# R&D Webinar - BIODHYL Project Outcomes

# Enhanced biocolonisation knowledge and optimisation of offshore renewable energy systems monitoring

With the financial support of:

# Wrap-up

# BIODHYL R&D Project other results and perspectives

## OTHER RESULTS

- **Biofouling characterization** on samples representative of ORE sector (mooring lines and cables) up to 21 months **along various depths** and up to 4,5 years for **subsurface long-term observation**
- Design of **sampling devices** adapted to offshore environments

- Development of **a methodology** to understand the **influence of environmental variables** on biocolonisation dynamics

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- Development of a methodology to use **biofouling** as a **passive sampler** to characterize reef effect: biofouling as a fish **DNA trap**
- State of the art of biofouling measurement

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- Development of a roadmap to choose automated technologies for **automated biofouling recognition** and metrology for both engineering and environmental purposes

## WAY FORWARD AND NEXT STEPS

- Results shows the **importance of obtaining representative samples** to refine the design of critical components for floating offshore wind (geographic and depth specificity) and **challenge standards** based on North Sea parameters.

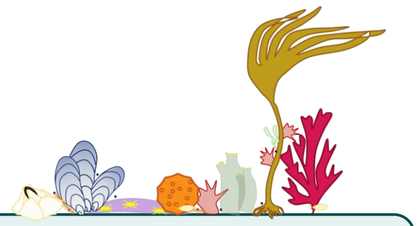
- Steps towards the development of a **tool aiming at showing biofouling univariate variables tendency** depending on sites
- From a better understanding of the influence of environmental conditions to **predictive modelling**

- Extend the biodiversity surveys to biocolonisation
- Development of a **qualification plan** for **automated offshore biofouling measurements** with sensors adapted to ROV/AUV and in-situ testing.

# QUANTUM project outline
# Launched in oct. 2027

FRANCE ENERGIES MARINES

## WP1 – Project management & valorisation

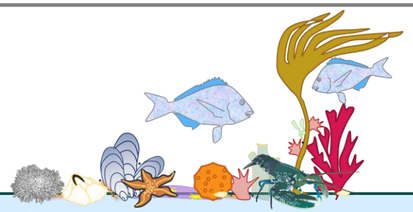


**WP 2 – Obtain quantitative data on biofouling within OWF**

Test site,
Offshore wind foundation,
Rip rap protection for cables,

In-situ images

Quantification of epibenthic communities



**WP 3 – Qualification of biocolonisation of OWF/SS using image analysis**

Offshore wind foundation,
Rip rap protection for cables

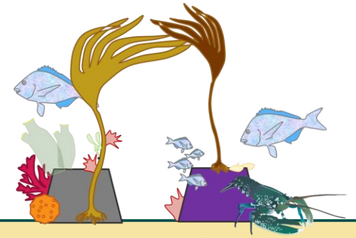
Protocols for image analysis

In-situ images

**WP 4 – Comparison and evaluation of monitoring protocols for biocolonisation characterization**

Offshore wind foundation,
Rip rap protection for cables

Protocols for monitoring biocolonisation



**WP 5 – Evaluation of the ecological engineering methods used in OWF**

Rip-rap protection for cables

① Harmonized protocol for biofouling survey in OWF
② Large-spatial scale characterisation of biofouling

① Biocolonisation image-analysis protocols
② Recommendations on the monitoring approaches to be selected for reef effect characterisation

① Biodiversity & spatio-temporal patterns associated with tested solution
② Indices to measure solutions efficiency

① Research articles
② Presentation of the results to both board and specific audiences

# Thank you for your attention!

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