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ROMEO: New monitoring strategies to reduce operation and maintenance costs for offshore wind farms

10 October 2018

As part of an international consortium, Ramboll is involved in the ROMEO research and development project. The project intends to advance the energy transition in Europe and reduce the costs of offshore wind energy.



Offshore windfarm

Ramboll is part of the ROMEO project, an initiative supported by the EU research programme Horizon 2020. The project aims to reduce the operating and maintenance (O&M) costs of offshore wind farms and systems. This should be achieved by real-time analyses of relevant operating parameters within wind farms.

ROMEO is currently Europe's most ambitious research and development initiative to meet the commitments related to climate change and the energy transition. ROMEO aims to create a platform that enables efficient analysis of operational data to derive and implement optimal, risk-based O&M strategies. These will in turn improve operations, extend life expectancies and reduce maintenance and costs. The project is scheduled to finish in 2022 and is supported by the most advanced information and communication technologies, such as "Internet of Things" (IoT).

Condition-based maintenance with digital twin

Ramboll supports the consortium with sound offshore expertise. With many years of extensive experience in structural design, structural health monitoring (SHM), risk analysis, and O&M of offshore wind power generation facilities, Ramboll is a key partner to the international consortium of 12 recognised and experienced players.

Ramboll is overseeing the structural health monitoring (SHM) by using a digital twin, risk analysis and the O&M strategy. In its final stages, the project will include a comprehensive test of the monitoring techniques developed by Ramboll, as it will be tested in two operating offshore wind farms, ensuring that it is feasible to streamline. The two locations are East Anglia ONE (United Kingdom) and Wikinger (Germany), respectively. This is an important step on the path to condition-based maintenance.

[More information about ROMEO.](#)

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