

DeepWind Floating Offshore Wind Subgroup

Webinar

Sept 29th



Agenda

- Introduction to Subgroup Co-chairs and their companies
- Andronikos Kafas – Ocean Winds
- Julia Roope – Fugro
- Subgroup Landscape and Terms of Reference
- Membership Polls



Intro to Ocean Winds

OW's Floating Offshore Wind industry update

Dr. Andronikos Kafas – New Offshore Opportunities Manager

DeepWind FOW Subgroup launch webinar
September 29th, 2020



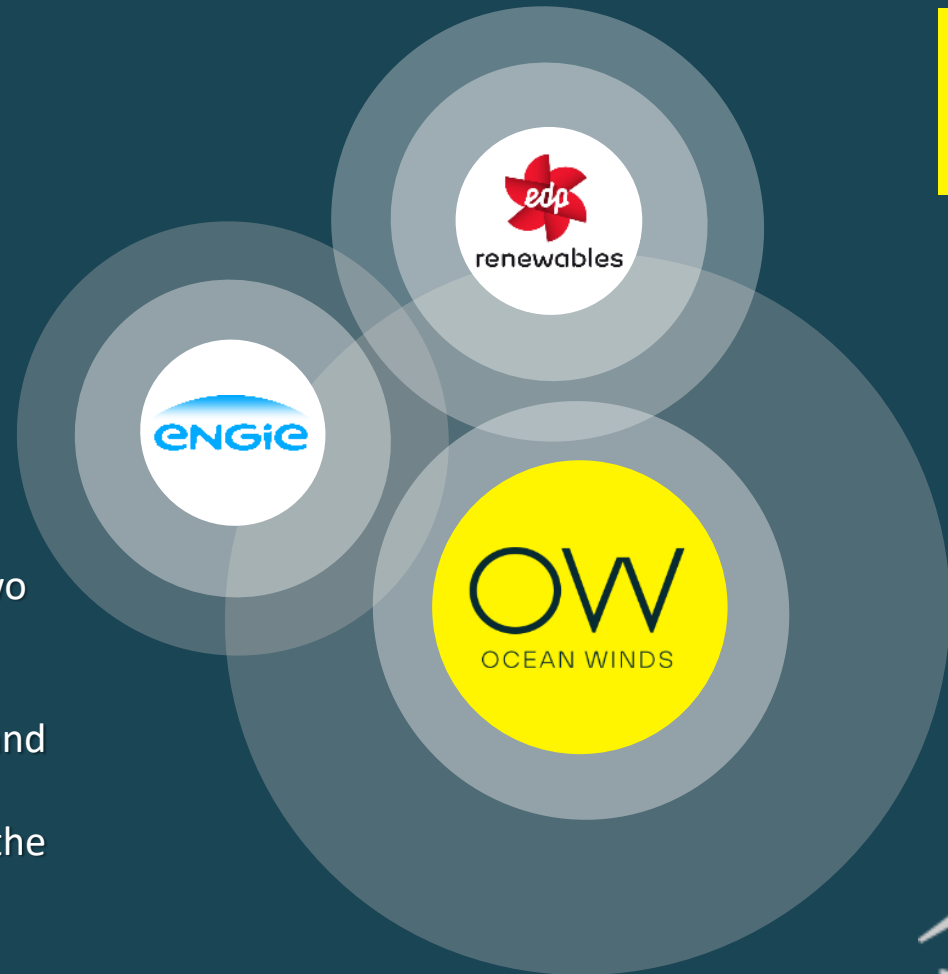
GROW
WITH
THE WIND

WHO WE ARE

Ocean Winds (OW) is the result of a Joint Venture between two of the biggest players in Energy:

- **Engie**, French multi-national energy and services company and global leader of zero-carbon transition and
- **EDPR**, global leader in the renewable energy sector and the world's fourth-largest wind energy producer

Born to lead the **Offshore Wind Energy Business.**



*“ In an industry where size matters,
relevance is critical.
Only elephants play this game. Together
we are one.”*

Main highlights of OW



Scope

- Sole investment **vehicle for offshore wind** for both companies.

Ownership

- 50% ENGIE – 50% EDPR

Projects

- Parties to contribute stakes in existing projects (“**Initial Assets**”) as well as early stage opportunities (“**Pipeline**”) – details on following slides

Growth targets

- 2025 targets: **5-7GW** under construction/operation + **5-10GW** under advanced development

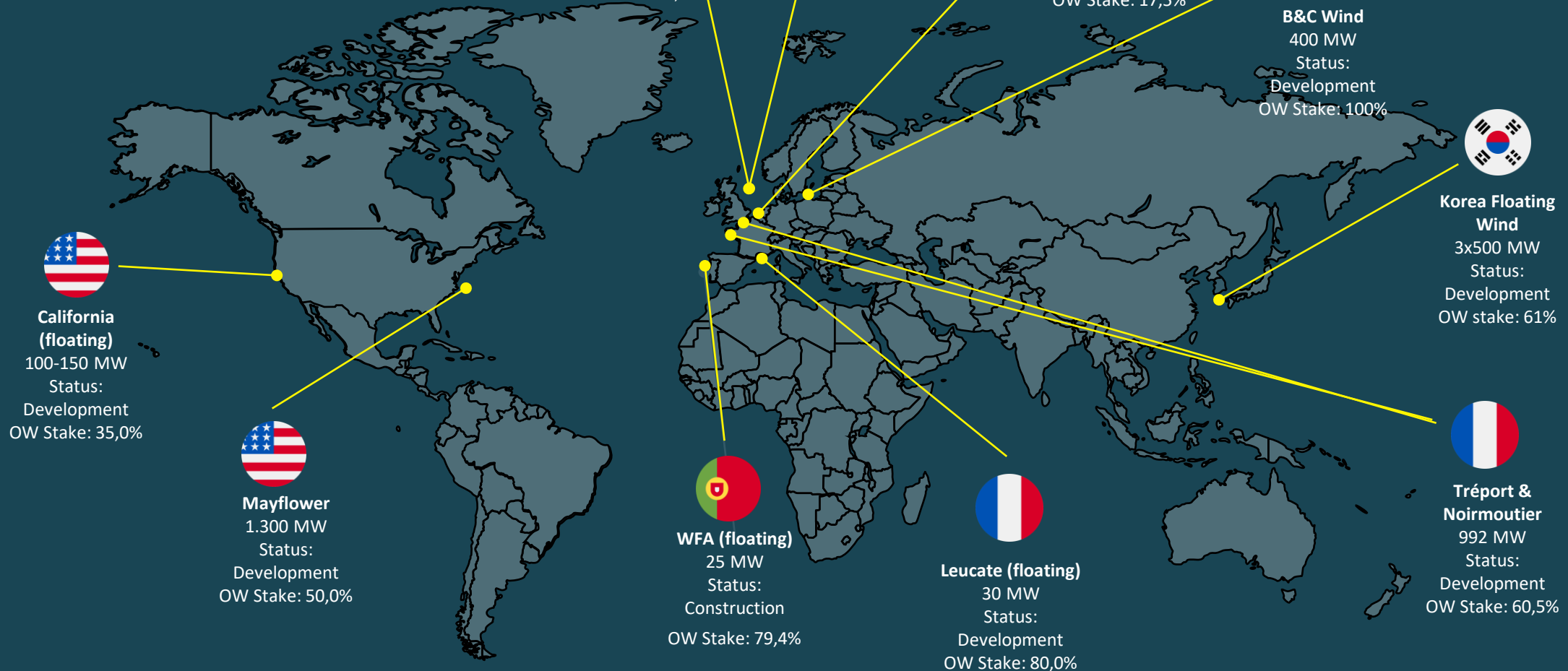
Governance

- **Joint control**. BoD with 6 members (3 appointed by each partner)

Organization

- Fully **integrated team** under mixed-team approach. CEO and COO for the 1st 3Y term appointed by EDPR and ENGIE, respect lively. For the subsequent 3Y term, ENGIE will propose the CEO and EDPR will appoint the new COO. JV headquarters in Madrid.

OW will have as of inception presence in 7 countries, in which it will continue to develop current projects as well as create new growth opportunities



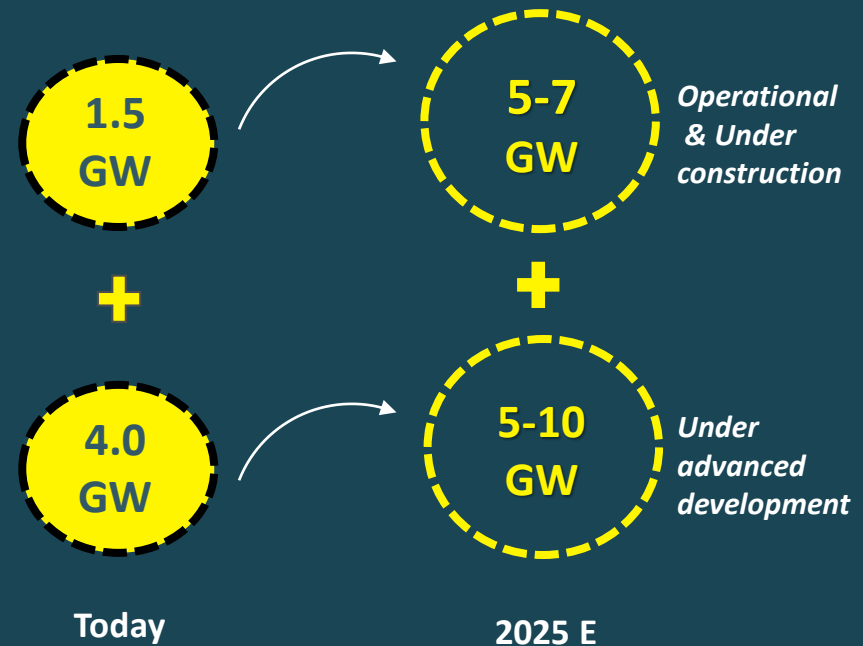
An investment framework announced to market May 2019 with ambitious growth targets...

OW selective investment criteria

- Sound market fundamentals
- Stable regulatory frameworks
- Contracted NPV (i.e. cash-flows visibility)
- Compliance with target risk return profile
- Maximize projects self-funding

OW Growth Targets announced

Gross MW



...paving the way for a greener future, by strengthening offshore growth, increasing efficiency and returns

Active in floating offshore wind since 2008, with close links to Principle Power (PPI).

PPI
Major shareholder, together with partners



★ **WF1, WFA, Portugal**
★ **EFGL, France**

★ **KFWind, Ulsan, South Korea**

Redwood Coast, Humboldt, California, USA

WF 1 (2 MW)
Portugal

- ▶ Successful 2MW demonstrator
- ▶ First semi-submersible structure supporting a multi-MW
- ▶ Design is now being utilised in the Kincardine Project off the coast of Aberdeenshire

WFA (25 MW)
Portugal

- ▶ World's FIRST semi-submersible wind farm
- ▶ 3 x 8.4MW turbines fully commissioned
- ▶ Revitalised local ports in northern Portugal

EFGL (30 MW)
France

- ▶ Under development with 3.5GW awarded
- ▶ To feature the world's most powerful turbines
- ▶ 3 x 10MW turbines

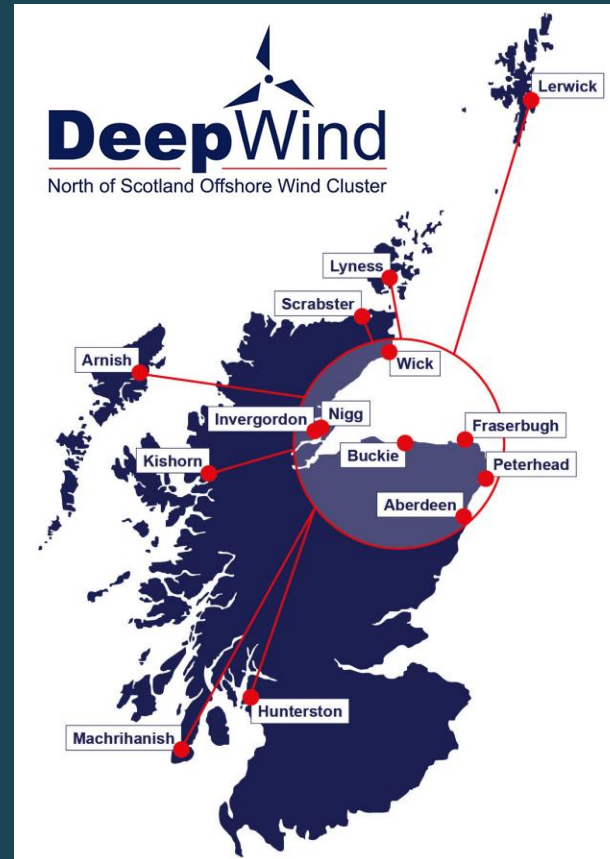
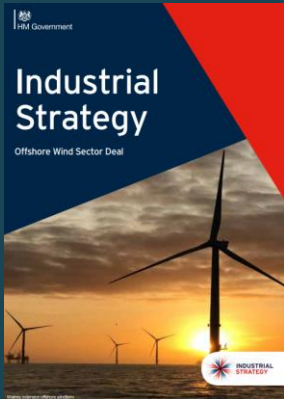
Redwood Coast (ca. 150MW)
California, USA

- ▶ 10 – 15 Turbines
- ▶ Gross capacity of approx. 150MW- Grid agreement with local authority in place

KFWind (ca. 1,500 MW)
Ulsan, South Korea

- ▶ 1,500 MW gross capacity
- ▶ MoU signed with Ulsan City, South Korea

Strong UK supply chain experience, enhanced through sector clusters



- ✓ **DeepWind** is the UK's leading floating offshore wind and largest supply chain cluster, with over 460 members. No membership fees.
- ✓ OW is the **cluster champion** and co-leads the newly-established **FOW supply chain sub-group**.
- ✓ Committed to DeepWind's success and support programmes to bring developers and their Tier-1s **closer to regional supply chain**.

Driving forward the development of floating offshore wind in the UK, through the national Floating Offshore Wind Centre of Excellence



- ✓ The aims of the CoE are to:
 - reduce the cost of energy from floating wind,
 - accelerate the build-out of floating farms,
 - create opportunities for the UK supply chain, as well as
 - Drive innovations in manufacturing, installation and operations and maintenance.
- ✓ OW have been involved with the establishing of the CoE since it's inception. We sit on the **Board** and the **Technical Committee** to shape CoE projects.
- ✓ We work with ORE-C, industry partners, government, academic institutions, as well as technology and supply chain providers to drive excellence in **technology development, supply chain and operations, development and consent**, and **delivering net zero**.



Conclusions: OW : EDPR & ENGIE

Creating a Global Offshore Leader

- ✓ OW benefits from a **unique starting point** and is well positioned to play a **leading role** in the offshore market
- ✓ EDPR and ENGIE share a **common vision** that renewables, in particular offshore wind, will play a **key role** in the global energy transition
- ✓ Combining the right set of **skills** in renewables, a successful **track** record and a 50/50 control structure with the right **governance**, already operational

THANK YOU

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[https://www.offshorewindscotland.org.uk/
deepwind-cluster/deepwind-subgroups/](https://www.offshorewindscotland.org.uk/deepwind-cluster/deepwind-subgroups/)



www.oceanwinds.com

The banner features a blue background with a photograph of a large offshore supply vessel at sea, positioned next to a floating offshore wind turbine. The text 'FLOATING OFFSHORE WIND' is prominently displayed in white, bold, sans-serif font. Below the title, the dates '7-8 October 2020 | Virtual' are shown. The banner includes logos for 'renewableUK', 'scottish renewables', and 'AKER OFFSHORE WIND'. At the bottom, a row of logos for event partners is displayed, including Equinor, ESB Energy for Generation, MW, OW, CATAPULT, Shell, and the hashtag #FOW20. A small vertical credit 'Image credit: Ørsted Energy' is visible on the right side of the banner.

renewableUK scottish renewables

FLOATING OFFSHORE WIND

7-8 October 2020 | Virtual

AKER OFFSHORE WIND equinor ESB Energy for Generation MW OW CATAPULT Shell #FOW20

Image credit: Ørsted Energy

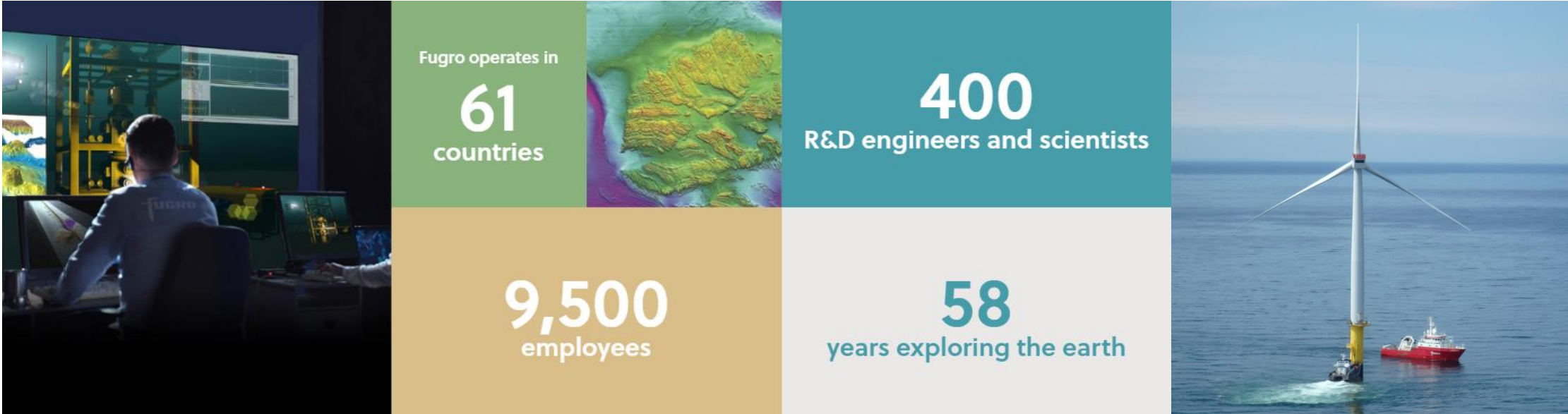


FUGRO



Introduction to Fugro

DeepWind subgroup meeting 29 September 2020

Fugro at a glance



The infographic is a grid of six colored panels. The top-left panel shows a person in a control room with multiple monitors. The top-middle panel is green and contains the text 'Fugro operates in 61 countries' next to a topographic map. The top-right panel is teal and contains the text '400 R&D engineers and scientists'. The bottom-left panel is orange and contains the text '9,500 employees'. The bottom-middle panel is light grey and contains the text '58 years exploring the earth'. The bottom-right panel is a photograph of an offshore wind turbine with a red support vessel nearby.

	<p>Fugro operates in</p> <p>61</p> <p>countries</p> 	<p>400</p> <p>R&D engineers and scientists</p>	
	<p>9,500</p> <p>employees</p>	<p>58</p> <p>years exploring the earth</p>	

Geo-data is essential to design, build and operate any asset on this planet



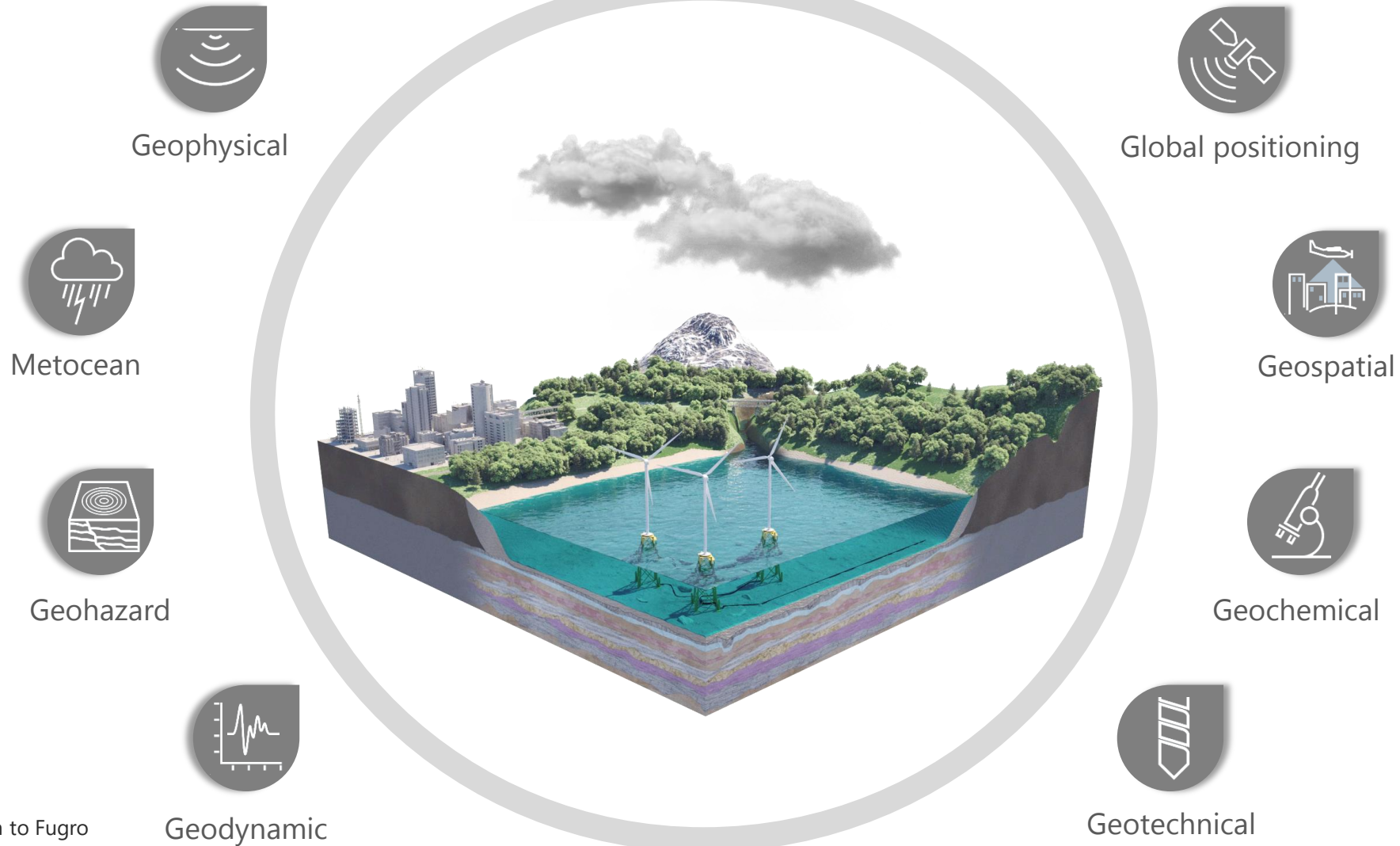
Value throughout the Project Life Cycle



People, equipment, expertise and technology that support the development, operation and maintenance of offshore wind farms



We are the world's leading Geo-data specialist



We unlock insights from Geo-data

Using our 'triple A' approach we provide our clients insights about the characterization of a site as well as the integrity of their assets



We believe that we can build a sustainable future



Together we create a safe and liveable world

The future can't be about more, it must also be about better

FUGRO

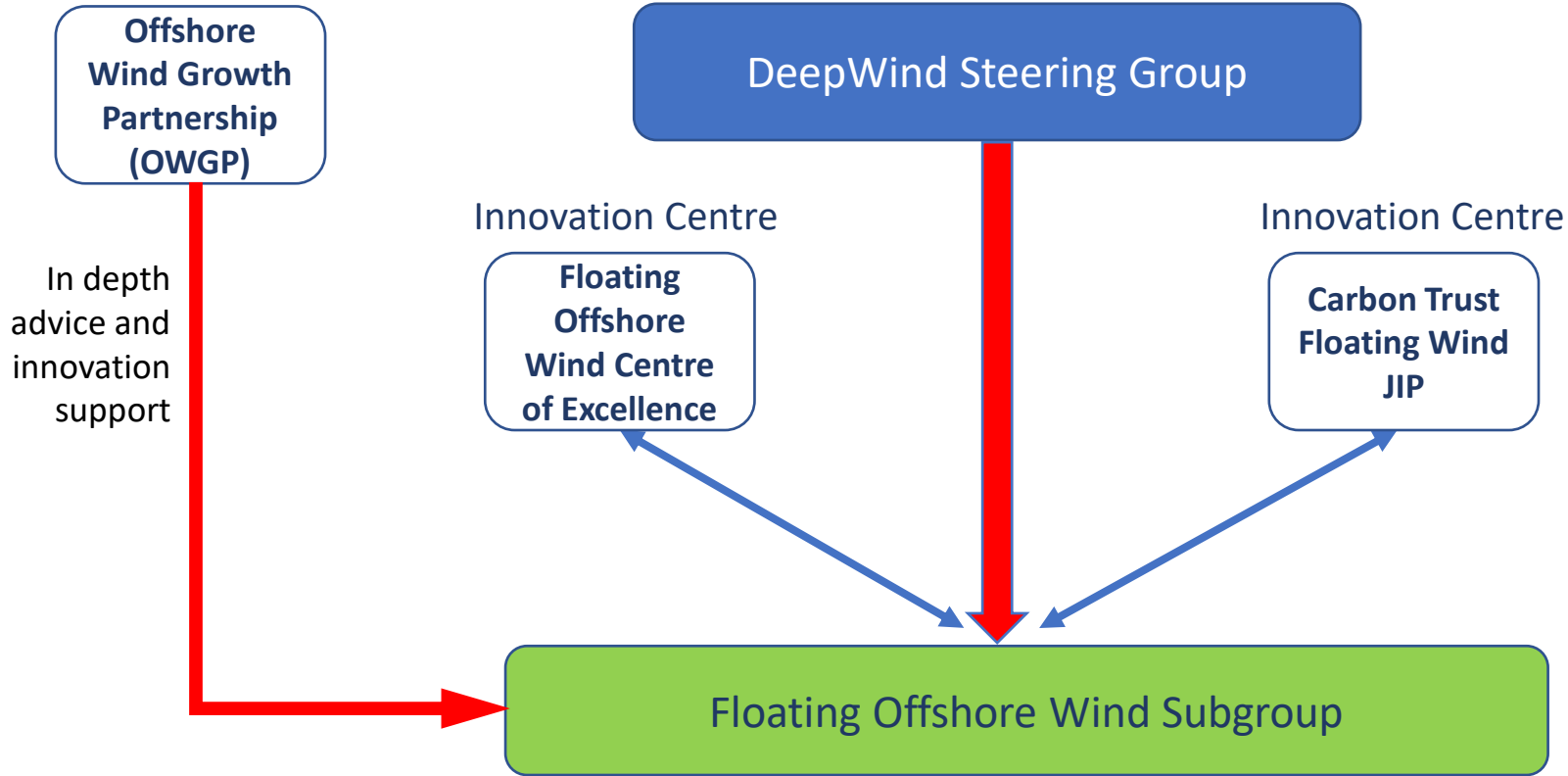
Unlocking Insights
from Geo-data

Floating Wind Subgroup

Landscape and Terms of Reference

Sept 29th





Floating Offshore Wind Landscape

Purpose of the FOW Subgroup

The FOW Subgroup aims to satisfy this membership need by assisting the floating offshore wind industry in Scotland to help maximise economic benefit from domestic and international markets and to aid members reach their full growth potential through greater competitiveness and productivity. The FOW Subgroup will achieve this by aligning with the DeepWind cluster's wider aims of linking supply chain companies, educational institutions and centres for innovation to drive competitiveness, economies of scale and productivity.

Purpose of the FOW Subgroup

Engaging at a regional, Scottish and UK levels, the FOW Subgroup will undertake activities aimed at:

- Promoting FOW offshore wind opportunities to the regional supply chain;
- Providing opportunities for the development of new and innovative technologies for the FOW sector via the innovation workstreams of bodies such as the ORE Catapult's FOW Centre of Excellence, the Carbon Trust's FOW JIP and the soon to be launched Subsea UK Global Underwater Hub, all of which already involve many DeepWind members.
- Support the skills and coordination workstream within SOWEC to ensure the necessary skills to support growth in the FOW sector.

Objectives of the FOW Subgroup

The objectives of the Subgroup are to provide strategic support and guidance to their FOW members and help deliver the stated aims of the UK's Sector Deal. These objectives include providing mutual support to members in relation to business development activity, providing advice and guidance to the wider floating offshore wind supply chain in the region.

The Subgroup shall:

1. Establish a vision and strategic objectives for the floating offshore wind supply chain (and subsequently review and amend as necessary) with reference to DeepWind's wider role in the supply chain and incorporating any floating wind specific direction coming out of the Offshore Wind Industry Council (OWIC) and Scottish Offshore Wind Energy Council (SOWEC).
2. Through the co-chairs agree on mechanisms to maximise opportunity for the FOW Subgroup members and Scotland.
3. Identify and implement goals, along with an appropriate delivery timetable, for the subgroup.
4. Take the lead within the DeepWind cluster to help develop the strategic and tactical requirements of the FOW supply chain in the UK and oversee providing access to this market.
5. Lead persons, the Co-Chairs, on the subgroup to act without prejudice for their stakeholder/colleagues and community.
6. Utilise the experience and skillsets of the member companies to create links between industry and academia to align future FOW skills requirements.
7. To act as ambassadors for Scotland for FOW.

Live input session using Mentimeter

(see separate PDF file)