



LEVERAGING OIL AND GAS SUBSEA EXPERTISE  
INTO OFFSHORE RENEWABLES



### OUR EXPERIENCE

Serving our clients  
since 2010



### OUR TECHNIQUES

State of the art analysis  
and engineering



### OUR ORGANISATION

Experts in the field of  
Subsea Engineering

# AGENDA

- ABOUT PERITUS
- WHY RENEWABLES?
- FIXED WIND
- FLOATING WIND
- MARINE ENERGY
- GENERAL MARKET DIFFERENCES
- BARRIERS TO ENTRY

# ABOUT PERITUS

## Why Peritus?

- Highly experienced people – recognised and respected in the industry
- Innovative technology
- Global knowledge networks
- Nimble flexible approach
- Formed in 2010
- Global Company
- 100% owned by Sapura Energy
- Full SURF design capability
- Extensive experience in:
  - advanced analysis
  - design for geohazards
  - challenging environments

# GLOBAL SPREAD OF PROJECTS



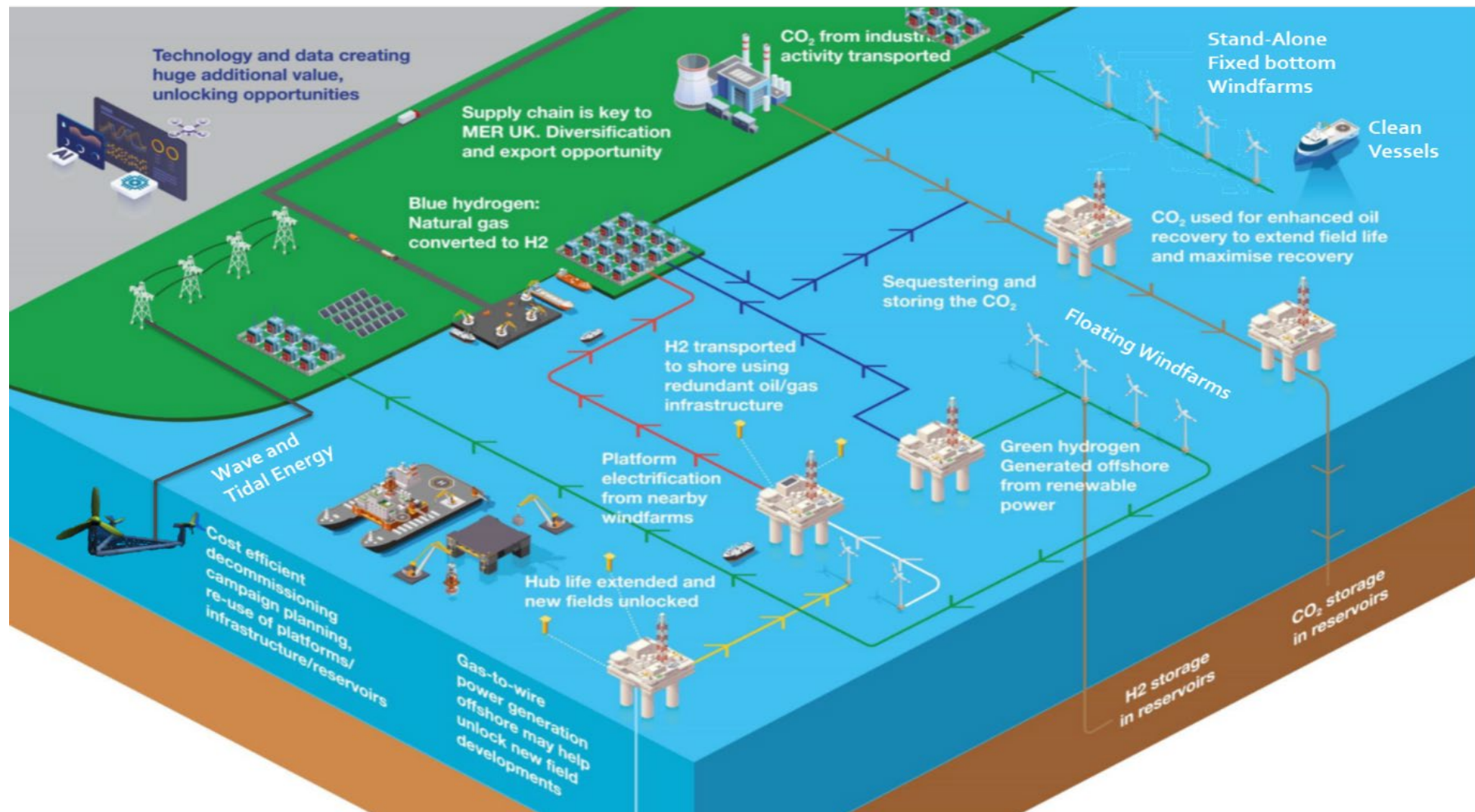
# WHAT ARE WE TALKING ABOUT?

- Fixed Bottom Wind
- Floating Offshore Wind
- Wave and Tidal Energy

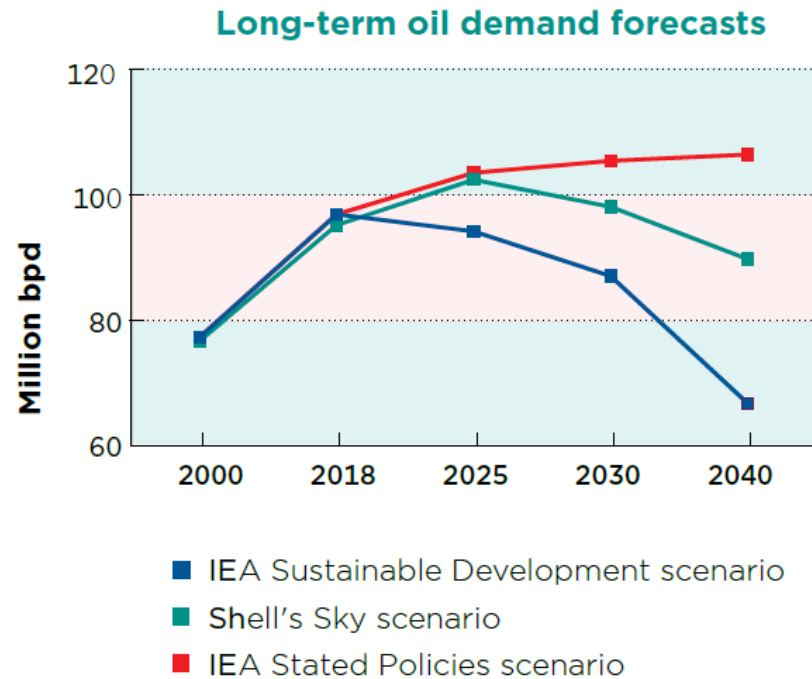
Not

- Solar
- Nuclear
- Hydrogen
- CCS

# WHAT MIGHT IT LOOK LIKE?

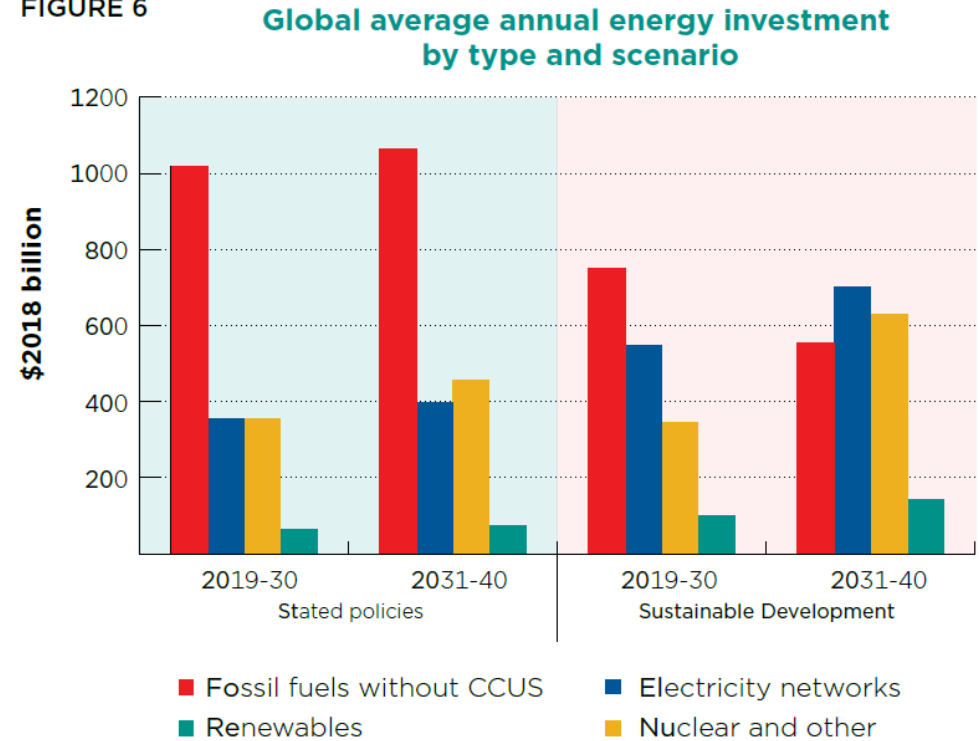


# WHY ARE WE TALKING ABOUT IT?



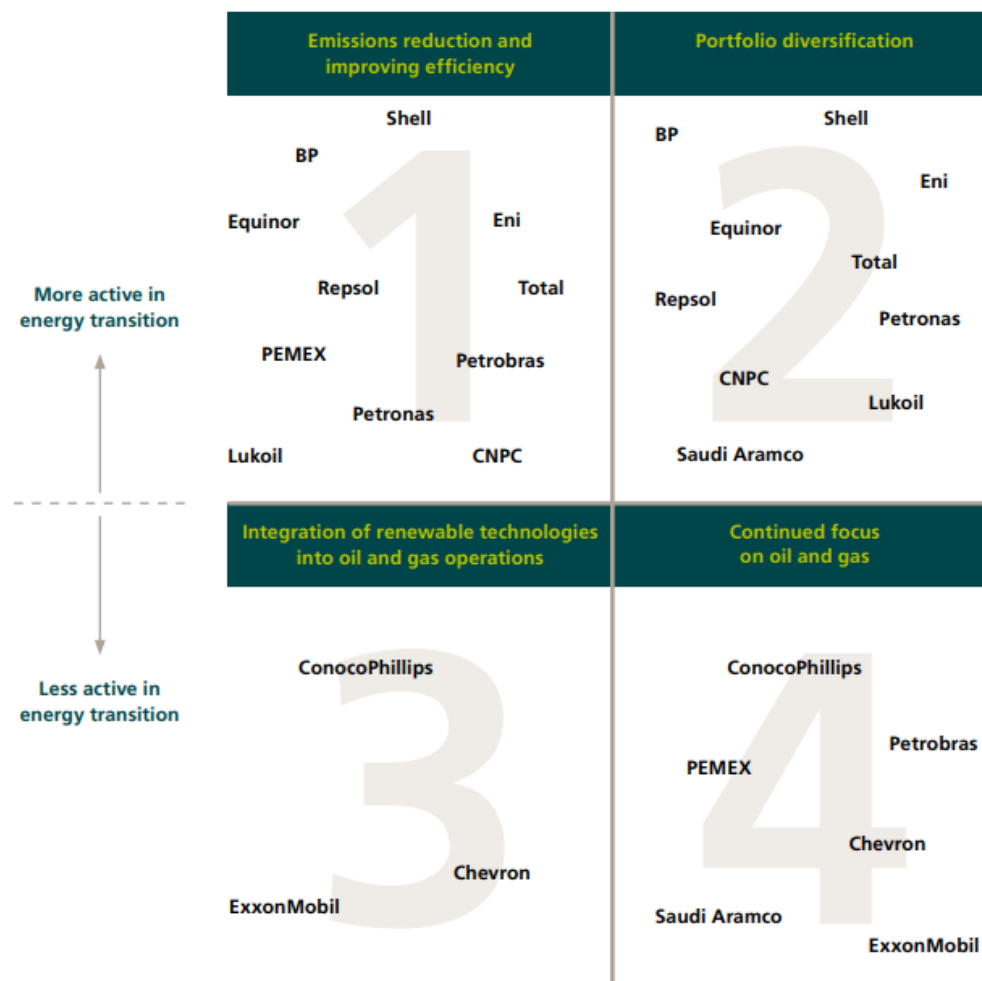
SOURCE: International Energy Agency and Shell

FIGURE 6



SOURCE: International Energy Agency

# WHY ARE WE TALKING ABOUT IT?

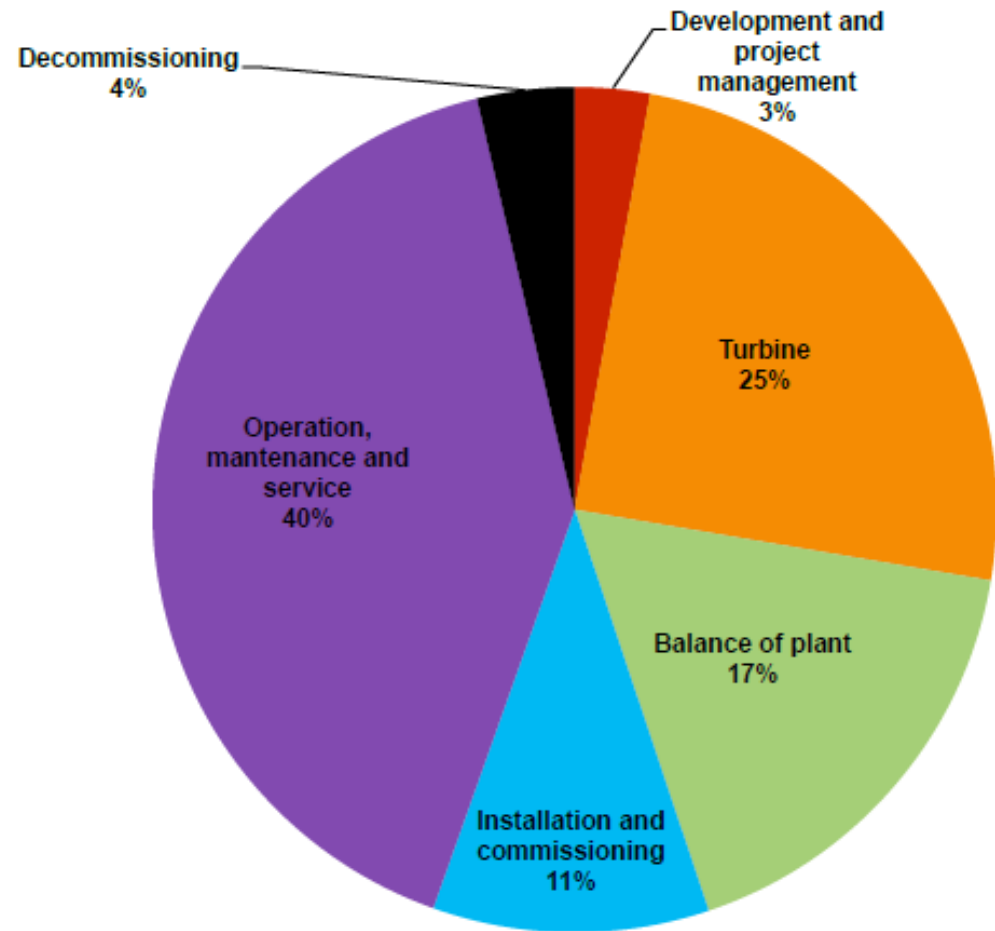


O&G Majors currently investing ~3% CAPEX into renewables



# FIXED WIND MARKET

Investment in wind power generation  
£2.5 Trillion between 2017 and 2040



Element	Sub-element	Oil and gas track record in offshore wind	Oil and gas sector synergies	Appetite from offshore wind	Potential for LCOE benefit from new involvement by oil and gas companies	Size and timing of investments by oil and gas companies	Size of the opportunity	Opportunity for oil and gas companies
Development and project management	Environmental surveys	2	2	1	1	4	1	
	Consenting and development services	1	4	1	1	4	1	
	Site investigations	4	3	2	1	4	1	
	Project management	3	4	2	2	4	1	
Turbine supply	Turbine assembly	1	1	1	1	1	1	
	Blades	1	1	1	1	1	1	
	Drive train	1	1	1	1	1	1	
	Power conversion	1	1	1	1	2	1	
	Large fabrications	1	2	1	1	2	3	
	Towers	1	2	2	1	2	3	
	Small components	1	2	1	1	2	3	
Balance of plant	Array cables	4	4	2	2	2	3	
	Export cables	2	2	2	2	1	2	
	Transmission	1	1	1	1	1	1	
	Substation structures	4	4	3	4	3	4	
	Turbine foundations	3	3	4	4	1	4	
	Secondary steelwork	3	3	2	2	4	2	
Installation and commissioning	Installation ports and logistics	1	4	1	1	3	1	
	Turbine and foundation installation	2	3	2	2	3	3	
	Cable installation	3	4	4	2	4	2	
	Substation installation	2	2	3	1	4	2	
	Installation equipment	4	4	4	4	4	2	
	Installation support services	4	4	4	4	4	2	
	Onshore works	1	1	1	1	4	1	
Operation, maintenance and service	Fuel and consumables	1	3	1	1	4	1	
	Maintenance and inspection services	2	4	3	3	4	4	
	Offshore logistics	1	3	3	3	4	1	
	Vessels and equipment	1	3	3	3	3	2	
	Operations port	1	3	2	1	4	1	
	Communication systems	2	4	3	1	4	1	
	Inventory management	1	3	4	3	3	1	
Decommissioning	Ports and logistics	1	4	2	1	4	1	
	Marine operations	1	4	3	1	4	1	
	Salvage and recycling	1	4	4	1	4	1	
	Project management	1	4	3	1	4	1	

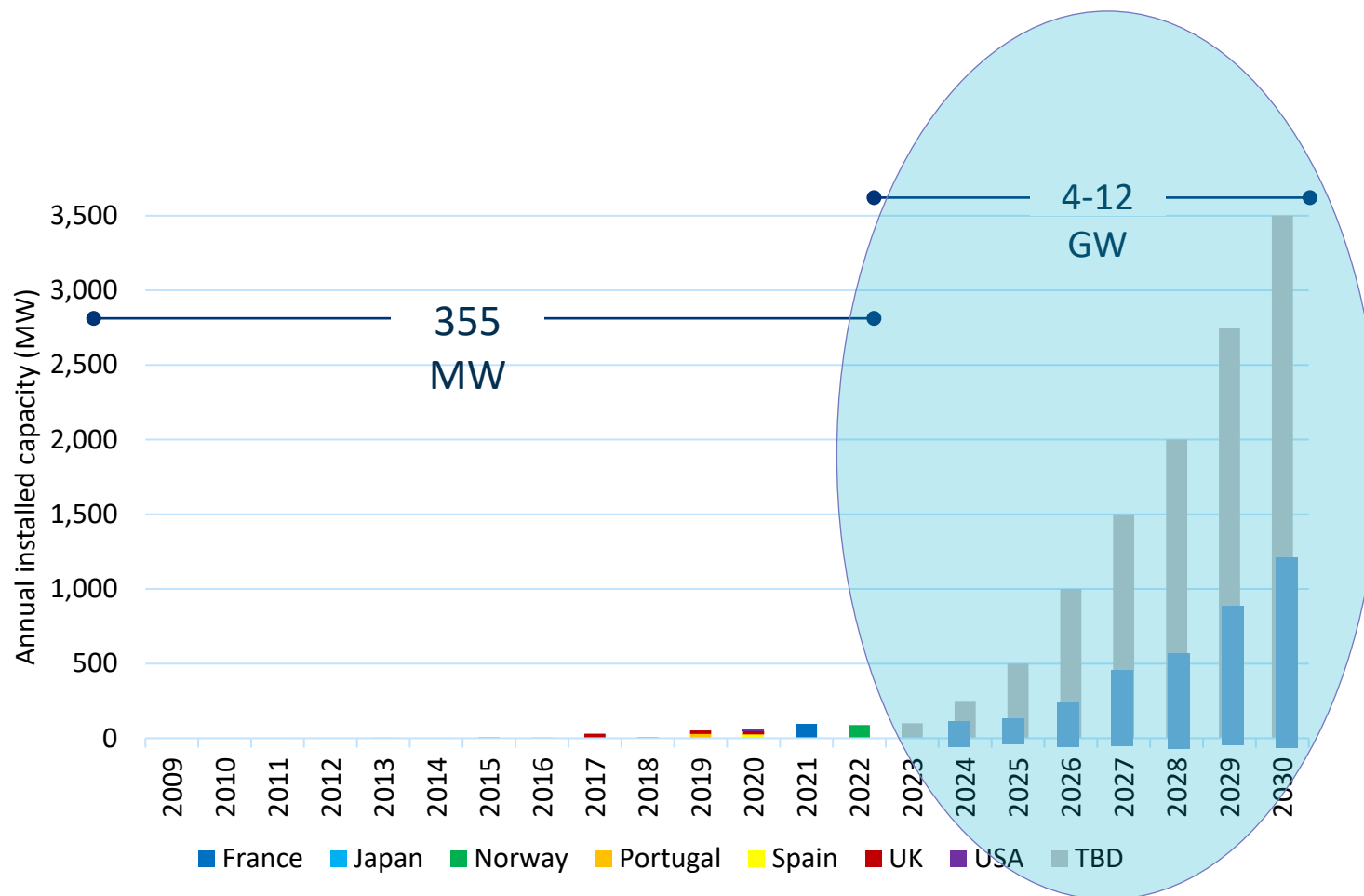
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# HIGH POTENTIAL AREAS FOR SUBSEA COMPANIES

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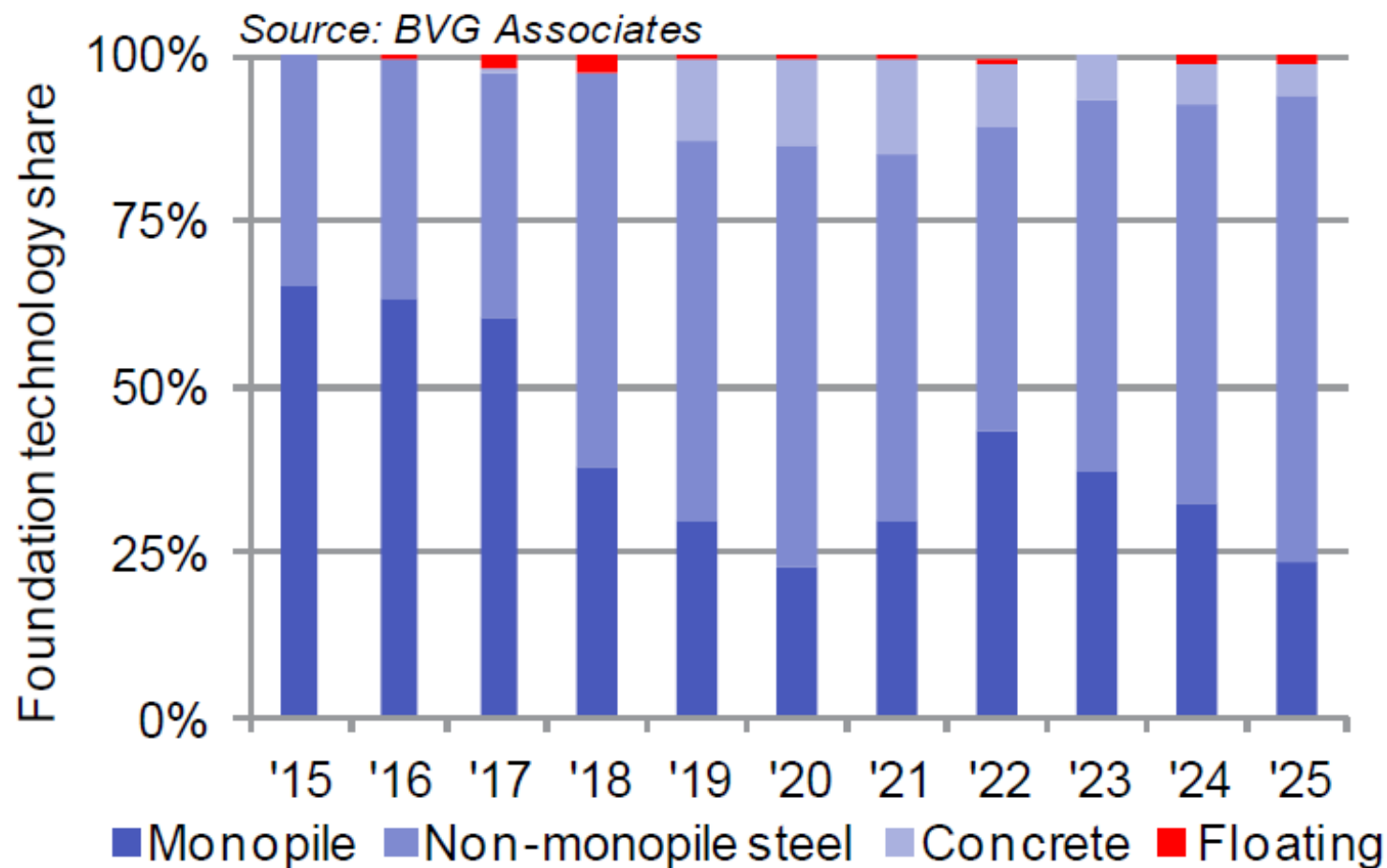
- Project management
- Array cables
- Substation structures
- Turbine foundations
- Secondary steelwork
- Cable installation
- Installation equipment
- Installation support services, and
- Maintenance and inspection services.

# FLOATING MARKET



Source: Carbon Trust and ORE Catapult, 2018

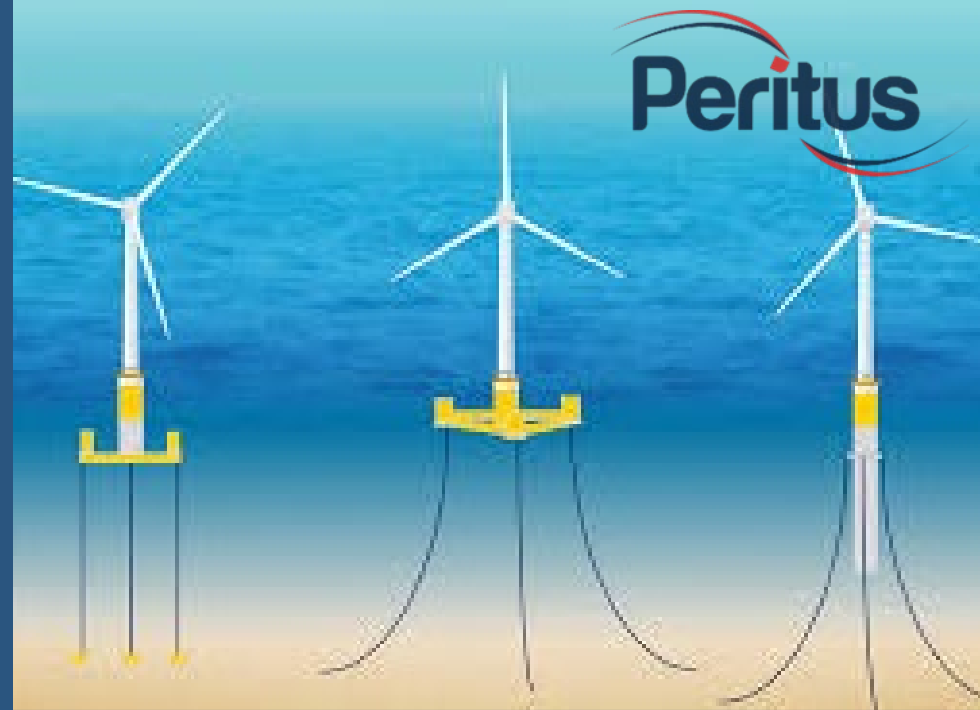
# EMERGING MARKET – DIFFERING FORECASTS





# HIGH POTENTIAL AREAS

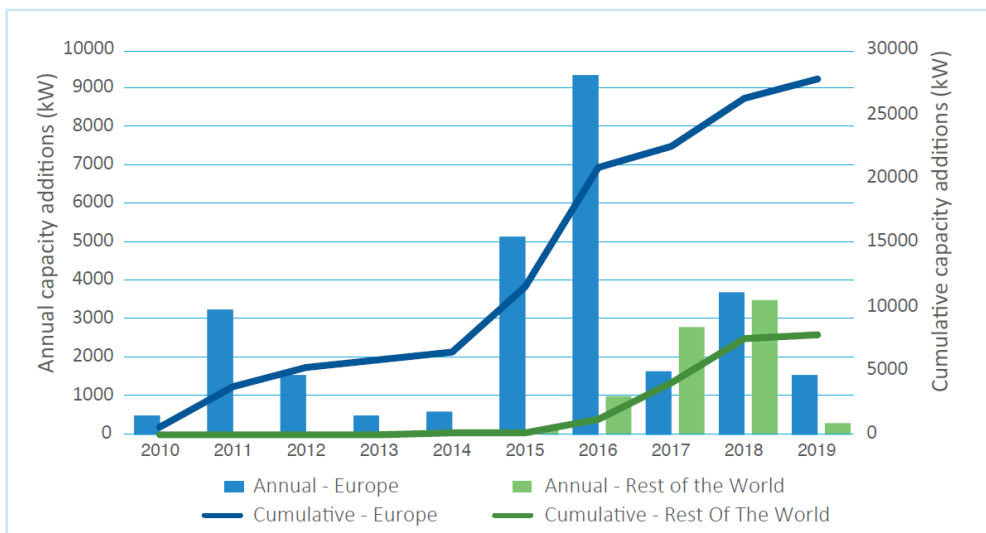
- Mooring Design
- Dynamic Cable Design
- Policy and Consenting
- Supply Chain Capability / Capacity
- Port Capability
- Offshore Grid Connection – Concepts
- O&M Strategy
- Cost Modelling / Market Analysis /Commercial



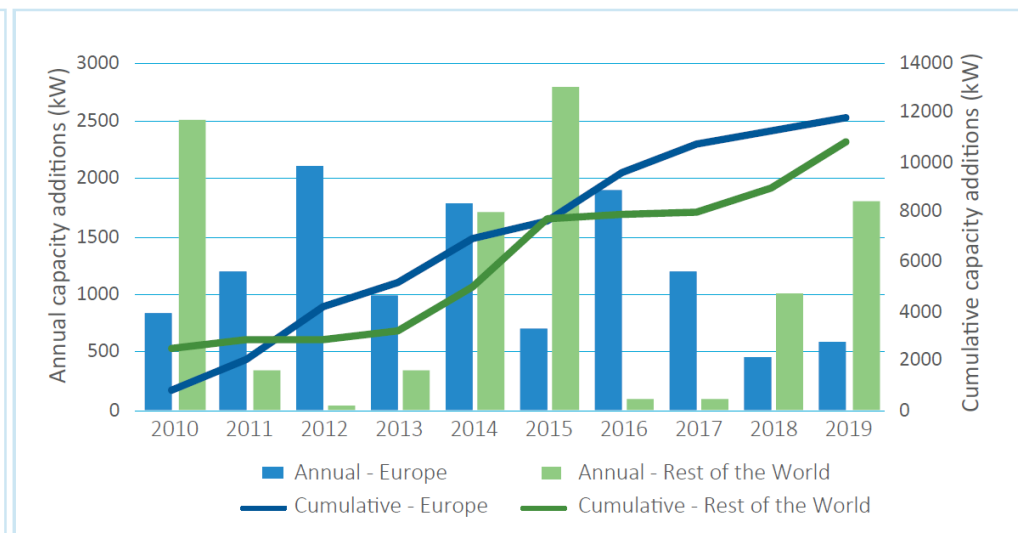
Peritus



# MARINE ENERGY – A different scale



TIDAL



WAVE



# MARINE AUSTRALIA



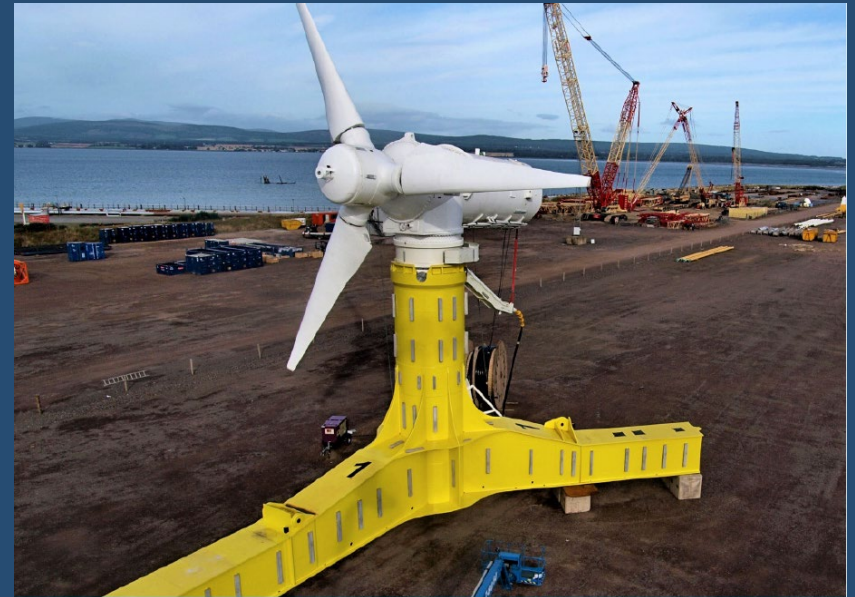
VERY HIGH WAVE POWER –  
Enough for ~11% of Aus  
Electrical Demand



GOOD TIDAL POTENTIAL

# HIGH POTENTIAL AREAS

- Policy and Consenting
- Supply Chain Capability / Capacity
- Port Capability
- Foundation Design
- Cable Protection
- Landfall Design
- O&M Strategy
- Cost Modelling / Market Analysis / Commercial



# MARKET DIFFERENCES

AREA	O&G	RENEWABLES
VOLUME	One off/Bespoke	High Numbers – repeatable. Serial production Small savings add up
SPEND	Front weighted	Back weighted – Small until FID
CULTURE	Incremental innovation	High level - to drive down cost
RISK	Tends to rest with developer	Pushed down onto supply chain as much as possible
FINANCE	Off Balance Sheet	3 <sup>rd</sup> Party Finance

# BARRIERS TO ENTRY



TRACK  
RECORD



COST



RISK-AVERSE  
INVESTORS



CONTRACT  
STRUCTURE



SUSPICION

# CONCLUSIONS



O&G isn't going away anytime soon



Majors are increasing investment and diversification into renewables



Subsea engineering companies have the skills to add value to renewables projects



But... the markets are different



Dedicated renewables offering is required

LET'S WORK  
TOGETHER



ENGINEERING SUBSEA SOLUTIONS

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