CATAPULT
Offshore Renewable Energy

Deepwind - INTOG
Floating Wind Innovation Centre - FLOWIC

Hugh Riddell, Regional Partnership Manager

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Photo courtesy of Principle Power. Artist: DOCK90

THE OFFSHORE RENEWABLE ENERGY CATAPULT

The UK's Leading Technology Innovation and Research Centre for Offshore Renewable Energy

Our Mission is to Accelerate the Creation & Growth of UK Companies in the Offshore Renewable Energy Sector.

- Unique facilities, research & engineering capabilities
- Bringing together innovators, industry and academia
- Reducing cost and risk in renewable technologies
- Growing UK economic value
- Enabling the transition to a low carbon economy

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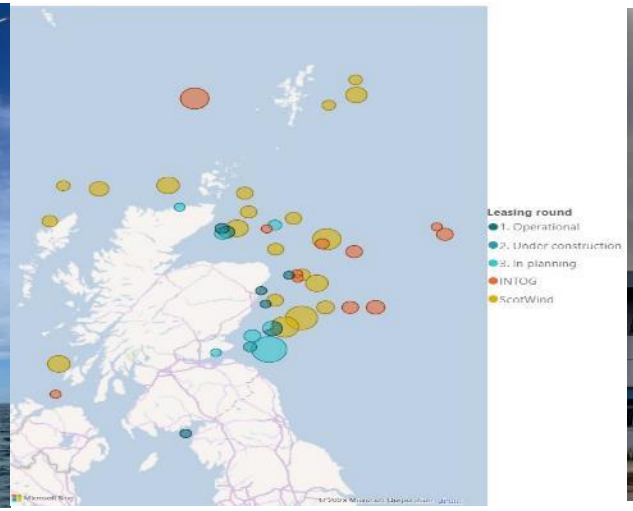
FLOATING WIND INNOVATION CENTRE (FLOWIC)

- **Testing and demonstration** facilities to support the development and qualification of **“critical components”** – dynamic cable systems, mooring and anchoring systems;
- **Reducing risk and cost** associated with critical components in **advance of deployment** in large scale projects;
- **Global centre of excellence** for dynamic cabling systems and mooring and anchoring systems;
- **Unique blend** of world leading expertise, testing and demonstration facilities;



ENERGY TRANSITION ZONE

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DYNAMIC CABLE FLEX FATIGUE TEST RIG:

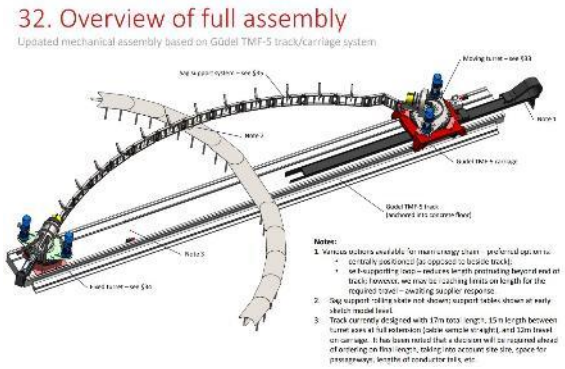
Capability:

- Designed to support the qualification of dynamic inter-array and subsea export cables in a floating offshore wind environment
- Cable sample lengths up to 25m, cable sample maximum diameter of 500mm
- Bend stiffener connector capacity up to 1.5m
- 50kN – 1000kN tensile loading and 1500kNm moment capacity
- Max frequency of 1 cycle/6 seconds giving an approximate duration of 22 weeks for a CIGRE862 1.5 million qualification programme

DYNAMIC CABLE COMPRESSION TEST RIG:

Capability:

- Combining compression and bend testing.
- Capable of testing sample lengths of up to 15m.
- Outer diameter sample maximum of 300mm (66kVa 1200mm2 indicative).



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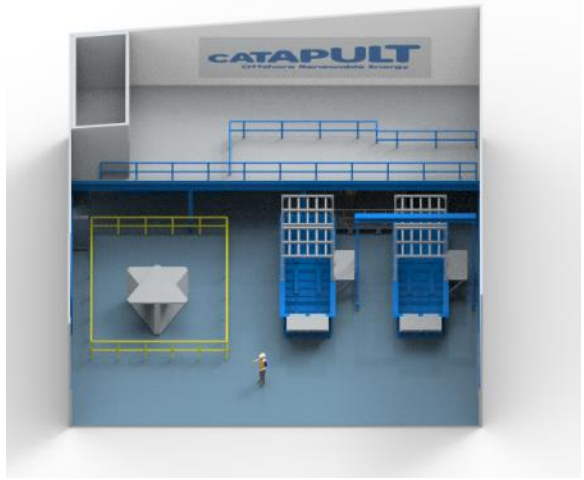
SCALE ANCHOR TEST RIG:



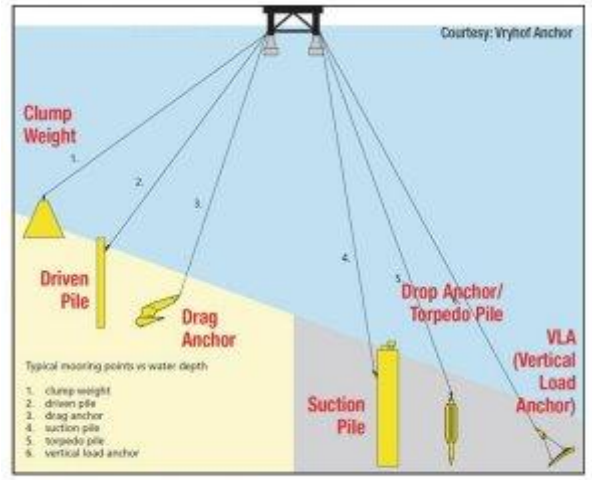


Image Courtesy: VryHof

Capability:

- Multiple tubs and pits available for varied test bed geology.
- Capable for testing of all main anchor types: Gravity, Driven Pile, Drag Embedment, Suction Pile, Drop and Vertical Load.
- Optical motion capture and a magnetic field sensor system for below surface monitoring/modelling
- DAQ system for load monitoring during pull tests

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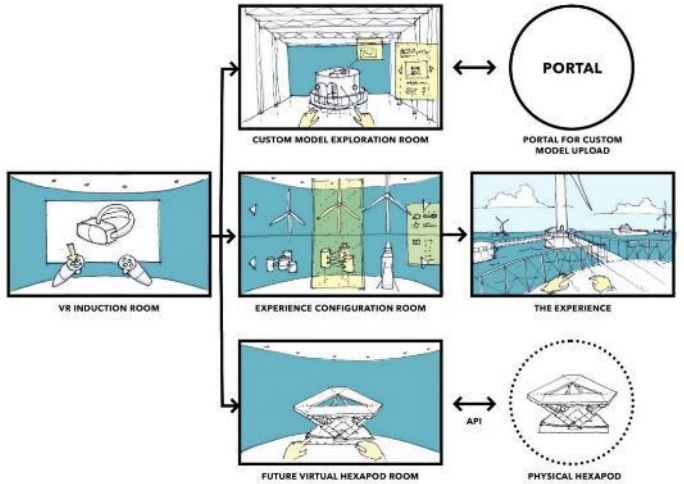
HEXAPOD MOTION SYSTEM:

Capability:

- Capable of a range of motions; surge, sway, heave, roll, pitch & yaw (6 degrees of freedom), to simulate the offshore environment
- Maximum velocity of 0.68m/second travel and +/- 40degrees/second roll, pitch or yaw
- 1800kg max working payload

VIRTUAL REALITY STUDIO:



Capability:

- Dedicated virtual reality studio designed to inform the user on the intricacies of a floating offshore windfarm, with a focus on the technical systems that FLOWIC is working on.
- Packaged solution alongside the Hexapod to simulate the FoW environment and how it informs on critical components during their offshore deployment.

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LARGE MOORING LINE TEST RIG:

Capability:

- High-capacity mechanical testing of full-scale mooring lines, capability dependant on specification, TBC
- Suitable for quality control checks or new product development
- Approx 106m in length and 15m in width
- Pre-test tensioning of the specimen and lockable static end, frame to react with the ground

Plan:

- Paid FEED study on-going with three organisations. Full detailed design with selected contractor to commence April 24.
- Ongoing discussions with the Port Authority and ETZ regarding the purchase and enablement of the land adjacent to FLOWIC
- Mid 2025 as an initial date for installation and SAT

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FLOWIC Official Opening 18th March 2024

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info@ore.catapult.org.uk

ore.catapult.org.uk

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