Marine energy and mining resources

OMDYN2

BEHAVIOUR AND LIFESPAN OF FLOATING MRE CABLES

Some of the most significant feedback emerging from experience of offshore fixed wind turbines concerns the power cable. This feedback reveals a lack of technical knowledge which goes hand in hand with the particularly complex physics relating to the laws governing the behaviour of the cable. This is even more true for floating systems, where the cable is also subject simultaneously to electrothermal constraints and extreme hydromechanical demands in the swell. As a result, the dynamic power cable is a crucial component in the floating wind turbine industry.

The OMDYN2 project will characterise and model the electrothermal/hydromechanical behaviour of dynamic power cables for floating MRE.

The object is to define an experimental procedure capable of addressing the multi-physical demands of the real world and thus of helping improve lifespan prediction while also ensuring certification. The intention at the same time is to construct numerical models for modelling these multi-physical demands to enable the industry to optimise lower cost dimensioning using iteration loops.

Biofouling has a major impact on this component and will be monitored, experimentally and numerically characterised and modelled.

To ensure the methodology is validated and continues to evolve, an innovative system of in-service monitoring will be proposed using a solution involving a dedicated sensor and an ongoing learning process.

Partners

Companies

Bureau Véritas, Paris
EDF
Innosea, Nantes
Naval Energies, Paris
RTE
STX France, Saint Nazaire
Total

Research centers

France Energies Marines / Ecole Centrale de Nantes, Nantes [Project Developer]
ENSTA Bretagne, Brest
Ifremer, Brest
Université de Nantes, Nantes

Funders

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