XODUS

WE ARE XODUS.

WWW.XODUSGROUP.COM

Unrivalled Expertise and Experience

Industry Leaders

- Supporting OEUK on development for designing for Wind Decom guidance note
- Engineering for Wind Decom white paper (Due June 2023)
- Supported 3 of the 4 CGBS structures in the UK planning process to date.
- Supported 13 OSPAR derogation cases.
- Completed over 300 decommissioning scopes across the full spectrum of oil and gas assets and their late-life and decommissioning operations.

2022
Over 65% of approved DPs supported by our team at Xodus.
2021
As of April 2021, Xodus delivered over 63% of all submitted/ pending approval Decom programmes in the UK.

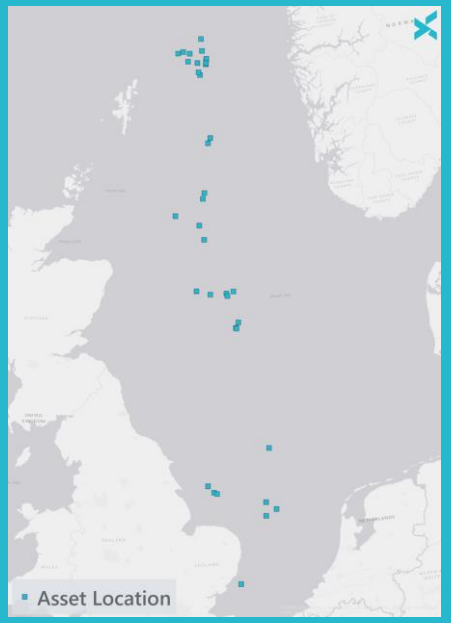
Global Excellence

Completed decommissioning scopes in:

- UK;
- Norway;
- Netherlands;
- Indonesia;
- Malaysia;
- Qatar;
- Mediterranean;
- Australia; and
- Egypt.

Supported Governments with late-life and decommissioning guidance development and industry workshops in:

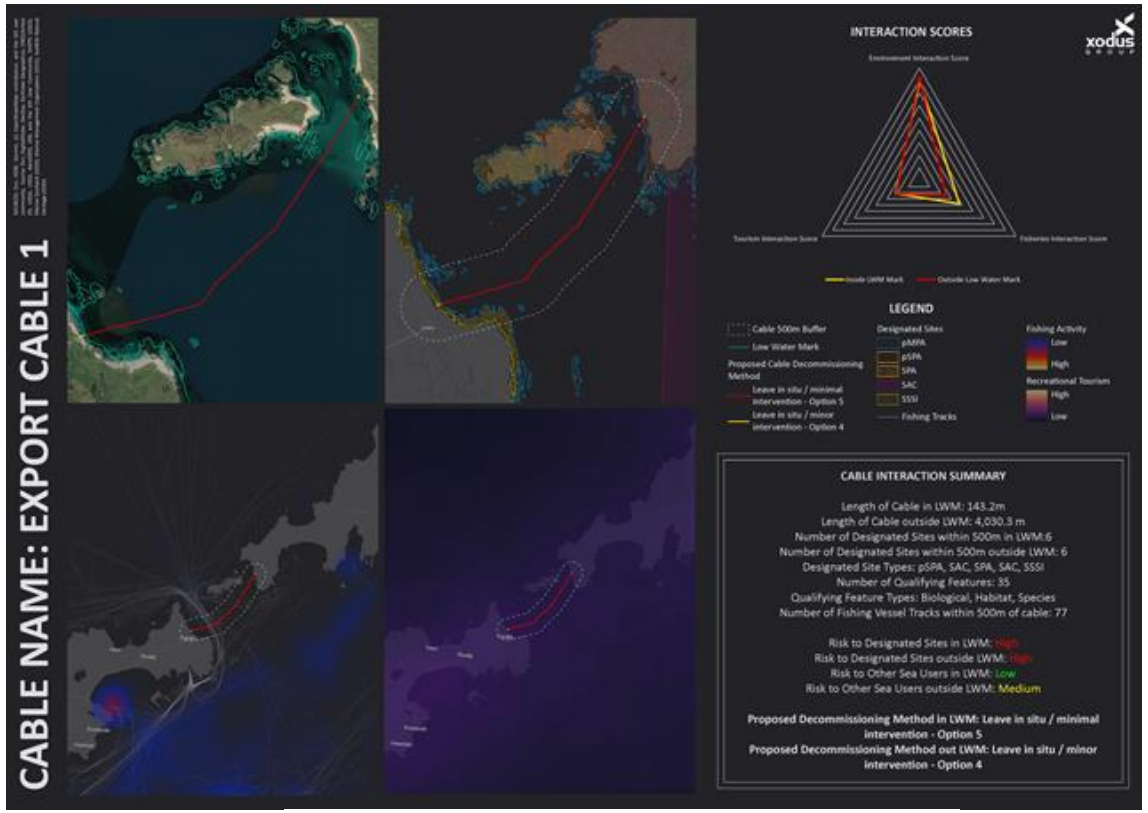
- Japan;
- Australia;
- UK; and
- Indonesia.

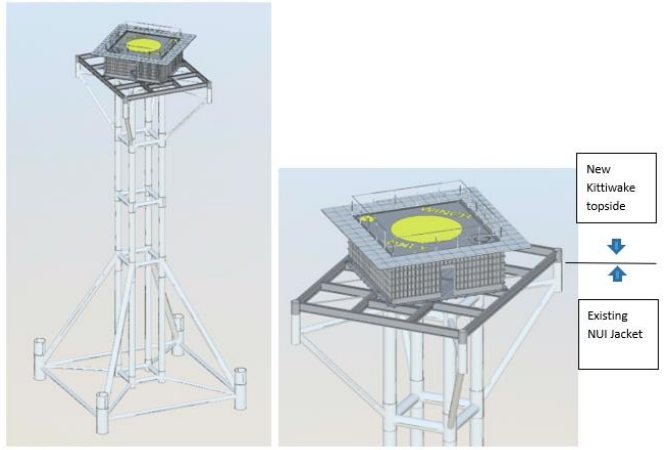


World leading expertise.
Global experience.

Renewables Decom Support

- Marine Scotland's 3rd party reviewer of renewable DPs for offshore wind and associated cost estimates
- Fully integrated engineering and environment capability
- Structural assessments (reuse studies – ORSTED)
- Cost estimates (OFTOs, ORSTED, SSE etc)
- Removal studies
- Cable risk assessment tool – Links with decom estimates and associated decom methods – This is an automated tool we have created
- Reuse/ repurposing studies (ORSTED, CNOOC, TAQA)
- Win





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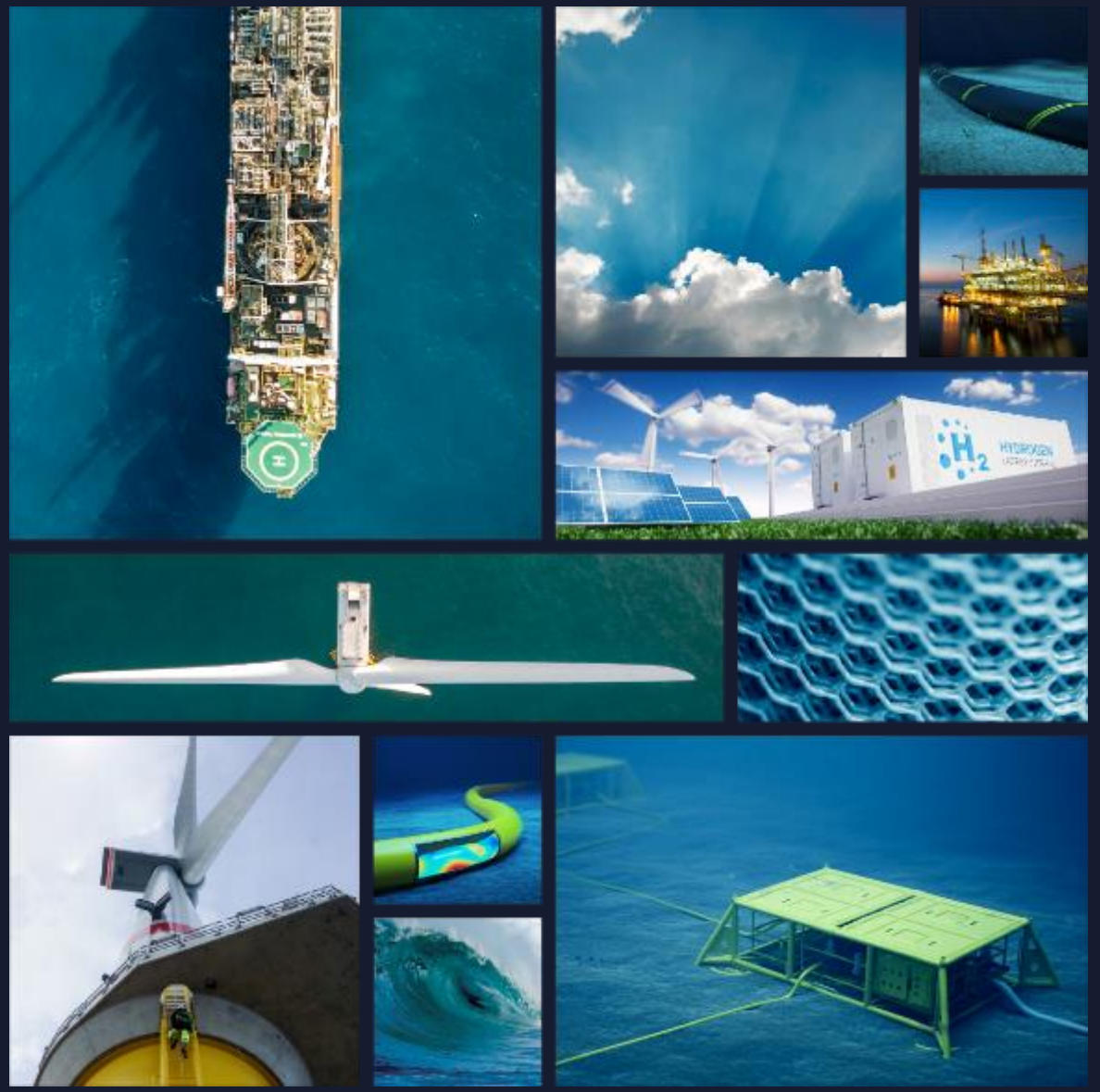
Improving the Odds of Success



Gareth Jones

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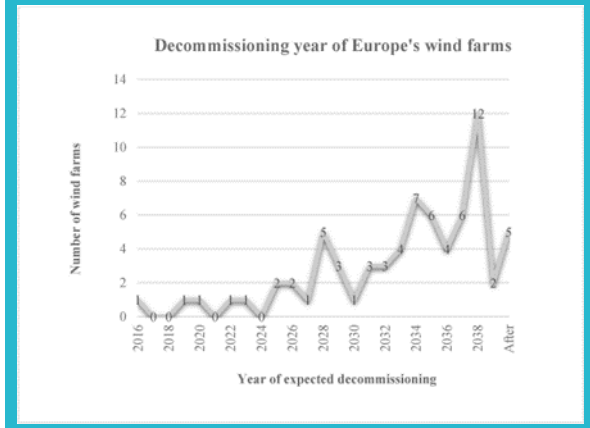
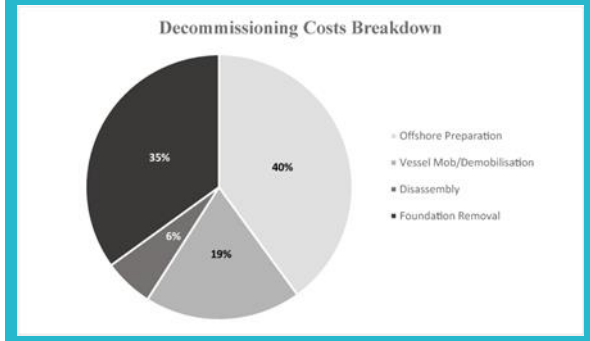
Current status

- Draft DPs called for at point of development plan submissions
- Current plans :
  - WTGs removed (including substructure)
  - Substructure piles cut up to 1-3m below seabed
  - Export and inter-array cables largely to be decommissioned *in situ (although cost should be carried to remove)*
  - Scour protection (mattress and rock bags) removed where possible
- OFTOs responsible for decommissioning transmission infrastructure (offshore substation and export cable)

Challenges/ Opportunities

- Decom still coming as an after thought – “plan to reverse install or will be explored nearer the time of execution” – Risk missing the cost saving and efficiencies of planning decom from the start
- Associated cost of decom underestimated based on lack of engineering up front
- Key learnings from O&G decom potentially being missed
- Disparity between wind lease and OFTO lease durations
- How are projects factoring in repowering strategies

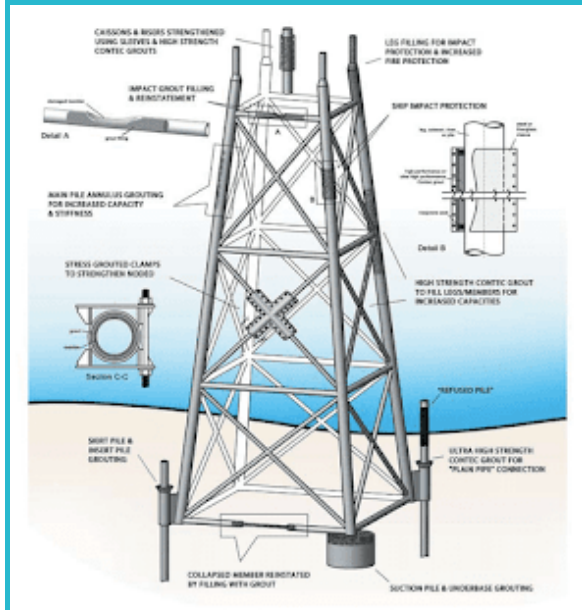




Ref: Sustainable decommissioning of an offshore wind farm; Eva Topham, David McMillan

Challenges/ Opportunities

- WTG and substructure design could limit reuse of OAAs
- Cables *in situ* could compromise use of OAAs in future
- ‘Grey area’ around rock platforms for WTGs
- Waste of resources left *in situ* and entrained carbon cost



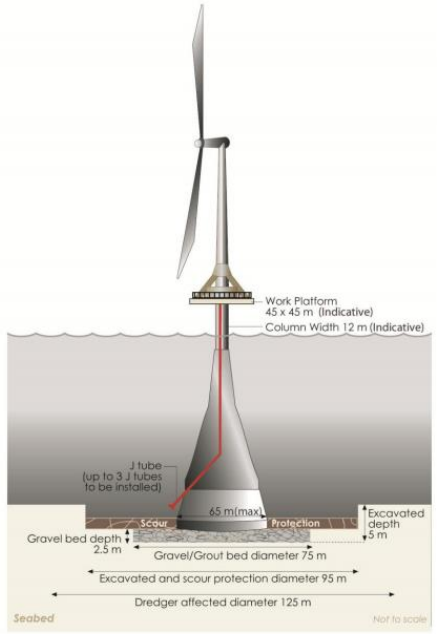


Plate 2.2-8 Diagram of a Typical GBS Substructure and Gravel Bed Foundation

Recommendations

- Consider Class 4 cost estimate based on sound engineering
- Focus on repowering and designing footings and cables to be fully removable, i.e. potentially not piled structures, alternative cable protection
- Consider alignment of Lease life span with OFTO and repowering strategies
- Evaluation of true costs comparison of designs with respect to carbon cost and repowering/ decom philosophies

THIS IS WHAT WE DO.