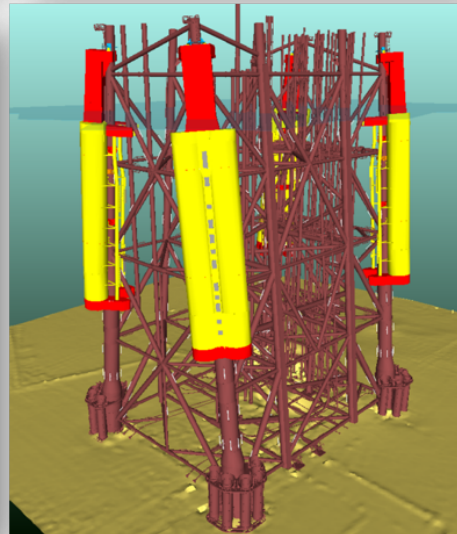
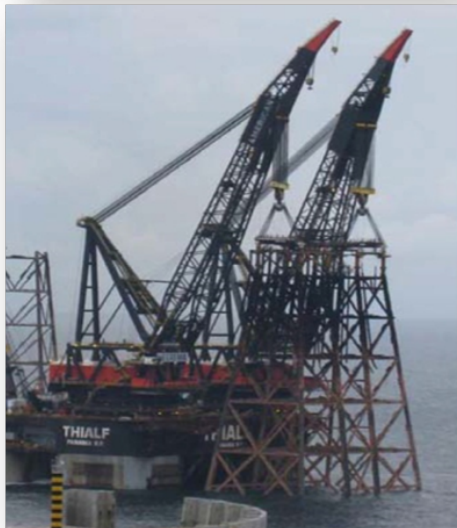
Single Piece

Piece Small

Topsides

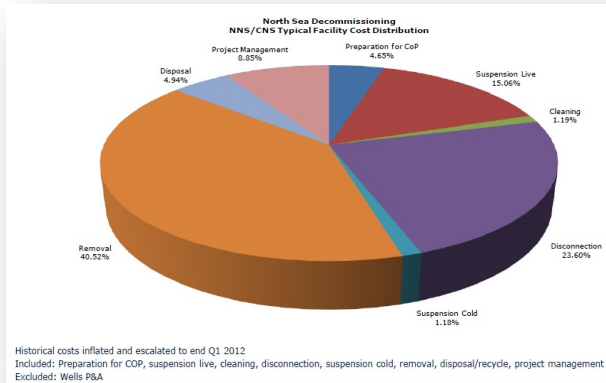


Jacket



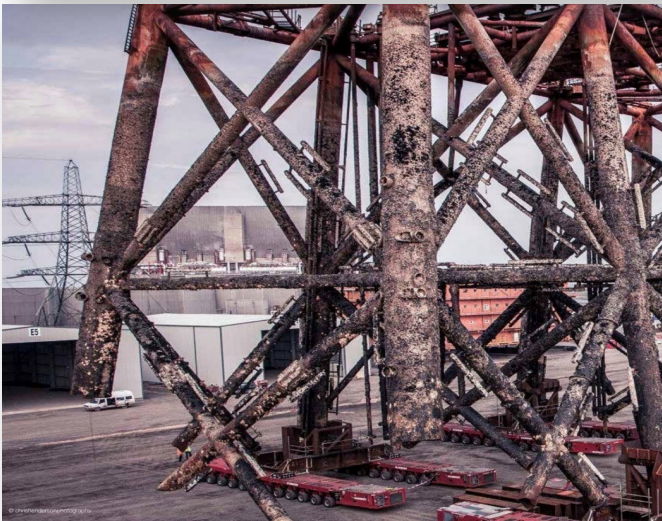
Benchmarking Performance

learning by doing – industry sharing global best practices and lessons



Disposal

existing capability and experience; integrated into global supply chain



Reuse & Repurposing

process exists but opportunities very limited, most platforms fully removed

Offshore Oil and Gas Decommissioning
Decom North Sea / Zero Waste Scotland Project
Platform Removal Methods, Inventory Characterisation and Re-use Solutions
Report and Recommendations

Power and productivity for a better world™

In Summary

We are doing ok in decommissioning

- **Known** processes/tools/regulations
- **Learning** as we go, continuous improvement
- **Supply chain** is in motion to step up
- **Asset risks are known** through existing operations
- Decommissioning **activities are similar** to operations and construction...with similar risks...ones that are known
- **Risk profile reduces through decommissioning process** as wells are plugged and hydrocarbons removed
- Disposal activity is straight forward and the **supply chain is well positioned** to deliver now and as work load grows

For more information please contact:

Win Thornton win.thornton@bp.com

+44 7900 277 834

+1 281 217 8220

www.iogp.org

Registered Office

City Tower
Level 14
40 Basinghall Street
London EC2V 5DE
United Kingdom
+44 (0)20 3763 9700
reception@iogp.org

Brussels Office

Avenue de Tervuren 188A
B-1150 Brussels
Belgium
+32 (0)2 790 7762
eu-reception@iogp.org

Houston Office

19219 Katy Freeway
Suite 175
Houston, TX 77094
United States
+1 (713) 261 0411
reception@iogp.org