



R&D Webinar - BIODHYL Project Outcomes

Enhanced biocolonisation knowledge and optimisation of offshore renewable energy systems monitoring



With the financial support of:



Welcome words



Lénaïg MELLAZA
Project manager



Guillaume DAMBLANS
Expert in fluid-structure interactions



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Benthic Ecology Researcher



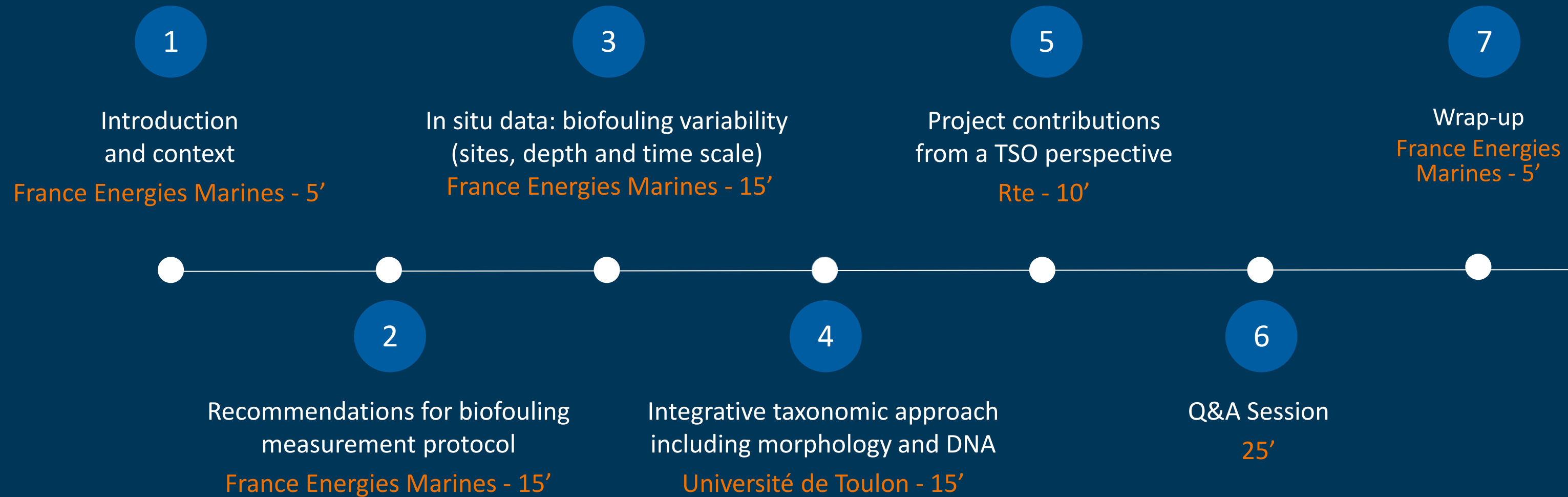
Pr. Jean-François BRIAND
Professor in microbial ecology



Lisa GARNIER
Head of biodiversity R&D

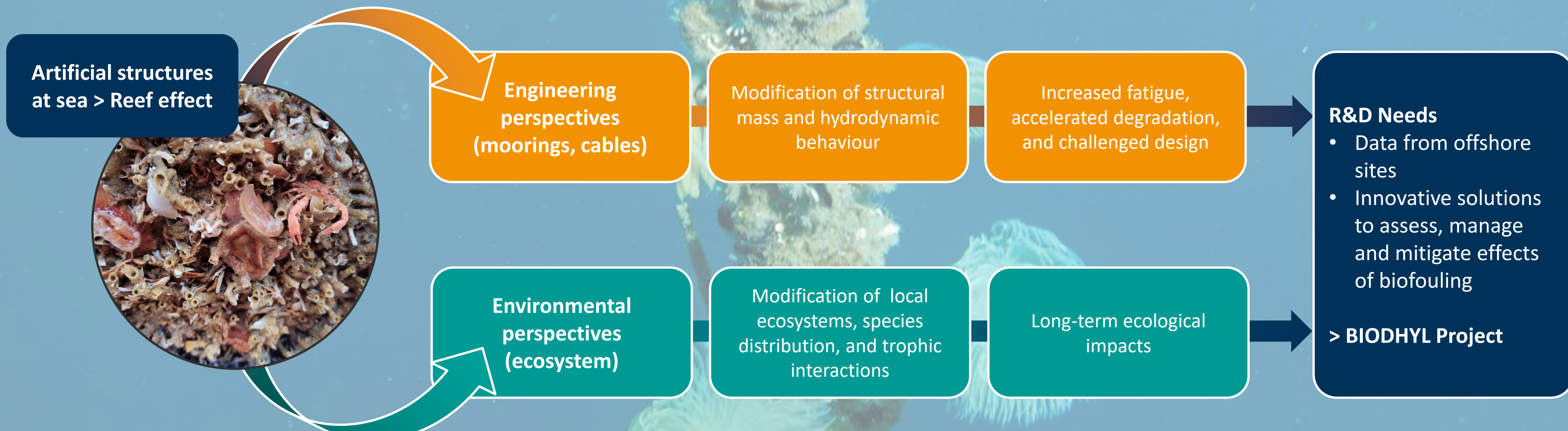


Agenda



Q&A Tab to ask questions that will be addressed during Q&A Session

Introduction and context



More information on the context in the Publication: *A review of biofouling characteristics and issues for offshore renewable energy industry*, *Biofouling journal* (2026), Aurélie Portas, Jean-François Briand, Guillaume Damblans & Nolwenn Quillien
DOI: 10.1080/08927014.2026.2630946

Past project lead by FEM on the thematic



ABIOP (2017-2018)



ABIOP+ (2019-2022)



BIODHYL (2022-2025)

Accounting for biofouling through established protocols of quantification

- Literature review of studies on biofouling on French sea facades
- Review of **biofouling issues for ORE technologies**
- Improvement of **image analysis protocols for macrofouling** integrating environmental measurement conditions
- Specification of **sensor requirements** in terms of accuracy and reliability

Consideration of biofouling using quantification protocols useful for engineering

- Detailed characterisation over **30 months** of biofouling at 5 sites in the Atlantic and Mediterranean
- Development of a **biofouling characterisation protocol** including an adaptation to **synthetic mooring lines**
- Development of an **image analysis method** for species group recognition based on deep learning, classification and segmentation
- Quantification of the **thermal resistance of biofouling**
- Selection of an **in situ proven biofouling management solution**
- Identification of **material biodegradation modes**

Biofouling characterization and description of hydrodynamic loadings

- Increase biofouling atlas database on French cost
- Characterize biofouling along depth gradient
- Recommendations on the complementary use of metabarcoding and taxonomic analysis
- Identification of technologies for subsea metrology & species group identification
- Roadmap for automated biofouling recognition

3.5 YEARS (2022-2026)

€1.9M TOTAL BUDGET

OBJECTIVES

- Better understanding of **biocolonisation ahead of installation of OWF** of an offshore structure by studying the organisms involved and how their populations evolve over time and in response to the environment
- Identification of the most reliable and robust techniques and protocols for **accurate and automatic biofouling characterisation**

9 PARTNERS



INNOVATIONS

- Identification of the **main factors influencing biocolonisation based on different parameters measured on site** (depth, temperature, pH, nitrite content, sea currents, etc.)
- Offshore monitoring over several months or even years, involving the **development of an innovative protocol**

Thank you for your attention!

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