



DeepOcean Group Holding AS &  
CTC Marine Projects Limited

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Subsea 2012

How to successfully convert Oil and Gas cable installation techniques for  
the Offshore Renewables market

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# Presentation Overview

- Safety First
- DeepOcean Group Overview
- Synergies of Power Cables Oil & Gas and Renewables
- Key Differences
- Future & Current Solutions
- Conclusions



# DeepOcean Group Overview and Power Cable Capabilities

## DeepOcean Group offers a broad, global platform of subsea services

### Leading Market Position

- World's leading provider of subsea trenching and protection services
- Largest IMR player in the demanding North Sea
- Strong track record and capabilities within survey, construction, decommissioning and flexible product installation

### Geographic Diversification

- Diversified from North Sea to include Mexico, Brazil and APAC with a permanent office
- Additional areas of work include Mediterranean, West Africa and Middle East
- Entrenched in local markets through track records, capabilities, innovation and operating history

### Large & Modern Fleet

- Largest and most sophisticated fleet of marine trenching vehicles globally, including pipeline and cable ploughs, jet trenching ROVs and mechanical trenchers – solutions for all soil conditions & all types of power cables
- 7,000T HVDC cable installation spread
- Operations performed from high specification multipurpose vessels
- High class survey and IMR equipment as well as a modern fleet of full work class ROV's

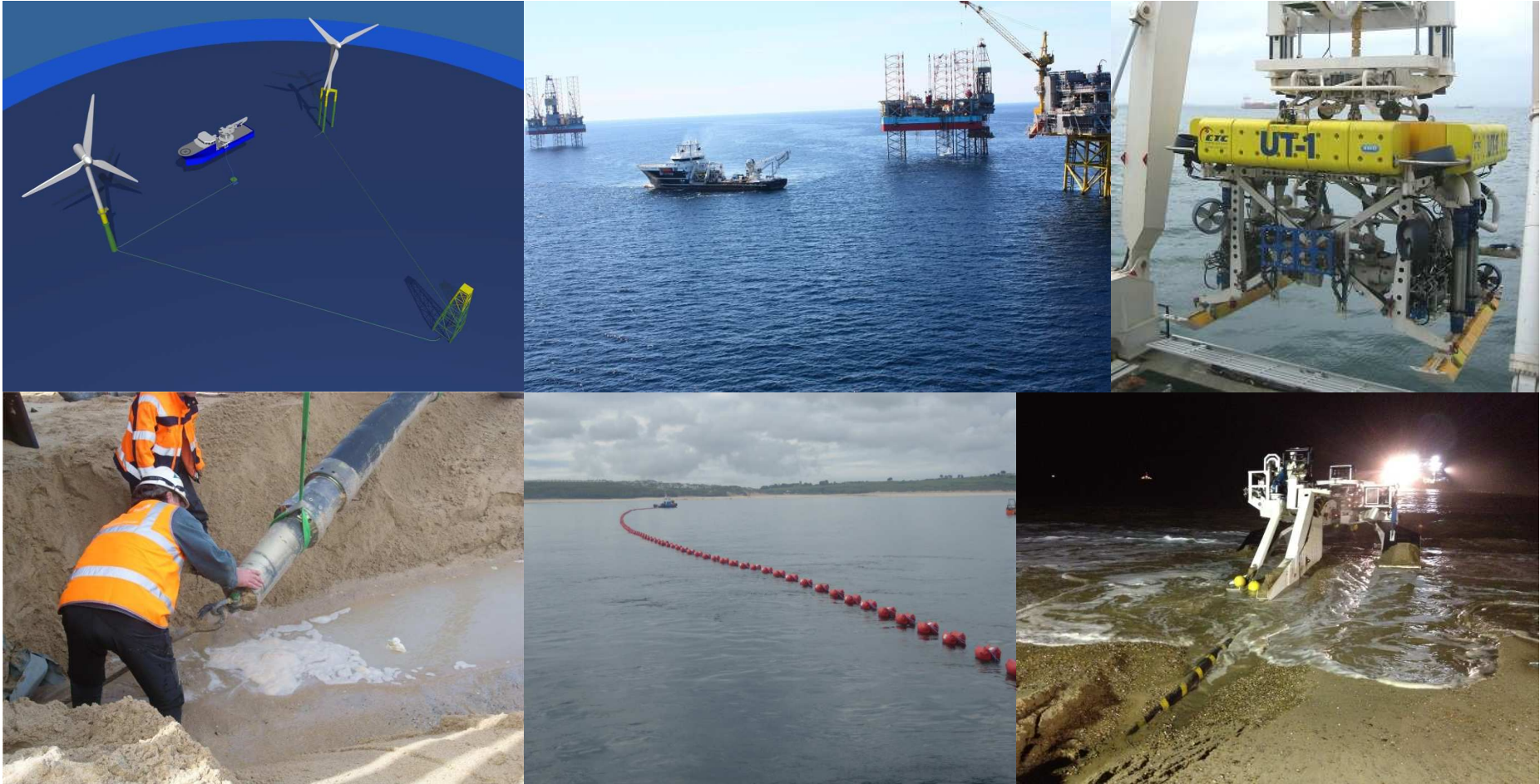
### Strategic Offshore Bases

- Large-scale engineering maintenance and freight forwarding facilities in the UK and Norway with deep water berths and a dedicated heavy lift quay with associated storage space

### Strong Customer Base

- Customers include Statoil, Petrobras, BP, Subsea 7, Alcatel/Lucent, CNOOC, ConocoPhillips, McDermott, NSW and LS Cables
- Targeting oil companies, EPIC contractors, Grid and Product Supplier to cover all of their subsea services requirements

# Synergies & Comparison



## Cables

- Array cables – 800~1200m cables lengths – Higher Volumes - 80~100 cables per year
- Export cables – 20~120km lengths (5,000 ~9,000 T cables)

## Vessels

- Pushing for higher volumes and weights – specific new vessels
- Multiple tasks from same vessel – multi skilled personnel
- Vessel transfers – safety and wave height limitation

## Trenching Tools

- Mechanical trenching innovations for cables ends and depth of burial
- Jetting innovations – cable burial in clays

## Contracts, Clients, Planning & Risk



Current and Future Solutions

# Array Cable Installation & Trenching



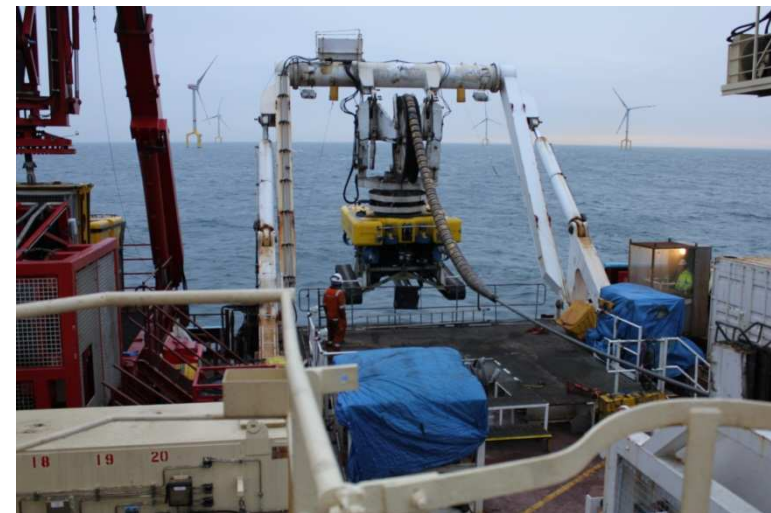
## R-Class Vessel Solution

5,400T AC array cable storage & handling system

Capable DP/II vessel solution

Suitable platform for trenching equipment

Accommodation for 68 POB



# Shallow Water & Export Cable Installation



## ASV Pioneer Shallow Water Anchor Barge

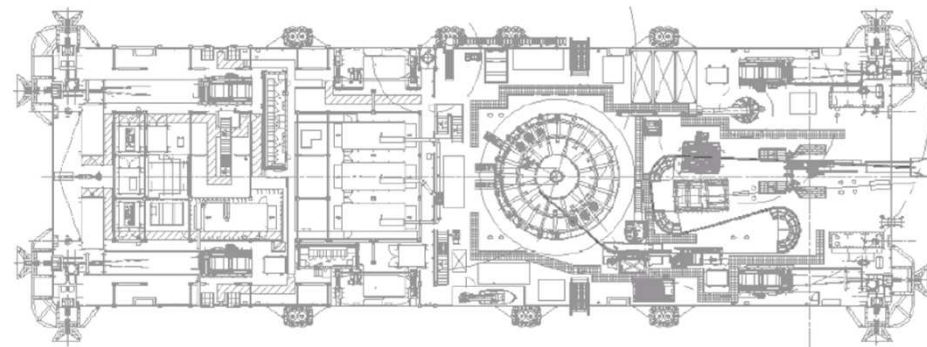
2000t cable lay capacity in 4m water depth

Large Deck Area (1,100m<sup>2</sup>)

60te A-Frame & Power Cable Plough

Suitable platform for other trenching equipment

Accommodation for 120 POB



# 7,000T HVDC Bundle & Lay Spread



## R-Class Vessel Solution

7,000T DC & FO cable storage & handling system

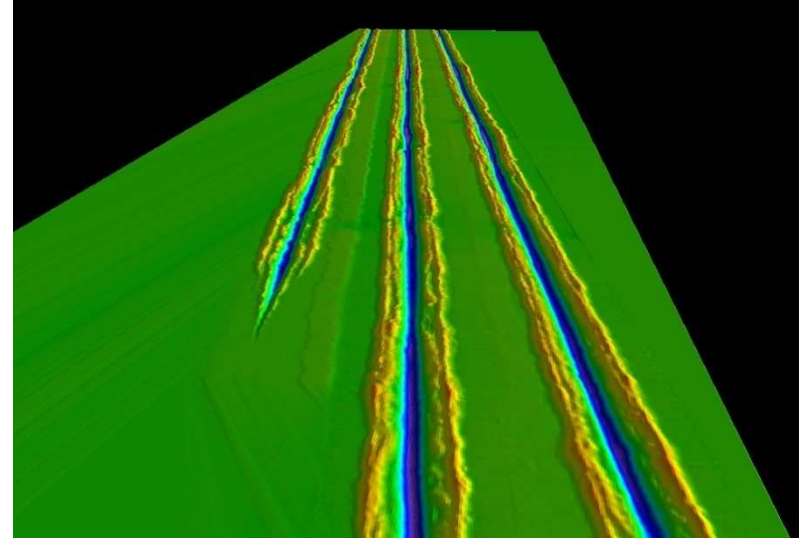
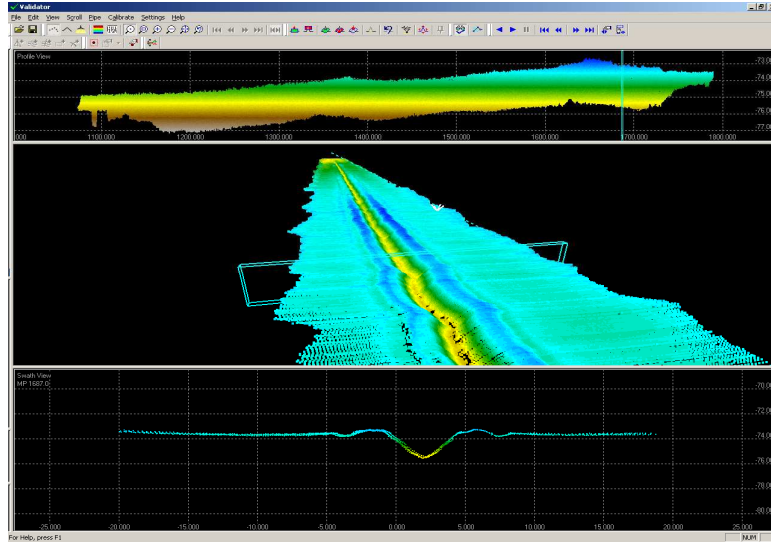
Cable management and bundling solution

Capable DP II vessel solution

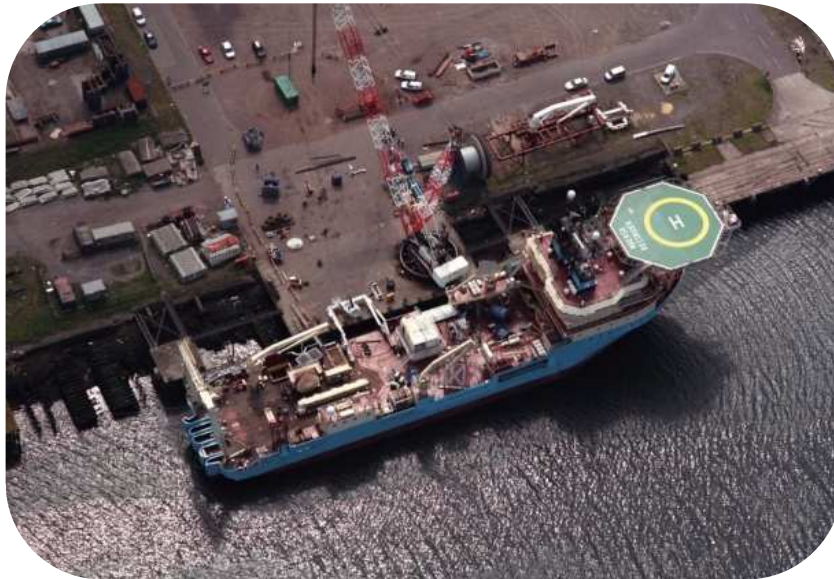
Suitable platform for trenching equipment

Accommodation for 68 POB

# Pre-Cut Trenching



# Teesside Offshore Base



- TOB is CTC Marine's strategic North Sea large scale engineering maintenance and freight forwarding facility in the UK
- Conducting vessel and equipment mobilisations & demobilisations based on the 'Just in Time' principle
- 'Heavy Lift Quay' (HLQ) includes a dedicated high lift capacity crane with associated ground loading capability on the quayside
- Deep Water Berth
- Potential cable storage / repair / replacement base for renewables and interconnector market

# Conclusions

- Market requires specific solutions but has synergies with the O&G sector
- Safety – moving in the right direction but must come first in all considerations
- Capacity requirements will cause conflict between the sectors
- Innovate solutions specific for offshore wind applications

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