

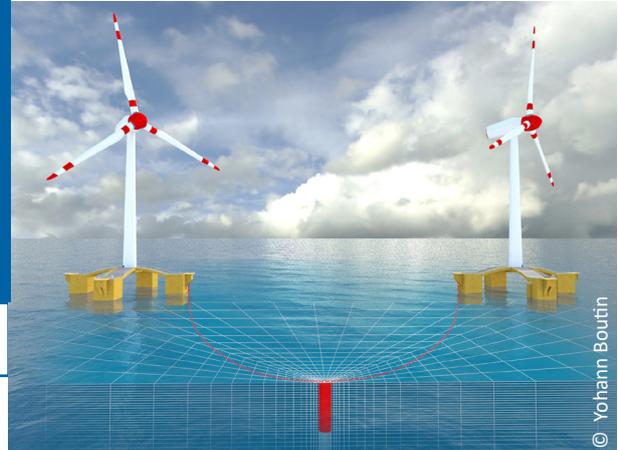
MUTANC

Mutualised anchors for offshore wind farms

DURATION: 36 months | LAUNCH: 2021 | Total budget: €1,343K

CONTEXT

In Europe, around 80% of the offshore wind resource is located in waters of more than 60 meters depth. This corresponds to sites with larger water depths where floating offshore wind turbines are considered to be technologies that can satisfy the environmental constraints and ensure a competitive levelised cost of energy. After the development of demonstrators and the deployment of small farms, the next step for floating wind will be commercial farms, using 20 to 100 turbines, leading to a reflexion on the mooring systems to be used for such projects. **Mutualised anchors can reduce the mooring system cost by up to 16% in a wind farm of 100 turbines. However, their potential to reduce the levelised cost of energy still need to be studied in details.**



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TECHNOLOGIES



STAGES OF THE VALUE CHAIN



Design

SCIENTIFIC CONTENTS

- **Mooring system design** and shared anchor load analysis
- **Geotechnical modelling** with 3D finite element numerical method
- **Centrifuge tests** on small-scale models to study multidirectional loadings and cyclic loadings
- **Cost estimation** of mooring systems through experts consultation and existing cost models

OBJECTIVE

To study the potential of mutualised anchor to reduce the levelised cost of energy of floating offshore wind farms

EXPECTED RESULTS

- Assessment of the feasibility and cost of mooring systems with mutualised anchors for different cases
- Development and validation of numerical and physical modelling for mutualised pile anchors
- Conclusions about the overall techno-economic performances of the mutualised anchor and description of possible further R&D work

PARTNERS



With the financial support of WEAMEC, Pays de la Loire region and Pôle Mer Bretagne Atlantique.



This project receives French State funding of €221K managed by the National Research Agency under the Investments for the Future Programme.

