

FLOWTOM

Floating offshore wind turbines operation and maintenance

DURATION: 36 months | LAUNCH: 2021 | Total budget: €1,600K

CONTEXT

The offshore wind operations and maintenance market will grow over the next decade and will become the second largest sub sector market after turbine supply. This huge market size drives considerable research, development and innovation opportunities. **This applies even more particularly to maintenance of floating offshore wind turbine installations that face specific challenges, that need to be addressed to ensure competitive energy costs and acceptable operational risk. This concern is all the more relevant to the Gulf of Lion where pilot and commercial farms will be deployed in the near future.**



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TECHNOLOGIES



STAGES OF THE VALUE CHAIN



O&M

OBJECTIVES

- To progress the development of heavy lift solutions for floating offshore wind turbines offshore maintenance
- To provide high resolution short term metocean forecasts over the Gulf of Lion for maintenance operations

EXPECTED RESULTS

- State of the art on heavy lift offshore maintenance solutions
- Optimised heavy lift offshore maintenance solutions and recommendations towards industry for integration of maintenance strategies into turbine and floater design
- Validated method statement for one selected heavy lift offshore maintenance asset applied to different turbine/floater designs
- Online learning-based high resolution probabilistic wind and wave forecast system over the Gulf of Lion (target time scales: from 5 min to 96h)

SCIENTIFIC CONTENTS

Heavy lift offshore maintenance methods

- Investigation of methods and technologies for heavy lift offshore operations in floating wind farms through workshops with stakeholders
- Assessment of a selected heavy lift solution through numerical simulations considering different turbine and floater designs
- Validation of the method statement through basin tests

High resolution probabilistic forecasts

- Construction of the dataset, including implementation of in-situ surveys
- Development of wind and wave learning-based model : end to end architecture, tuning and testing on test site, transfer learning
- Implementation of an online forecasting system with scoring: iterative design with end-users feedback

PARTNERS



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