

Launch of COMPASS: a new €5M Horizon Europe project to improve the environmental, social and economic sustainability of offshore wind farms

Europe is rapidly expanding its offshore wind capacity, from around 34 GW in 2023 to at least 88 GW by 2030 and 360 GW by 2050. While vital for the energy transition, this growth raises key questions about the life-cycle sustainability of offshore wind farms, their impacts on marine ecosystems, communities and regional economies, and how best to balance costs, impacts and benefits over time and across sea basins.

COMPASS in a nutshell

Launched in November 2025 for a duration of 4 years, COMPASS will **develop a holistic, open-source decision-support platform** that integrates environmental, economic and social models, life-cycle methodologies, and an **OWF digital twin** that will show how offshore wind farms interact with marine ecosystems and the benefits these ecosystems provide. This will ultimately help stakeholders make better decisions about the sustainability of offshore wind farms (OWF).

About the COMPASS platform

The COMPASS platform will integrate **Life Cycle Assessment (LCA)**, **Social Life Cycle Assessment (S-LCA)** and **Life Cycle Costing (LCC)** with **ecosystem models**, **socio-ecosystem (SES) metabolism models** and **ecosystem services assessment**, enabling assessments that are applicable to both **bottom-fixed and floating** technologies in diverse sea basins. The project's methodology aims to produce clear sustainability indicators and practical recommendations to support design decisions and tender evaluations. To ensure **strong stakeholder uptake**, the platform will be developed in close collaboration with a End-User Group composed of OWF developers, environmental consultancies and decision-makers.

“COMPASS aims to provide strategic direction for the offshore wind sector at the European level by offering practical solutions, based on reliable data and advanced tools, to support the sustainable development of offshore wind in a way that respects societal, environmental and economic considerations.”

Quentin Nogues, Scientific coordinator of the COMPASS project

In the coming months, COMPASS will roll out its communication channels and first project materials. A project website will be launched by April 2026, and the consortium will publish news articles and newsletter to share progress and early results with the offshore wind community and broader stakeholders.

To receive our updates, join us on [LinkedIn!](#)

The COMPASS consortium

Coordinated by France Energies Marines (FEM) and RWTH Aachen University (scientific co-coordinator), COMPASS brings together 6 academic partners (Rheinisch-Westfaelische Technische Hochschule Aachen – RWTH, Universiteit Gent – UGENT, Universitat Autònoma de Barcelona – UAB, Lappeenranta-Lahden Teknillinen Yliopisto – LUT, Technische Universität Berlin – TUB, Vrije Universiteit Brussel – VUB), 3 research organisations (Fundació Institut de Recerca de l'Energia de Catalunya – IREC, Norsk Institutt for Vannforskning – NIVA, France Energies Marines – FEM), 3 industrial partners (Parkwind, RWE Offshore Wind, The Natural Power Consultants Limited), and 2 SMEs (Circular Srl and Euronovia).



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