



On December 2023, the MAREWIND project achieved a significant milestone by deploying the Gravity-based structure (GBS) in open sea. Collaborating with The Hydrographic Institute from Portuguese Navy, the GBS was successfully deployed in Sines, (Portugal).

The **Institute of Science and Innovation in Mechanical and Industrial Engineering (INEGI)** has meticulously designed a specialised Gravity-based structure incorporating the necessary features to facilitate comprehensive testing and validation processes.

The GBS is equipped with electrical and optical strain gauges. These sensors are designed to collect strain data corresponding to the forces experienced by the GBS over a six-month period.

The main objectives of the GBS are twofold. Firstly, it aims to evaluate the effectiveness of antifouling coatings and innovative concrete ballast system. Secondly, the data will be utilised to validate an Artificial Intelligence (AI) algorithm capable of predicting structural damage caused by sea conditions.



INEGI team deploying the GBS in open sea

In June 2024, the GBS will be retrieved from the seabed to conduct an analysis of the results.

The MAREWIND project is moving forward with the aim to solve the technological, economical, business, and societal challenges Europe is facing today. Its innovative solution will establish technological base for competitive offshore wind farms constructions, exploitation and maintenance in Europe. The project outcomes will allow offshore wind energy to become the cheapest source of electricity and thereby making it attractive for everyday use of EU citizens.

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