



## Conceptual studies | Engineering studies



The development of an offshore project requires the integration of all specific issues related to the site, **technical but also regulatory, environmental, and societal**. This is key to identify the most appropriate locations, to provide inputs for the business plan and the engineering process, to evaluate the constraints for marine operations, to optimize the layouts, for the permitting process...

## OUR OFFER

Our site characterization offer covers the full development process, from preliminary to operational phases, and all the topics such as:

- **Analyses of global and regional metocean databases** and set-up of dedicated numerical models
- **In-situ measurements** for both physical (wind, wave, current, etc.) and environmental aspects including innovative protocols
- **Metocean design basis** and design load cases derivation
- **Assessment of specific events** such as wind and wave conditions in cyclonic conditions, sand dunes mobility, etc.
- **Assessment of the effects** of highly nonlinear or breaking waves on offshore wind foundations
- **Accessibility studies** including weather windows analyses and operational forecast set-up
- **Development of multi-model approach** to predict offshore wind farm impacts on the ecosystem and socio-ecosystem

## OUR REFERENCES

- **CASSIOWPE** (ongoing): Wave, wind, hydrodynamic coupled simulations to refine metocean conditions
- **OROWSHI** (ongoing): Improvement of parametric wind and wave models in cyclonic conditions and development of wind and wave joint extremes analysis
- **DUNES, MODULES** (ongoing): Characterisation and physical modelling of marine dunes subject to complex hydrodynamic forcings, affecting foundation design and cable layout
- **POWSEIDOM** (ongoing): Development of innovative turbulence characterizations from lidar measurements
- **DIMPACT** (ongoing): Slamming force assessment on floating wind turbine
- **POLLUECUME** (ongoing), **ANODE**, **ECOCAP** (ongoing): Dispersion modelling of metals and other pollutants released into the environment at different ORE sites
- **ABIOP, ABIOP+**: Development of biofouling characterisation protocols considering sites and components specificities
- **TROPHIK, APPEAL, WINDSERV** (ongoing), **NESTORE** (ongoing): Environmental and societal impacts of future offshore wind farms in different locations considering various scenarios

## OUR RESOURCES

A multidisciplinary experienced team with strong expertise in site characterisation in different contexts (oceanography, sea operations, hydrodynamics, biology, geosciences, benthic ecology, marine megafauna, avifauna)

### Dedicated instrumentation

- Lidar, current profilers, acoustic telemetry network
- Several measurement stations: MetMast in the English Channel, biofouling buoys in the Mediterranean Sea and Atlantic Ocean, etc.

### Digital tools

- Strong expertise with metocean numerical models (WAVEWATCH III®, CROCO, Meso-NH)
- In-house developed tools for statistical analyses

### Database

- Lidar measurements in several areas of interest, like Mediterranean Sea
- Fully coupled wind-wave-hydrodynamic numerical database in Gulf of Lion (Mediterranean Sea)

## YOUR CONTACT

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