

# The future of Ocean Energy

## JIP update

Here is the latest update on a number of offshore wind and FPSO Joint Industry Projects.

### BreaKin CFD

BreaKin CFD is a new joint research initiative aiming to confirm, analyse and achieve a further understanding of the underlying physical processes of the BreaKin JIP model test data through CFD simulations. During the BreaKin JIP (2016–2018) wave-in-deck model tests were carried out in MARIN's Depressurised Wave Basin at two scales (1:25 and 1:50) in atmospheric and depressurised

conditions to quantify scale effects and to investigate to what extent entrapped air in the wave and during the impact is of influence. In CFD, parameters can be systematically varied

one by one to assess their individual influence, and detailed visualisations can provide an in-depth understanding of the flow phenomena.

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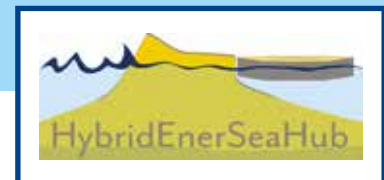


### HybridEnerSeaHub

To support cost-effective renewable energy production far out at sea there is a need for O&M support, efficient and safe energy conversion, as well as the transport and storage of renewable energy. The HybridEnerSeaHub project aims to facilitate those needs by developing an initial design for a partially floating, maintenance and energy storage island and by investigating its feasibility in the North Sea.

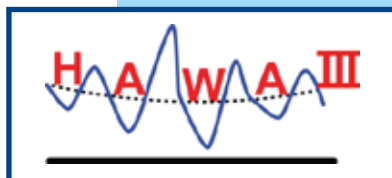
This JIP started on October 1 and will run for 2.5 years. It is conducted in close cooperation with energy companies, operators, yards, engineering companies and marine system suppliers. All participating companies will be represented in the JIP Steering Group. For the complete project plan see [marin.nl/jips/hybridhub](http://marin.nl/jips/hybridhub).

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### HAWA III

#### Guidelines and Tools for Shallow Water Terminals



The objective of the HAWA III JIP is to validate the overall design methodology of nearshore terminals based on model-scale and full-scale measurements, to provide the tools and guidelines to apply the methodology, and to assess the effectiveness of breakwater and innovative mooring solutions to improve the workability of nearshore terminals. Results from the previous two JIP phases will be used and expanded to reach this objective. The project is a joint initiative from

MARIN, Deltares and Bureau Veritas and will kick-off during the FPSO JIP Week in May 2020. The two-year project is expected to start this year and is still open for new participants.

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## LifeLine

### Mooring line failure alarm system

The LifeLine JIP seeks to develop a mooring line failure alarm system for FPSOs based on only GPS position measurements (without the use of any subsea equipment). The methodology, which has been developed for both turret moored and spread moored FPSOs, will be validated by in-

service measurements and blind test simulations provided by participants.

For this purpose 10 FPSOs have been selected which are installed in West Africa, the North Sea, Brazil, Australia and GOM. So far 15 participants have joined

including oil companies, contractors and classification societies. The three-year project started in 2018 and is still open for new participants.

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## Offshore Maintenance I & II

### Operability of wind park maintenance vessels

A wide range of vessels and strategies are available for the maintenance of offshore wind turbines. The objective of the Offshore Maintenance JIP Part I was

to select the most suitable maintenance strategy and vessel for a wind park and for any time of the year.

Completed at the end of 2019, Part II focused on short-term decisions about access to the turbines. To reach this objective the

Deltares Meteo Dashboard system was further developed

so it can be used for day-to-day decision making. For example: 'Can I access turbine number K2 tomorrow at 10 am using the existing fleet?' The Meteo Dashboard will now be broadened to include high-resolution wind data in a follow-up project called the Offshore Wind Dashboard (OWD) which will start mid-2020 and is still open for new participants.

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## SPOWTT

### Safety and Productivity of Offshore Wind Technician Transit

In a European consortium, the project improving 'Safety and Productivity of Offshore Wind Technician Transit' (SPOWTT) aims to widen the weather window for Crew Transfer Vessel (CTV) use and improve the productivity of technicians servicing offshore wind turbines. Ship motion measurements on board the CTVs and environmental data are combined with psychological and physiological methods to monitor the well-being of the technicians as they transit in different sea conditions. This relationship between the environment, ship motions and a technician's well-being will result in a tool that will support the CTV operator in making the decision to launch, not

launch, or only to launch with certain control measures in place. This project is supported by TKI Wind op Zee and Topsector Energie.

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