# WP5 – Floating Futures

Aim: Assess floating solutions for ORE with the potential for very large installations, deployable across a large range of water depths and further from shore, reducing offshore human intervention in a cost efficient and environmentally less intrusive manner.


Challenges: "One turbine per floater" strategy – operation & maintenance challenges for the mooring system

Solution: Very Large Floating Structures (VLFS) - VLFS is an unprecedented large and flexible floating structure – Global hydro-elastic response becomes dominant.
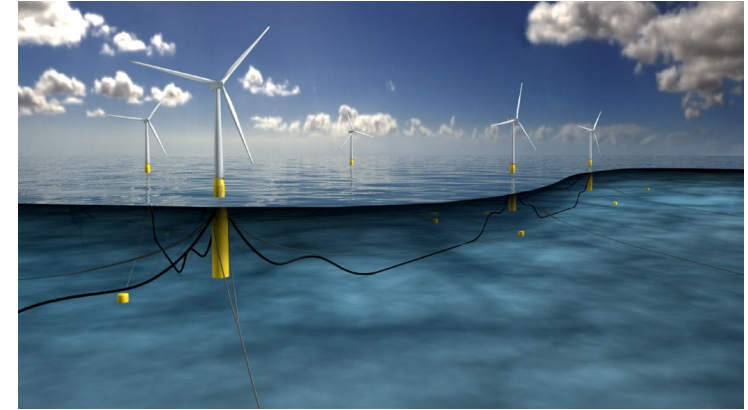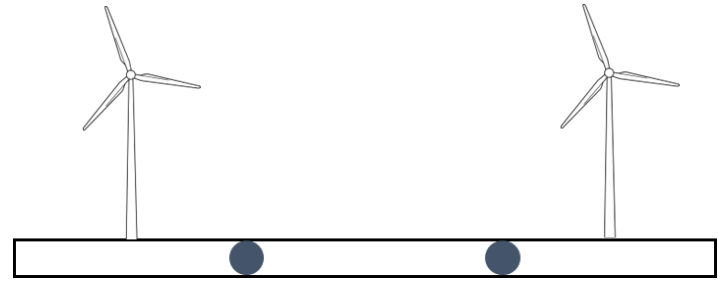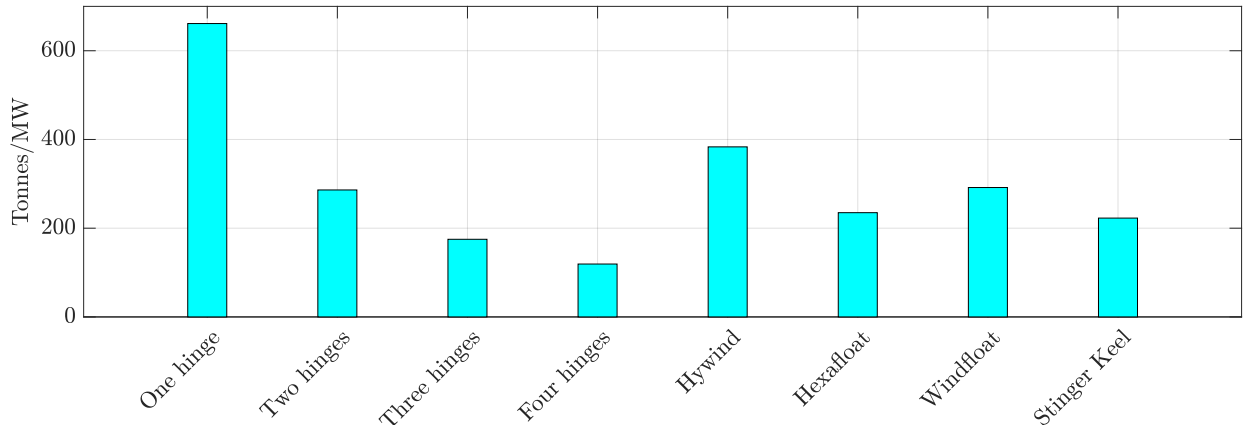
WP5 – Recent Progress

Hydroelasticity – analysis method & verification: Multi-body dynamics + Elastic deformation + Hinge connection; Model test at Kevin Hydrodynamics Laboratory for verification
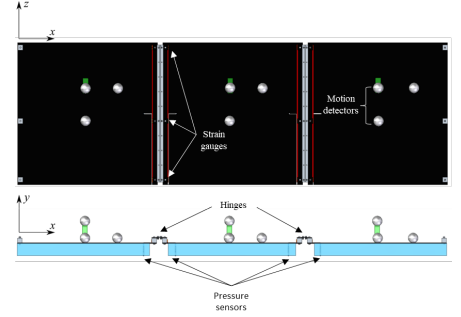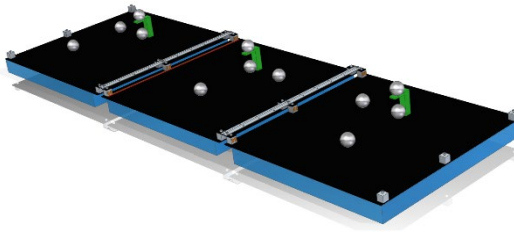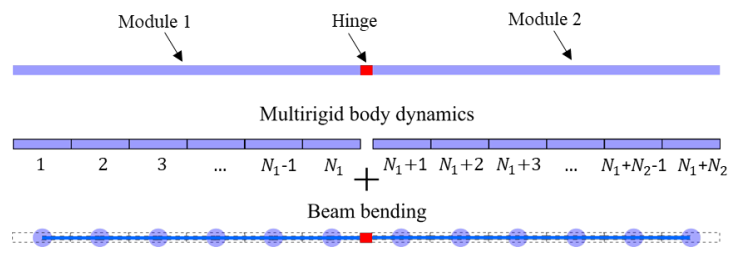
Structural analysis & optimization: VLFS prototype shows a comparable structural weight in comparison with other floating offshore wind concepts

Linkages with core research and flex funded research
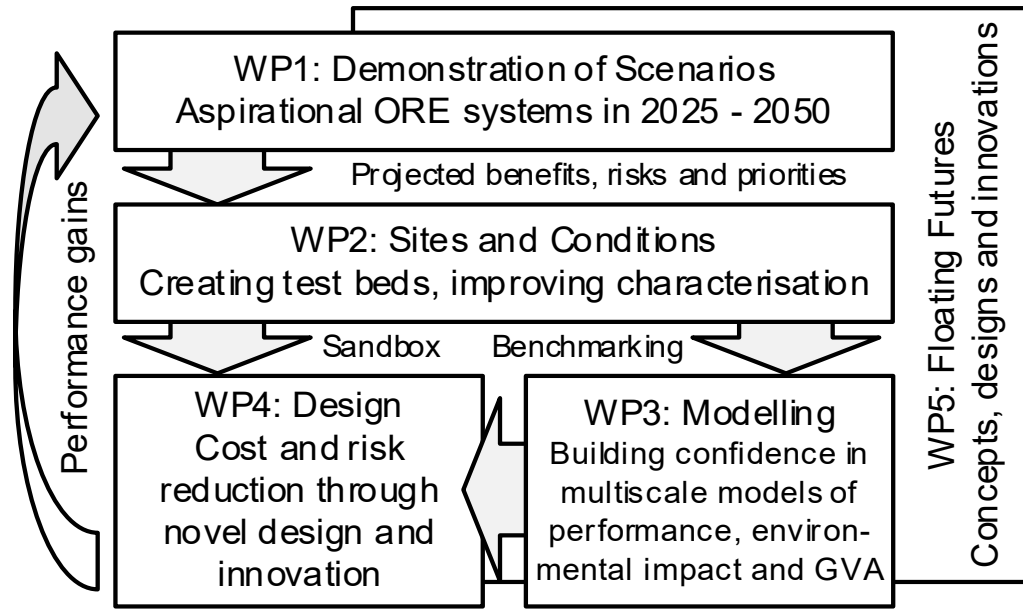
- Cost Effective Methods of Installing Offshore Wind Infrastructure
- Physics-informed machine learning for rapid fatigue assessments in offshore wind farms
- FORTUNE: Floating Offshore Wind Turbine Noise
- Corrosion And fatigue protection of offshore wind Turbine structures using additive manufacturing technology
- Autonomous Biomimetic Robot-fish for Offshore Wind Farm Inspection
- Enhancing Control Capability of ORE Systems for Stress Management and Grid Support