

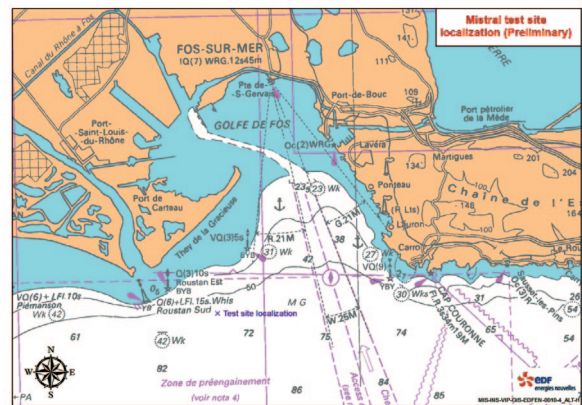
Floating Offshore Wind Test Site



The Gulf of Fos floating offshore wind test site, MISTRAL, is one of the five test sites that are being implemented and coordinated by France Energies Marines for the different types of MRE technologies, including two sites dedicated to floating offshore wind, reflecting the existence of two distinct markets and metocean conditions. The site development is part of a joint effort funded under the EC FP7 programme, also including the development of a vertical axis wind turbine prototype (INFLOW project). Consultation and development activities, including environmental studies and geophysical studies, are well under way and consents application will be lodged by the end of 2012. The test site is expected to be completed and fully operational by 2014.

The test area is located in the Gulf of Fos, off the Mediterranean coast, 3.5 NM from the Rhône river mouth, facing Port Saint-Louis du Rhône. A subsea Termination Unit (STU) will allow the connection of 3 floating offshore wind turbine in 60 to 70m water depth with a maximum cumulative capacity of 10MVA. A combined electrical and optic fibre cable will connect the STU to the nearest onshore substation approximately 20km away, the onshore section representing 2/3rd of this distance. A range of sensors and instruments will also be deployed to monitor the environment and the prototypes. Developers will be able to benefit from the existing facilities and industry capabilities of the Marseille megapolis to support the different stages going from manufacture to de-commissioning.

France Energies Marines Test Sites are a key component of France Energies Marines overall offer and objectives of providing support from the concept stage through to technology qualification.



MISTRAL TEST SITE CHARACTERISTICS:

- Water depth 60m to 70m
- Seabed Sand/mud
- Export cable 10MVA
- Hub connexions 3
- Mean wind speed >7m/s
- Instrumentation LIDARs, ADCPs, Hydrophones, wave gauges etc.

MISTRAL MAIN ACTIVITIES:

- Test performance and reliability of Floating Offshore Wind Turbines and their related equipment.
- Provide Metocean data to the developers.
- Conduct research activities on the environmental impact of FOWT.
- Assist developers in the optimisation of installation, operations and maintenance solutions.
- Develop and test new sub-systems related to MRE technologies (instrumentation, connectors etc.) benefiting from a well monitored environment.
- Support the overall sector R&D activities and efforts.