

Floating Wind – The Opportunities

Focus North Conference, 08 February 2023



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Introduction to CIP & COP

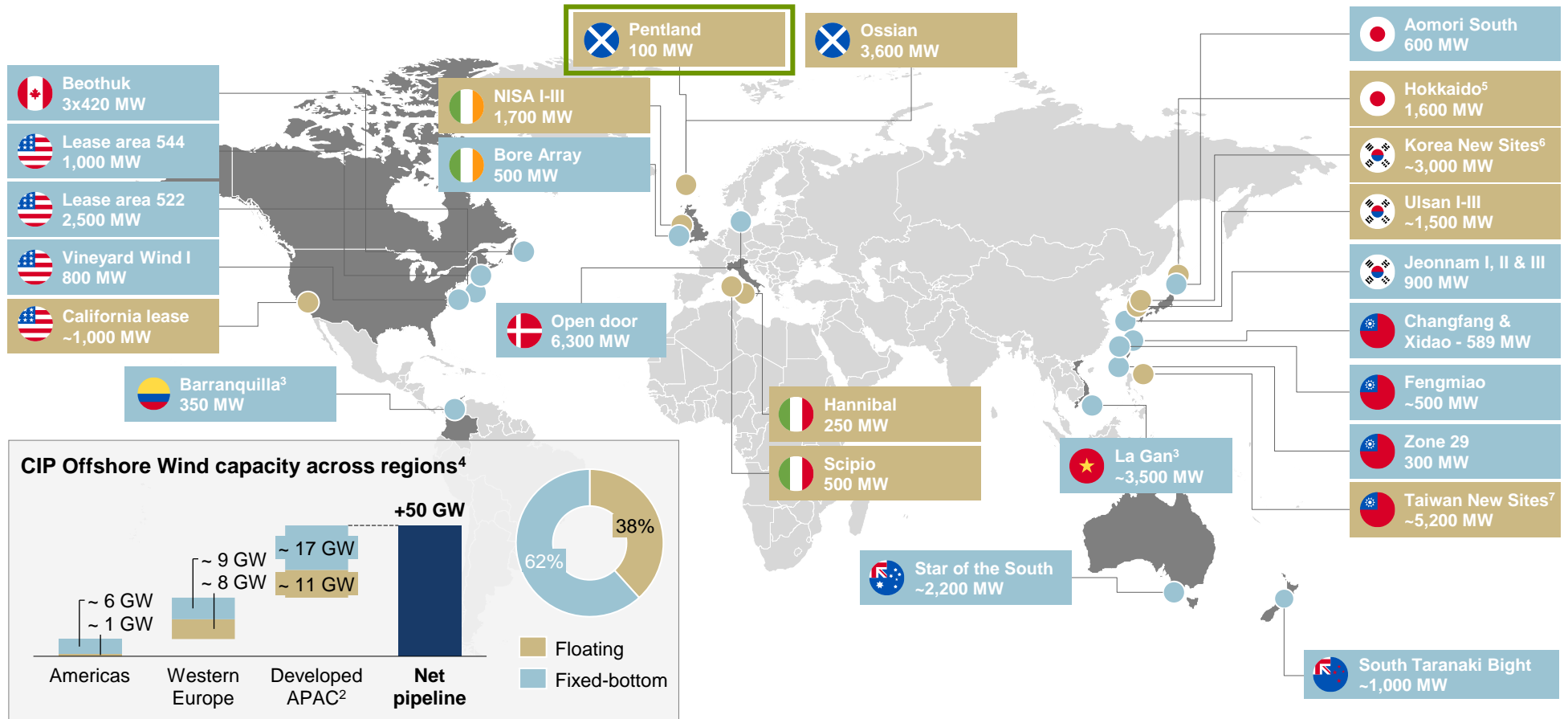
Over 50 GW of offshore wind under development and construction



World map of selected CIP offshore wind activities¹

● Fixed-bottom in development/construction ● Floating in development²

- Founded in 2012, CIP is the world's largest dedicated fund manager within greenfield renewable energy investment and a global leader in offshore wind
- Established 10 funds raising EUR 19bn from 140 investors with 400 employees across 11 offices
- COP is CIP's exclusive offshore wind development partner with over 300 expert offshore wind professionals across 13 offices worldwide



Notes: 1) Some projects and project capacities are not disclosed for confidentiality reasons. Therefore, totals will not add up; 2) Includes mixed fixed bottom and floating projects; 3) Part of CI New Markets Fund I portfolio; 4) Excl. Greenfish; 5) Hokkaido includes both Fixed-bottom (1000MW) and Floating (600MW); 6) KNS includes both Fixed-bottom (1,500MW) and Floating (1,500MW); 7) TNS includes both Fixed-bottom (1,900MW) and Floating (3,300MW)

CIP in the UK

Overview of historical and current CIP investments in the United Kingdom

Geographical overview of CIP investments in the UK



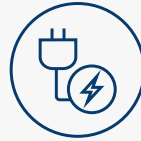
CIP has an extensive global pipeline of renewable projects with the UK being an important market



CIP has invested over 1.7 billion GBP in the UK, with a successful track record of projects



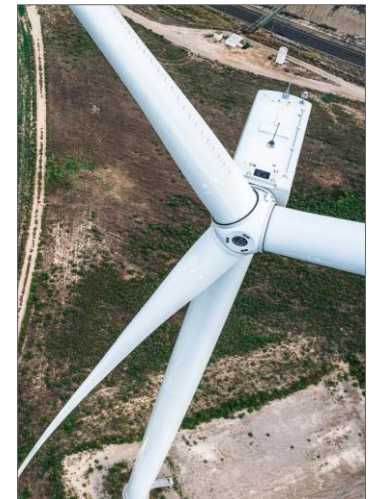
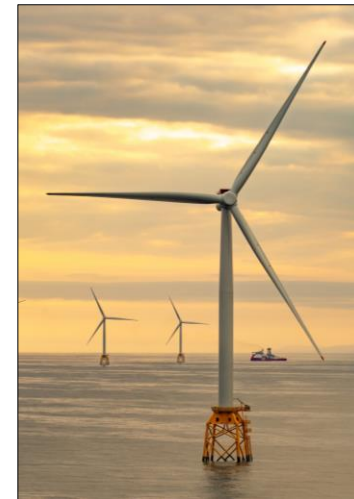
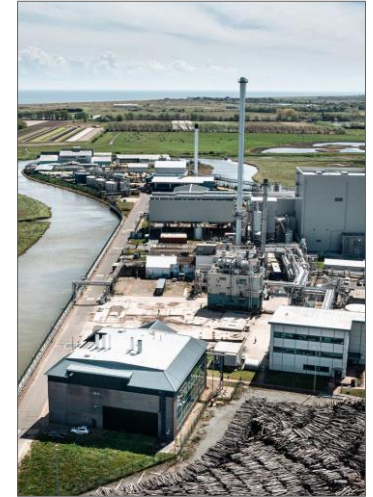
~10 GW in operations, construction and development stage currently in the UK



~1 GW divested after successful completion of projects



Pipeline capacity enough to power more than 5m British homes



COP in the UK

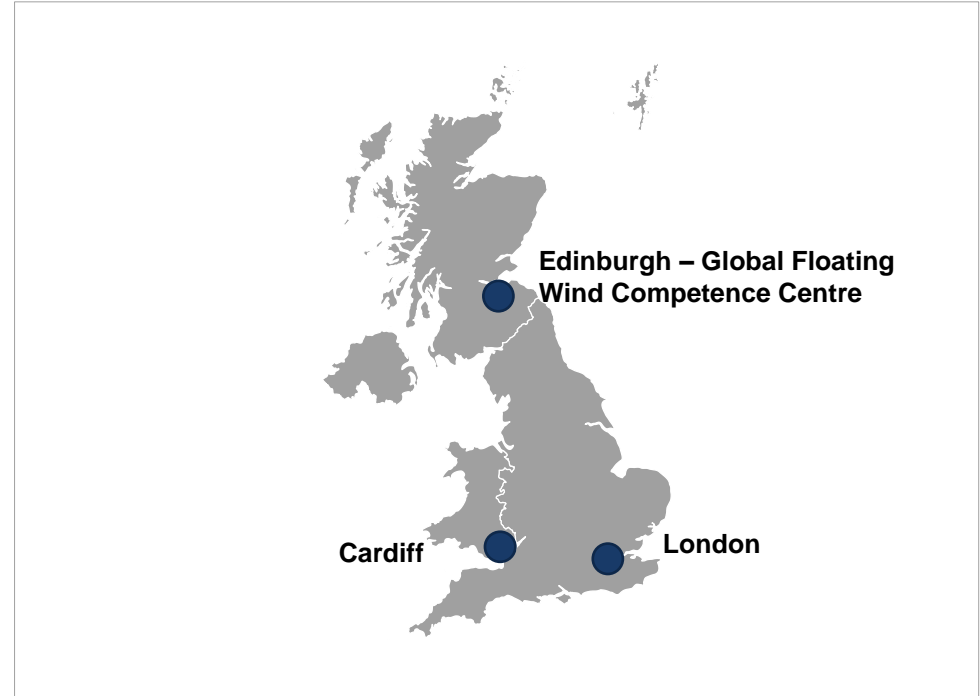
Established Global Floating Wind Competence Centre in Edinburgh in 2020



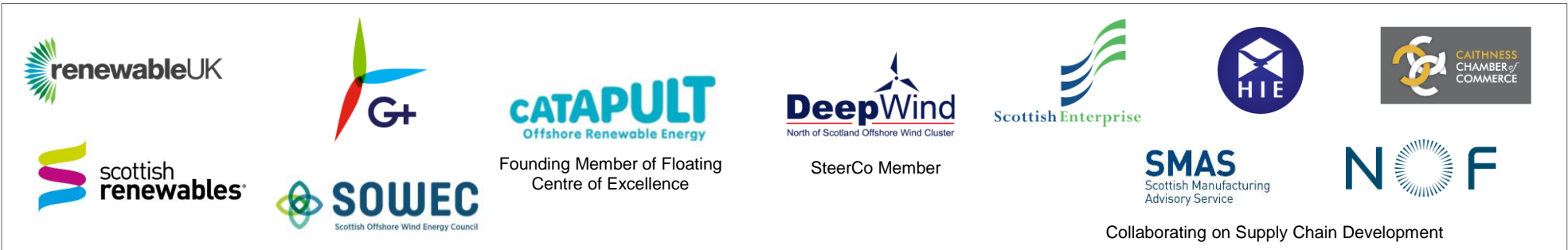
Growing UK Team – over 35 employees working on floating globally



UK Offices



Active Member of the UK Offshore Wind Community



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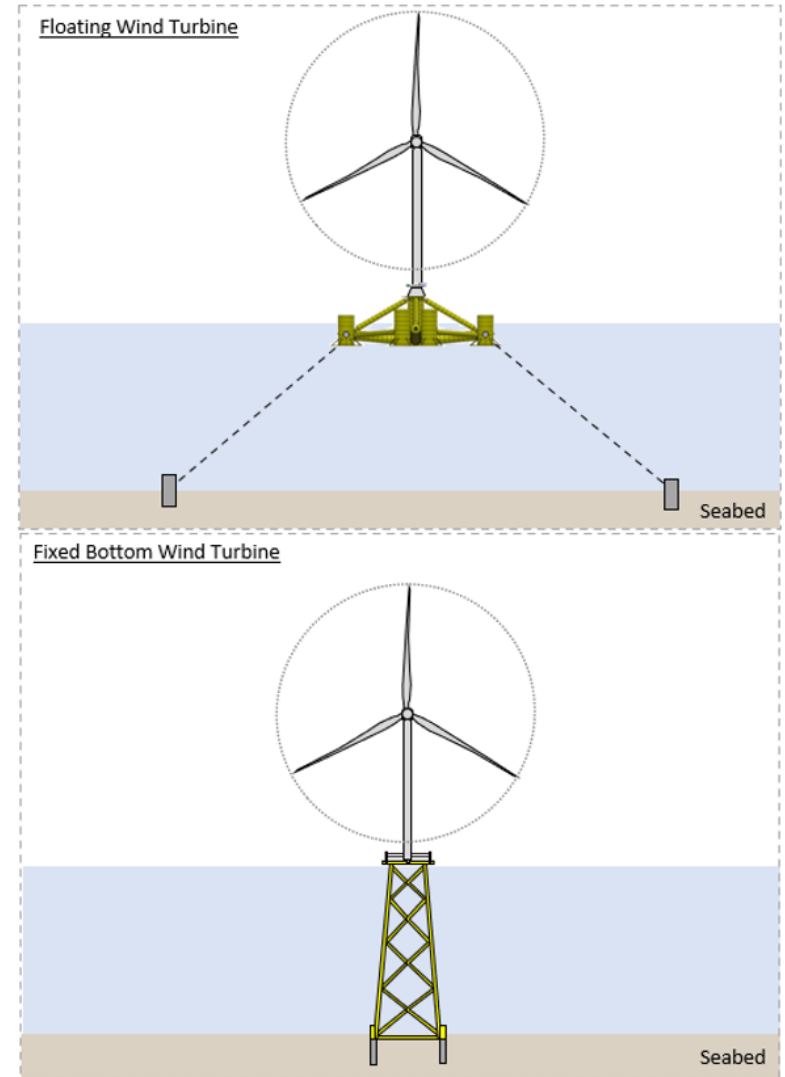
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Why Floating Wind?

Floating wind allows the deployment of wind turbines in deeper water

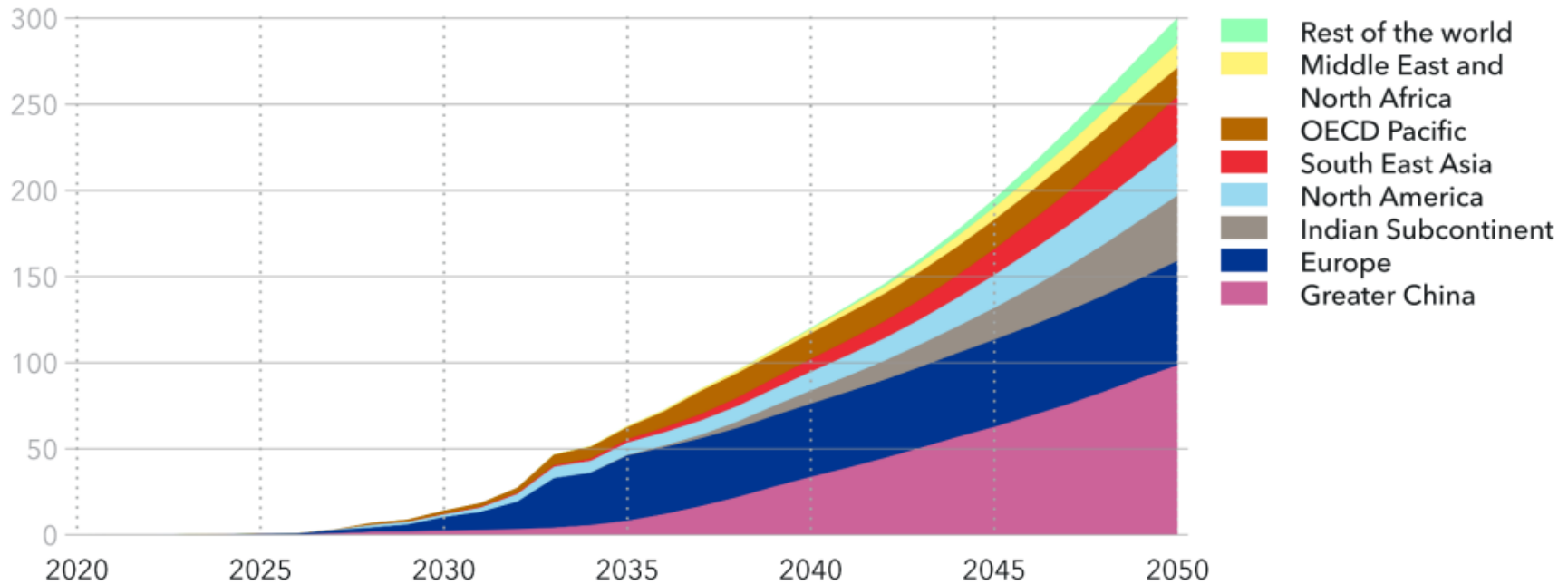
- Fixed bottom offshore wind turbines use **foundations which are connected directly to the seabed** via steel or concrete structures much like conventional oil and gas platforms
- It is expected that the **economic limit of fixed bottom turbines is in the region of 60-80m water depth**, whereas in European seas, 80% of all the offshore wind resource is located in waters 60m and deeper
- **Floating offshore wind allows development in these deeper waters**, as the turbines are placed on floating foundations which provide buoyancy and stability and are tethered to the seabed by mooring lines and anchors
- **Floating offshore wind will pay a key part in achieving net zero** by 2050 (UK government) and by 2045 (Scottish Government), as development opportunities in shallower waters become more limited
- By 2040, the development of deeper water sites could generate enough capacity to **meet the world's total electricity demand 11 times over** (source: *International Energy Agency*)
- The potential is huge with **over 120 GW of floating wind projects under development globally**



Floating wind will be big and global

Installed floating offshore wind capacity by region

Units: GW



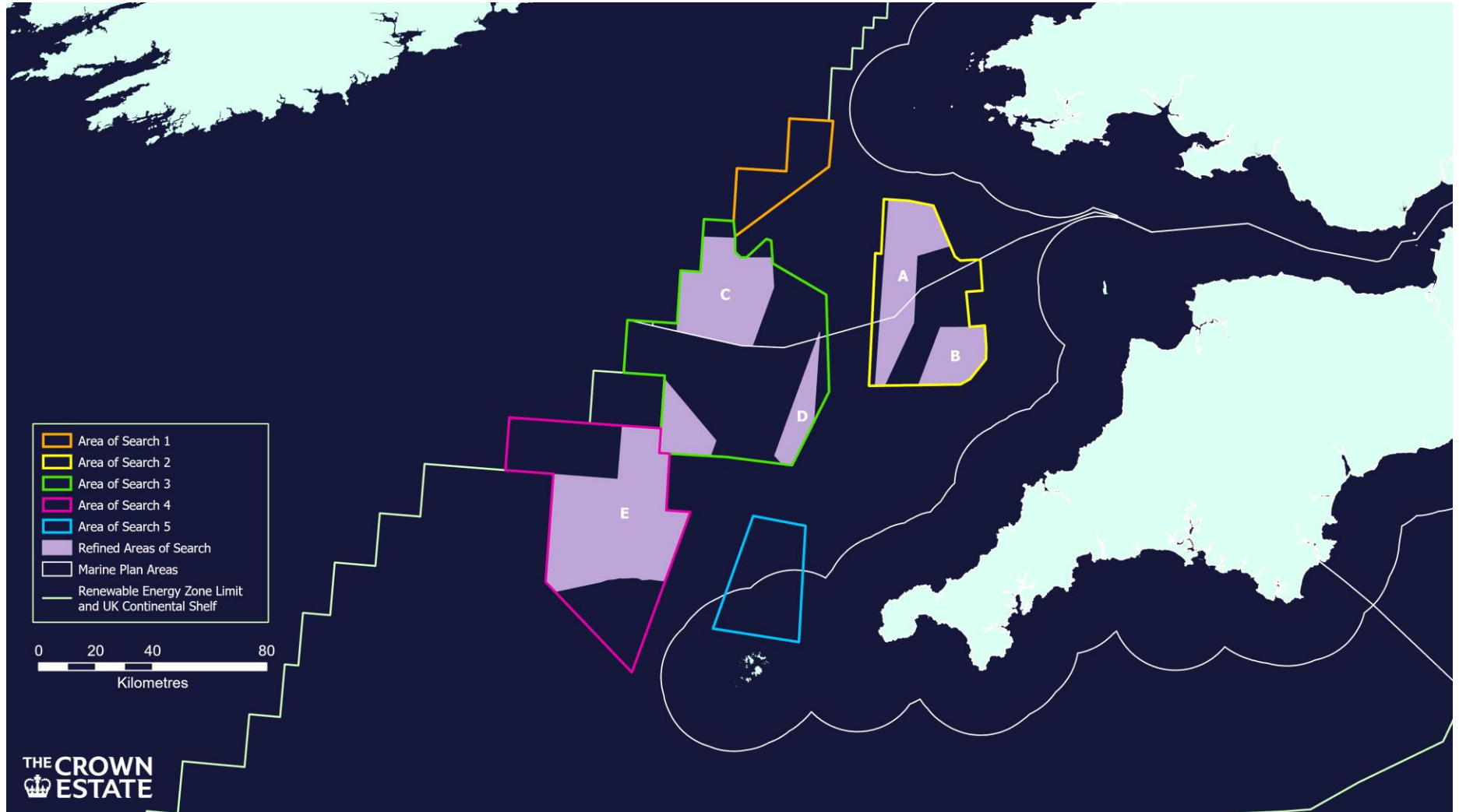
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Historical data source: GlobalData (2022), IRENA (2022)

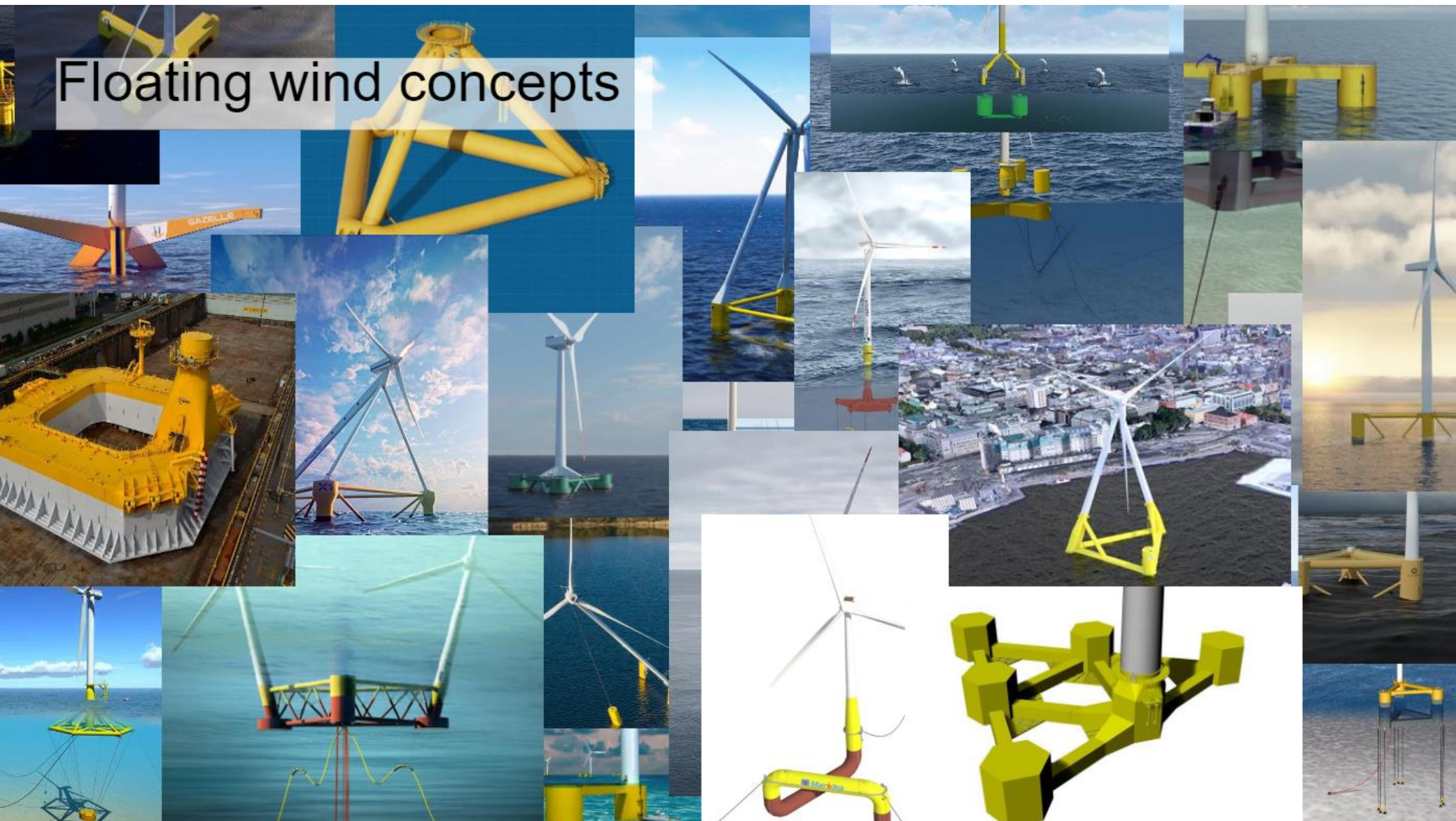
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Opportunity in the Celtic Sea...



Floating wind concepts



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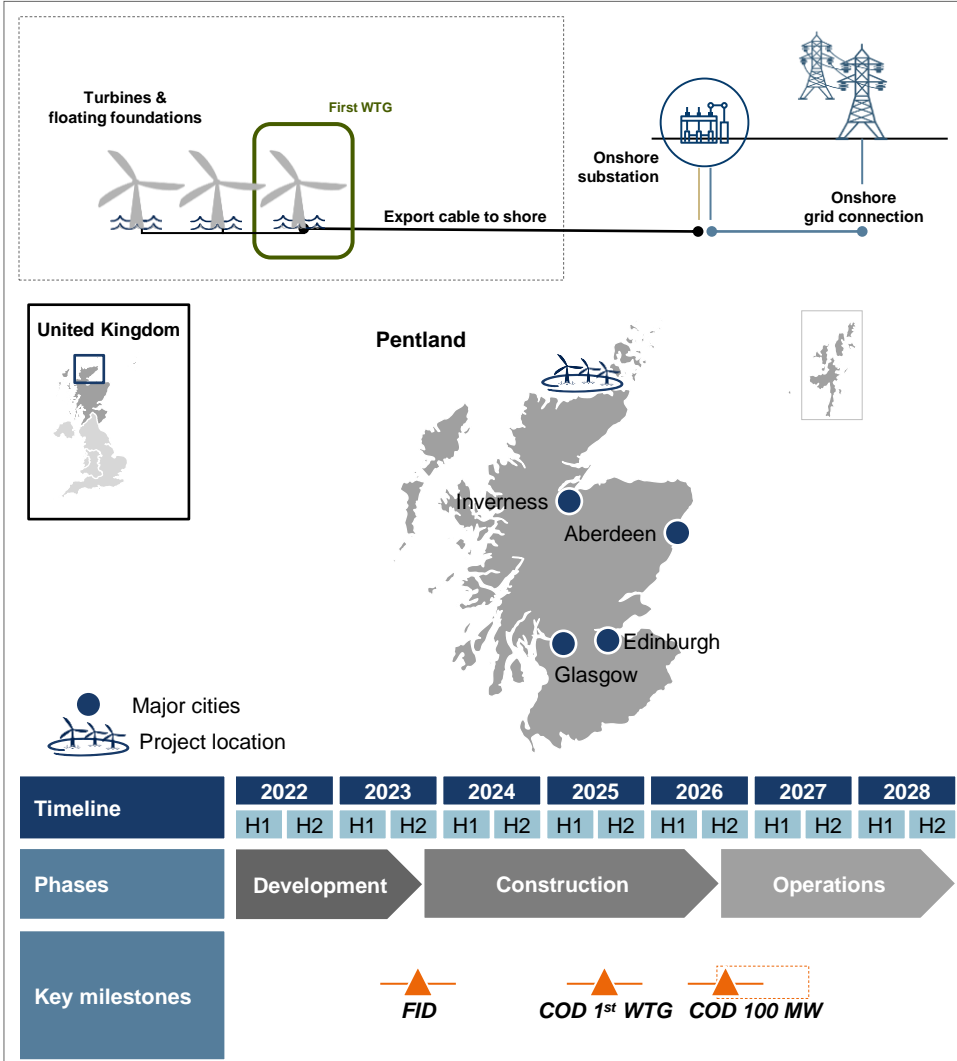
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Pentland Floating Offshore Wind Farm

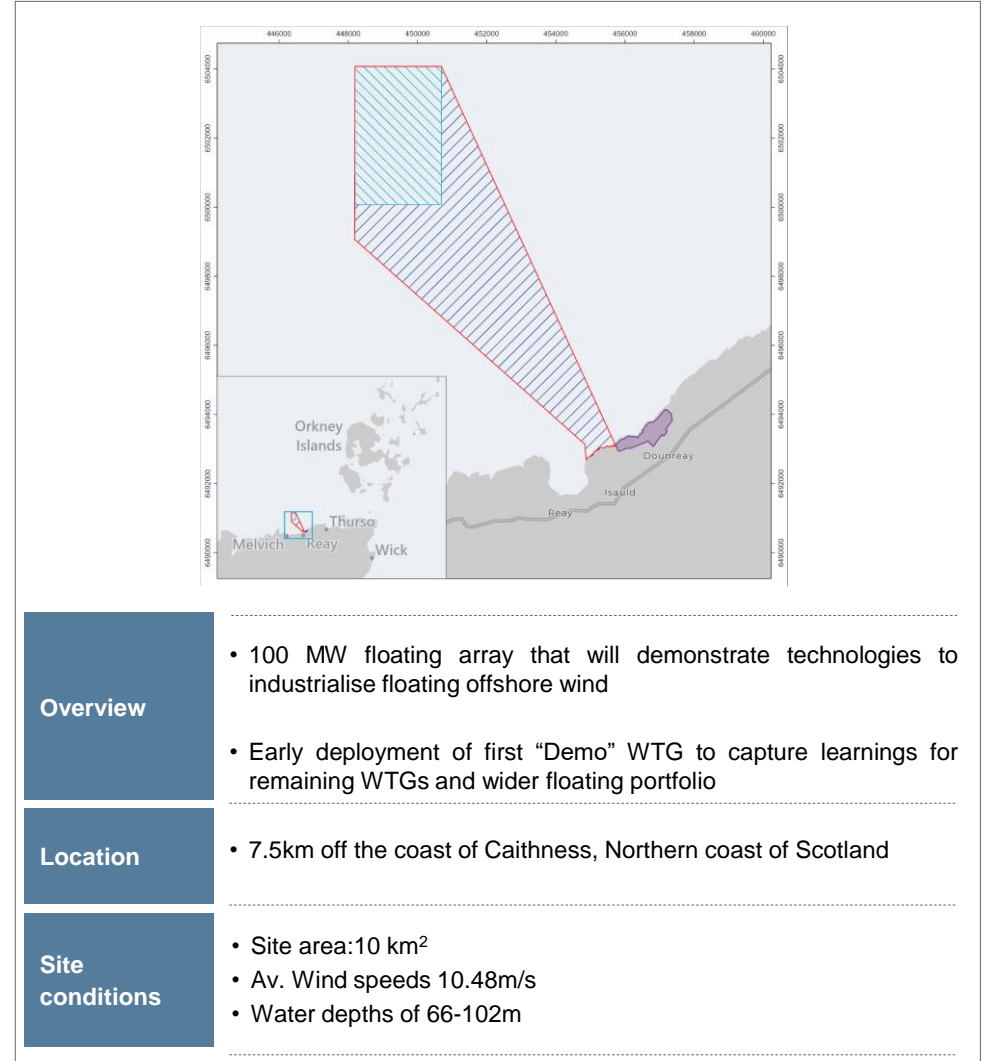
Accelerating the development of floating offshore wind



Overview of infrastructure assets and project location




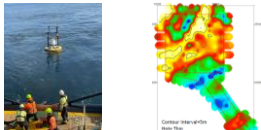




Key project facts & map



The Pentland project will kick start industrialisation of floating wind in the UK and support CIP’s global floating wind portfolio of 19GW+

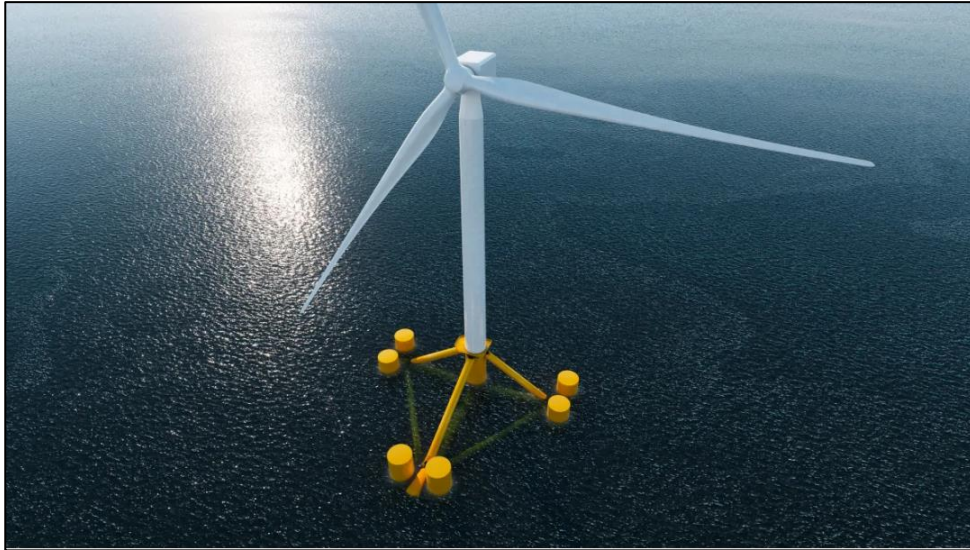
The Project is at an Advanced Stage of Development

<p>Offshore Lease</p>		<ul style="list-style-type: none"> • Option agreement secured with Crown Estate Scotland
<p>Grid Connection</p>		<ul style="list-style-type: none"> • 100 MW grid connection secured • Onshore infrastructure design at advanced stage
<p>Environment & Consents</p>		<ul style="list-style-type: none"> • Site previously consented for offshore wind • All environmental surveys completed • Offshore consent application submitted • Onshore Planning Permission in Principle granted
<p>Wind Measurement & Site Investigations</p>		<ul style="list-style-type: none"> • FLiDAR deployed since July 2021 • Extensive offshore site investigations complete: full geophys & UXO, 9 boreholes, 23 CPTs, 5 shallow boreholes. Detailed Geotech contracted for Summer 2023 • All onshore site investigations completed
<p>Technology</p>		<ul style="list-style-type: none"> • Project will demonstrate a number of technologies that will help industrialise floating offshore wind • Design at an advanced stage • Stiesdal Offshore's Tetrasub floating structure technology selected
<p>Supply Chain</p>		<ul style="list-style-type: none"> • Advanced stage of Tier 1 selection and supply chain engagement • Targeting 40-60% lifetime UK content • Series of supply chain engagement events held over 2022, with upcoming events in 2023 • MOU with Scrabster Harbour for O&M Port

• Note: CPT: Cone Penetration Test , UXO: Unexploded Ordnance, MOU: Memorandum Of Understanding.

Floating Foundation Technology Selected

Stiesdal®

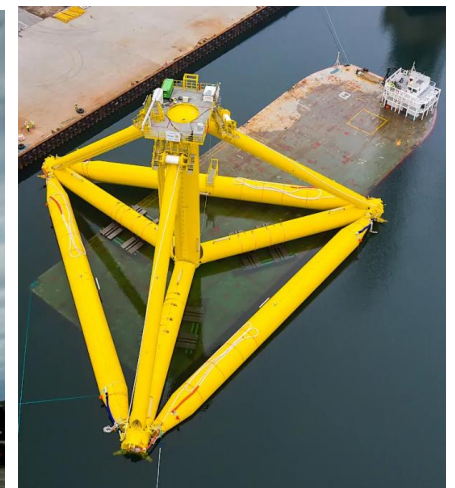
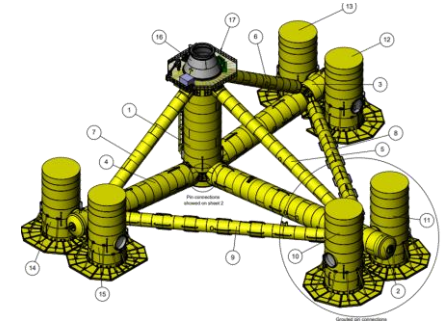


Pentland Floating Offshore Wind Farm ...
1,500 followers
2h • Edited •

Pentland has selected **Stiesdal** Offshore's Tetrasub floating structure technology for the proje ...see more



Pentland Floating Offshore Wind Farm announces Stiesdal technology selection
pentlandfloatingwind.com



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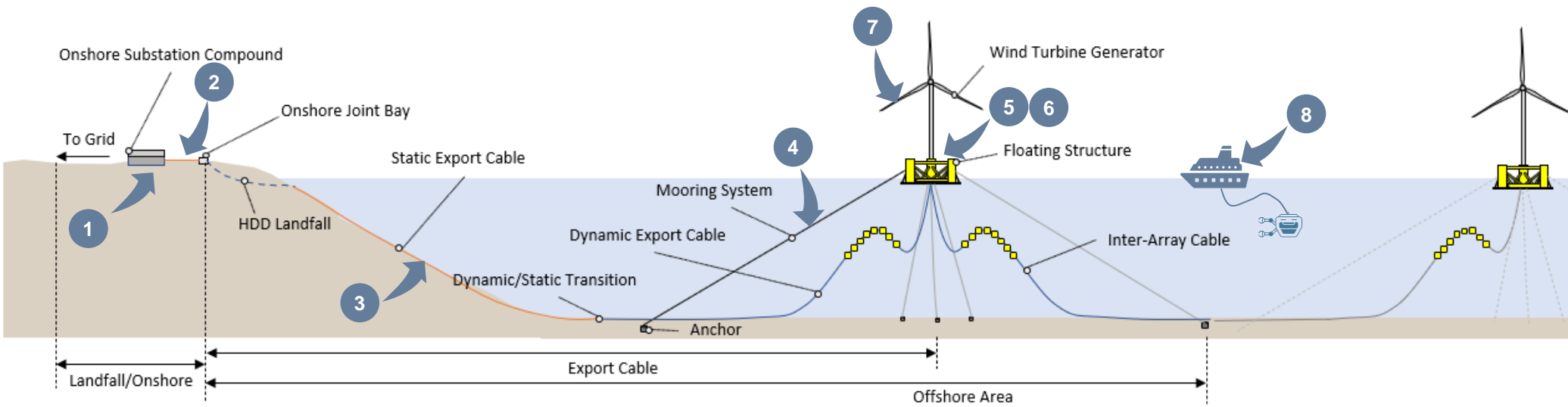
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Overview of Types of Supply Chain Opportunities



Package/Scope	1 Onshore Substation and Infrastructure	2 HDD and Onshore Cable	3 Export & IAC Cables	4 Mooring & Anchoring/T&I & Hook-up	5 Floating Sub Structure Supply/ Assembly	6 Floating Sub Structure Fabrication	7 Wind Turbine Generator	8 Operation and Maintenance
Tier 1 (EPC or EPCI contractors)	EPC selection in progress	EPCI selection in progress		EPCI selection in progress	EPC selection in progress	EPC selection in progress	EPCI selection in progress	AMA & SMA selection in progress
Tier 2 Scopes (high level, non-exhaustive)	<ul style="list-style-type: none"> SI/GI Earthworks Buildings HV/LV fit-out Plant & Temp offices Security Waste disposal 	<ul style="list-style-type: none"> SI/GI Earthworks HDD services Welfare Generators Security Guard vessels Temp offices 	<ul style="list-style-type: none"> Cable ancillaries Vessels Logistics Storage Labour Site surveys Lifting services Vessel crew 	<ul style="list-style-type: none"> Mooring lines Vessels & crew Bunkering Subsea inspections and repair Labour Guard vessels 	<ul style="list-style-type: none"> Port services Grout supply Labour Tugs Barges Power supply Assembly tooling Lifting services 	<ul style="list-style-type: none"> Transport Load/unloading Storage Lifting services Structural steel Office/welfare Anodes Secondary steel 	<ul style="list-style-type: none"> Transport & logistics Lifting equipment Secondary steel Temporary site facilities Welfare 	<ul style="list-style-type: none"> CTV's/ports Helicopters Vessels/ROV Inspections Monitoring Data mgmt Technicians Storage

Supplier Registration

Link to Pentland Floating Offshore Wind Farm website portal

Where to register

The screenshot shows the website navigation menu with 'WORK WITH US' highlighted. Below it, the 'Pentland Floating Offshore Wind Supplier Registration Portal' is displayed. The page content includes:

Pentland Floating Offshore Wind Farm - Supplier registration

Thank you for your interest in our Pentland Floating Offshore Wind Farm project. This form can be used by interested suppliers to register their contact information and by this to participate in the tender process for individual packages.

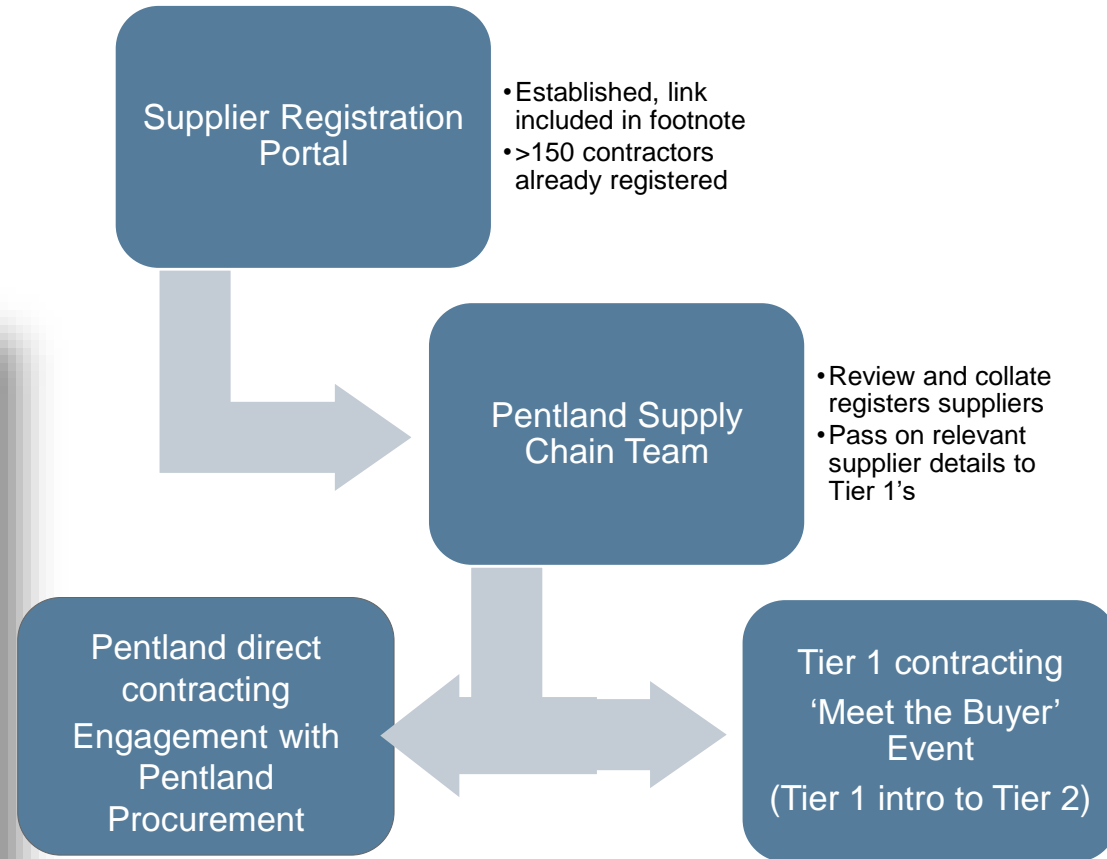
The Pentland Floating Offshore Wind Farm team will collect the submitted data and approach interested suppliers prior to the start of each tender process.

We are looking forward to discussing future partnerships with you.

* Required

1. Please state the **name of the company** you are representing *
The company name should be in line with the official registration. E.g. "Copenhagen Offshore Partners A/S"
2. Please provide the URL of your company **website** *

How your registration will be managed



Option to sign up to the global COP database - Pentland can facilitate access to global floating wind opportunities

Link: <https://pentlandfloatingwind.com/work-with-us/>

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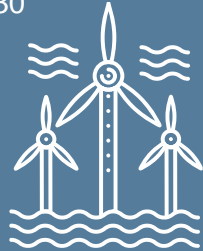
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The Future is Floating...

50GW of operational offshore wind by 2030

5GW of this to be floating



Floating wind will be **key to increasing security of domestic energy supply** and decreasing reliance on energy imports



Offshore wind is seeing increasing support from the public – a recent Scottish Government study found **80% of people feel positively about offshore wind developments**



Leading technology

The UK is already a **world leader in floating technology** thanks to its oil and gas and maritime heritage and much of this technology is transferable to floating offshore wind



Leading skills development

The expansion of the offshore wind industry in the UK could create almost **100,000 jobs by 2030** (30% of which are expected to be in Scotland) with the private sector expected to invest £155 billion



Leading decarbonisation

It will support the **continued decarbonisation** of our electricity supply and increasingly facilitate emissions reduction in heat and transport, potentially enabling the growth of green hydrogen



...and It Starts Here.

	<p>Lifetime socioeconomic impact</p> <p>Pentland is expected to have lifetime UK content of 40-60% with £50 million spend expected to be in the Caithness area and £150-200m in Highlands and Islands (2021 figures)</p>		<p>Local Operations and Maintenance base</p> <p>We signed an MoU with Scrabster Harbour Trust to become the project operations and maintenance base</p> <p>This is expected to create in ten high quality long term direct jobs locally and a number of other opportunities</p>		<p>Community benefit</p> <p>Foundation Scotland has consulted on a proposed community benefit fund to support climate smart projects which meet the needs of the community</p> <p>The recommendations from this will inform the final design of the fund which will be announced shortly.</p>
	<p>Skills development</p> <p>We've awarded the first bursaries from our Education & Training Fund which supports local students from Thurso and Farr High Schools who will study STEM subjects at university</p> <p>We also hire from oil and gas so are facilitating the skills transfer required for the energy transition</p>		<p>UHI Partnership</p> <p>We're collaborating with UHI, hosting summer interns, supporting student projects and utilizing consultancy services in socioeconomic and environmental areas, with further collaborations to be announced.</p>		<p>Local supply chain opportunities</p> <p>We are committed to providing opportunities to local companies across the project development, hosting several supply chain events, with further events planned in 2023.</p>
	<p>Caithness Chamber of Commerce</p> <p>We are a member of the Caithness Chamber of Commerce to ensure we are an integrated part of the local community, addressing and supporting local needs</p>		<p>Viewing point</p> <p>We've initiated a feasibility study to explore the potential to build a viewing point for the project</p>		<p>Opportunity Cromarty Firth</p> <p>We supported the Opportunity Cromarty Firth Green Free Port bid, recognising the Cromarty Firth's strategic position to support project manufacture, assembly, installation, operation and maintenance</p>



THANK YOU



[Pentland LinkedIn Page](#)



www.pentlandfloatingwind.com



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