Modular Floating Wave Energy Converter with Advanced Mooring System

Sector: Marine infrastructures

Short description of the needs:

Seabreath aims to advance the development of a modular, floating and high-efficiency wave energy converter based on multi-chamber Oscillating Water Column (OWC) technology. The solution has already demonstrated technical feasibility at reduced scale through laboratory testing and is now ready for the critical transition to full-scale (1:1) prototyping and real-sea validation.

The main challenge at this stage does not concern the energy conversion concept itself, but the design, engineering and validation of the mooring system, identified as a key enabling factor for nearshore applications. Seabreath has developed an innovative mooring concept based on a single elastic chain, designed to reduce seabed impact and prevent structural failures; however, this solution requires empirical validation, numerical modelling and proper engineering dimensioning.

Additional needs include the optimisation of the umbilical cable, integration of the mooring system with a modular and scalable structure, and validation of the overall system under extreme marine conditions. Seabreath seeks collaboration with technical and scientific partners specialised in offshore engineering, marine structural dynamics and experimental testing, to transform validated concepts into a market-ready marine energy solution and enable future large-scale deployments.

More info: For more information apply to d.francia@unibo.it

Seabreath designs and develops proprietary wave energy conversion technologies and integrated marine systems, positioning itself as a technology developer and OEM delivering complete solutions for marine energy applications.

Company: **SeaBreath S.r.l.**

Point of contact for the brief/challenge: Unibo

Company position in the value chain: OEM / Tier 1