



# Engineering company providing solutions for the fixed and floating Offshore Wind sectors

OWGP funding supported an engineering design project to adapt Apollo's Pull And Lock Mechanism (PALM) QCS – a quick-connect device used to attach moorings and electrical systems in wave energy structures – for Floating Offshore Wind structures.

## Impact of the support

PALM QCS product attained technology readiness level 4 (TRL4).

Developed a clear strategy to progress to TRL6 and beyond.

Insight into the cost benefit of the PALM QCS and identification of target markets.

## A closer look at Apollo

The connection and disconnection of the moorings and cables that anchor floating platforms to the seabed are a high-cost area in the Floating Offshore Wind market.

Required at mobilisation, demobilisation and during repairs, the cost – including the resulting interruption in power generation – is substantial.

The quick connection mechanisms of PALM QCS offer an efficient way for platform operators to reduce costs and improve reliability, without the need for specialised boats and handling equipment, hydraulics or motion correction. The PALM QCS provides a scalable, robust device which reduces the levelised cost of energy (LCOE).



### BUSINESS PROFILE

- 10+ years of company history with a strong track record in Offshore Wind.
- Significant experience in fixed-bottom structures.
- Looking to transition into services for Floating Offshore Wind.

### SUPPORT RECEIVED

- GRANT FUNDING
- BUSINESS TRANSFORMATION

## Solutions for the offshore wind industry

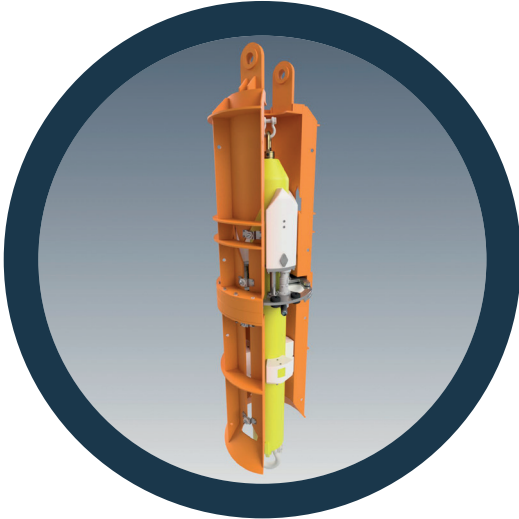


Improved reliability and speed of connection and disconnection of offshore energy devices.

Reduced time and cost for installation, disconnection and maintenance.

Reduced LCOE.

## CASE STUDY



### How did OWGP's support propel Apollo's business into the Offshore Wind sector?

#### Before

With a 10-year history in delivering engineering solutions for fixed bottom Offshore Wind structures, Apollo was developing its service and product offering to cater for the growing Floating Offshore Wind market. Apollo's own research suggested that quick-connect and release devices would be required for Floating Offshore Wind installations as a strategy for reducing the LCOE. Prior to OWGP's support, Apollo had been developing an innovative new device, PALM QCS, to enable quick connection of mooring and electrical systems for floating wave energy developers.

#### During

Apollo secured funding via OWGP's Cross-Sector Call 2020 to undertake a research and design project to adapt its PALM QCS product to work with an existing product on the market, Floating Power Plant's (FPP) hybrid wind to wave converter. This was with a view to improving the costs and reliability of connection and disconnection in the Floating Offshore Wind sector. The findings were supported by engineering calculations and the project concluded with the delivery of a commercialisation report.

#### After

As a result of the project, Apollo gained a deeper understanding of existing connector technology which led the company to develop the market positioning strategy for PALM QCS as an LCOE reduction tool for Floating Offshore Wind farms. Apollo also has a clearer vision of the product's scalability and cost benefit offering to its target market. The resulting concept from the design project has attained TRL4 readiness, with a clear strategy for progressing to TRL6 and beyond.



We knew that we had a concept with strong potential for floating renewables. The OWGP project allowed us to demonstrate how it can reduce installation and operating costs in floating offshore wind, while identifying the technology drivers, market opportunity and route to technical readiness. With this sound basis we are excited to be developing the PALM QCS for Scotwind, INTOG and other forthcoming deployments in the UK. ”



**NIGEL ROBINSON**  
Offshore Renewables Director,  
Apollo  
[www.apollo-engineer.com](http://www.apollo-engineer.com)