Our support across the lifecycle of offshore wind

Building the Offshore Wind Supply Chain

December 2023



Funded by OffshoreWind IndustryCouncil



Offshore wind is playing a crucial role in the creation of new jobs and industries. This brochure provides a snapshot of the support that the offshore wind growth partnership (OWGP), funded by leading offshore wind developers in the industry, is providing to support growth of the UK supply chain. We focus on a number of innovative companies across the UK who have benefitted from OWGP's targeted programmes, and who are making important contributions to the growing the UK offshore wind sector.

Further examples of company success stories can be found on the OWGP website.

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Building the UK's offshore wind supply chain

Who are we?

The Offshore Wind Growth Partnership (OWGP) is a long-term business transformation programme, established as part of the UK Offshore Wind Sector Deal. Working to promote closer collaboration across the supply chain, implementing structured productivity improvement programmes and facilitating shared growth opportunities between developers and the supply chain.

Over the next 10 years delivery will focus on direct support to supply chain companies through a combination of expert business support services and grant funding. ORE Catapult will manage the delivery of OWGP with support from specialist delivery partners.

OWGP is a £100 million programme to accelerate growth in the UK's offshore wind supply chain.

Our Aims



Providing support through two major initiatives

Grant Funding Competitions

We award funding grants up to £1 million to UK companies to develop new products and services, build new capacity and increase capability in the Offshore Wind sector.

Business Transformation Programmes

We offer a suite of business support programmes which support companies at different stages of their journey within the Offshore Wind sector to realise increased impact, productivity and growth.

Our progress so far...



over £17 Million

awarded to UK companies through grant funding and business transformation programmes.



NEW JOBS IN OFFSHORE WIND



Talk to our Grant Funding team



Dr Claire Canning OWGP Programme Manager (Grant Funding)

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Tom Speedie OWGP Project Manager tom.speedie@ore.catapult.org.uk



OWGP run a pipeline of funding competitions to identify highgrowth UK companies and award funding on a competitive basis. Our funds are designed to support transformative projects that will enhance competitiveness, drive innovation, and stimulate growth in the UK's Offshore Wind supply chain.

We encourage applications from existing supply chain companies and those looking to diversity from adjacent sectors.

Grant types available

Development Grants

£100K to £1M

Large scale grants for transformative projects delivering a stepchange in company growth.

Innovation Grants

£25K to £250K

Smaller scale grants for game-changing projects that deliver new innovative technologies, products and services to the sector.

"

It's hugely helpful to have a dedicated source of funding to bring innovative ideas to life for the Offshore Wind industry.

Without OWGP's support, it would have taken much longer to develop our product.



TY BURRIDGE-OAKLAND Founder and Managing Director, Cognitive

Business Transformation

OWGP offers a suite of Business Transformation Programmes which will support companies at different stages of their journey within the Offshore Wind sector to realise increased impact, productivity and growth.

Working with strategic partners and industry experts, our programmes provide access to a range of support services for companies of different levels of maturity. Programmes are for companies already operating in Offshore Wind, as well as those seeking to transition into the sector.

OWGP Business Transformation Programmes

Wind Expert Support Toolkit (WEST)

Our foundation level programme, low intensity, short and designed to give you strategic clarity through the provision of specialist advice, market intelligence and insight into the Offshore Wind sector.

- ↔ Low intensity
- ↔ Short term commitment
- ➔ Specialist advice & market intelligence

Fit 4 Offshore Renewables

F4OR Fit For Offshore

WEST

A medium intensity support programme designed specifically to help the UK supply chain prepare to bid for work in the offshore renewables sector.

- Medium intensity
- ↔ Specialist advice
- A focus on preparation for bidding

Sharing in Growth Offshore Wind Programme (SiG)

Our most intense programme suited to ambitious UK companies looking to accelerate growth in the Offshore Wind sector.

- \bigcirc High intensity
- ⊖ Long-term commitment
- ↔ A focus on accelerating growth

Talk to our Business Transformation team



Lynne McIntosh-Grieve OWGP Programme Manager (Business Transformation)

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SUPPLY CHAIN IN FOCUS

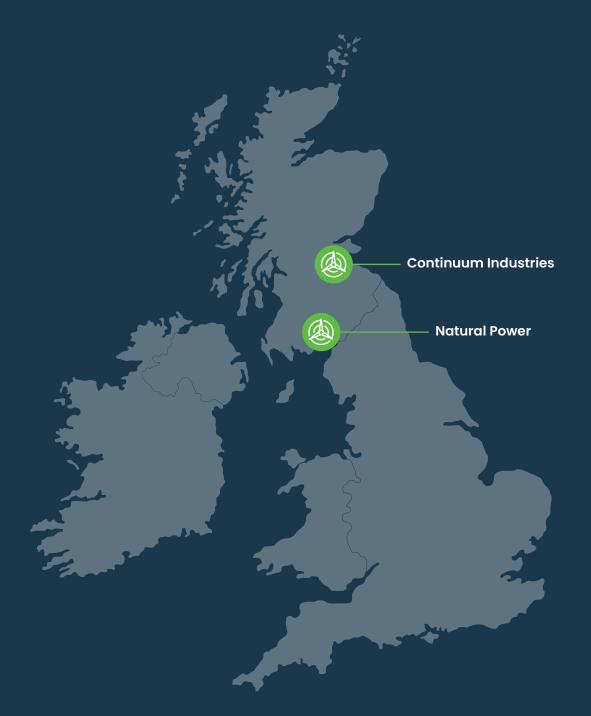
Site Selection & Consenting

Offshore wind, as with any built infrastructure, has some impact on the surrounding environment, which needs to be understood and minimised. In the UK market, some responsibility for environmental stewardship falls on offshore wind developers – who have a duty to demonstrate they have thoroughly consulted local communities and minimised any impact on marine ecosystems. This process can benefit from enhanced technology for collecting data, and smart solutions for its organisation and dissemination. Improving and developing this technology could play a part in accelerating offshore wind developments, alongside the potential for a more organised policy regime in the future. OWGP has played a role in supporting some of this technology, offering dedicated innovation grants for its further development.

The technologies and services in this space are varied. Digitalizing paperwork can improve the way information is collected organised – improving the efficiency of the complex multi-stakeholder consenting process. Meanwhile, novel survey techniques can help developers gain an objective, scientific understanding of the impacts – positive or negative – a particular offshore wind farm will have on its surroundings.

In this section:





natura

Low cost offshore wind survey technique based on environmental DNA (eDNA) analysis power

Natural Power has been operating in the renewable energy sector for over 25 years. Its OWGP-funded project was focussed around demonstrating the validity of a survey method for offshore wind consenting - environmental DNA (eDNA) sampling. By analysing small fragments of DNA found in seawater, this method reveals data on the abundance and distribution of fish species around offshore wind farms. Collecting such information is an important part of environmental impact assessments and compliance monitoring that support the consent of new offshore wind farms.

Impact of the support

OWGP grant funded around 50% of the project costs with Natural Power collaborating with NatureMetrics and EDF Renewables.

Successful trial of eDNA demonstrated several benefits over traditional methods, and generated novel insights that could improve understanding of offshore wind's local environmental effects.

Results of the trial presented and made publicly available in November 2023, with the long-term aim to gain regulatory approval for the method.

A closer look at eDNA sampling

Rather than trawling fish with nets from specialised vessels and manually recording different species, eDNA sampling requires only samples of seawater to be collected from above the seabed. This offers a nonintrusive sampling method, improving the reliability and precision of offshore wind environmental data collection, from a wider range of vessels which can be combined with other site-based surveys and activities.

BUSINESS PROFILE

→ Specialist consultancy and service provider with a sole focus on supporting renewable energy projects.

 \leftrightarrow 25 years of experience advising on offshore wind projects, with expertise from site-selection and consenting to decommissioning / repowering.

International team of >500 headquartered in Scotland.

SUPPORT RECEIVED



GRANT FUNDING

Solutions for the offshore wind industry



OWGP-funded collaborative project looking to demonstrate environmental DNA (eDNA) sampling as a survey method around offshore wind farms, enabling lower-cost, faster and more precise environmental data for consent applications.

Compared with traditional trawl surveys, eDNA sampling requires only small samples of seawater; reducing damage to habitats and eliminating the need for specialised vessels.



How did OWGP's support propel eDNA technology into the Offshore Wind sector?

Before

Natural Power was already a well-established provider in the renewable energy sector, having supported numerous offshore wind projects throughout their lifecycle. Natural Power was seeking partners to trial environmental DNA (eDNA) as a cheaper and more efficient alternative to fish trawls during offshore wind environmental impact assessments and ongoing compliance monitoring.

During

OWGP funded 50% of this collaborative research project costs and supported the team throughout with advice. The project also included NatureMetrics, who provided the eDNA sampling solution, and EDF Renewables, who facilitated a trial around its Blyth Offshore Wind Farm and provided additional funding. During the project, the team compared data on fish biodiversity around the wind farm collected via the eDNA method versus traditional fish trawls. Four surveys were conducted comparing the two methods during a period of 12 months. Due to the project's early success, OWGP provided additional support, with a view to expanding the method to invertebrates and other marine species in the future.

After

The pilot project resulted in successful demonstration of the eDNA method through its proof-of-concept white paper, which was able to capture data on more fish species than traditional trawling. The paper demonstrates that the eDNA methodology developed allows for the calculation of ecological diversity metrics and provides robust data on spatial and seasonal changes in fish communities around OWFs. Compared with trawling, the team was also able to generate more detailed spatial data on the distribution of different fish around the offshore wind farm - including between wind turbines themselves, which are inaccessible to trawl vessels. One interesting finding is a relative abundance of bottom-feeding and reef dwelling species found close to wind turbines, indicating that foundations may provide hard substrate habitats that provide shelter, feeding and nursery grounds for certain species. The promising results of this study are now paving the way for a regulator-approved survey method, which could significantly reduce the cost and risk of delay of environmental surveys required to consent new offshore wind projects.

"

As we rapidly transition to renewable energy sources to help tackle climate change, supply chain resources are under pressure so there's never been a greater need for new technology and practices that help to maximise resources. This study, made possible in part due to OWGP Innovation Grant Funding; demonstrates that eDNA-based surveys offer a market-ready solution to optimise consenting phase surveys of offshore wind site development, as well as ongoing monitoring and targeted mitigation strategies. Regulator and stakeholder acceptance of eDNA methods for use in offshore baseline setting and monitoring will now be a key step towards accelerating and improving environmental monitoring for future offshore wind development.



MICHELLE ELLIOTT Principle Environmental Consultant, Natural Power www.naturalpower.com



Al tools for power and utility transmission planning

Continuum Industries is an AI company accelerating the global energy transition by helping infrastructure developers and utilities to accelerate and de-risk their project planning programmes while minimising the impact on the environment and communities. In the context of offshore wind, their tool, Optioneer, is designed specifically to support the planning of wind farm grid connection options – which can be a significant bottleneck to project development. Their grant from OWGP allowed the company to test and further develop the platform's functionality – focusing on onshore export cable routes and substation construction.

Impact of the support

Tested and released new software functionality for onshore export cable routes and substations to help developers efficiently design their own onshore connections.

OWGP support, alongside overall platform development and a strong commercial strategy, helped Continuum Industries raising £8m Series A capital.

Strategic platform developments to help reach into new horizons in US and Europe.

A closer look at Continuum Industries

The combination of vast computing power, geospatial data, and human intuition unlocks unique insights throughout projects, from conception to completion. This includes generating a shortlist of viable routing options from millions of alternatives in just a matter of hours, real-time iteration of designs as new data arises, recording key decisions and mitigating against unforeseen delays at later stages.

BUSINESS PROFILE



Solutions for the offshore wind industry



The Optioneer tool analyses millions of potential cable routes for Wind Farm grid connection to narrow down the most cost-effective, environmentally conscious options.

User-friendly interactive tool designed for stakeholder engagement during the consenting process.

150+ users to date, with clients including bp-EnBW consortium, Mainstream Renewable Power, Muir Mhòr Offshore Wind Farm.







How did OWGP's support propel Continuum Industries' business into the Offshore Wind sector?

Before

Before OWGP's support, the Company had worked in partnership on a number of power, transmission and utility projects – mostly in Scotland and England. Continuum Industries had seen good uptake for their Optioneer software in the UK, and were growing an engaged customer base in Offshore Wind.

During

The OWGP grant allowed Continuum Industries to test and launch advanced features within Optioneer to empower offshore wind developers to efficiently explore a broader range of onshore export cable route options and substation sites during the early stages of development and consent process. These elements play a pivotal role in the onshore infrastructure necessary for offshore wind projects and significantly impact the success of consent applications for new developments.

After

Expanding Optioneer's functionalities to include onshore export cable routing has not only deepened their integration within customers' organisations, but has also broadened its applicability across various project stages. This strategic enhancement positioned them to seize new contract opportunities and further solidify their presence in the market. Overall development of the platform and a clear commercial strategy helped Continuum to demonstrate growth potential to private investors, raising £8m Series A capital. Continuum Industries now has plans to further expand internationally into the European and the US offshore wind markets.

"

The OWGP grant helped us to strategically allocate resources towards the development of crucial functionalities, dedicated to serving our customers within the offshore wind industry and expanding our reach into new horizons. In the next few years, we aim to bring a complete platform for infrastructure development to our customers. It will build on the foundations of network and project development but continue to support the consenting/permitting process, public consultation, and environmental analysis.



GRZEGORZ MARECKI CEO & Co-founder, Continuum Industries www.continuum.industries



SUPPLY CHAIN IN FOCUS

Manufacturing & Fabrication

Offshore wind turbines are enormous structures, and require large amounts of heavy steel for their construction, transport and maintenance. From foundations and towers, to the industrial equipment required to move turbine components from A to B, the UK supply chain is already bringing its skills into wind farms, but has the potential to do more. Many UK companies have transferrable capability other heavy industries such as civil engineering projects, oil & gas, nuclear, aerospace and rail.

OWGP has helped to improve the capability of Companies in UK manufacturing in multiple ways. Our business transformation programmes have helped companies improve their own supply chains and manufacturing processes, ultimately lowering costs. We have also offered grant funding that has helped invest in new technology or adapt existing capability to the needs of offshore wind.

Targeted support has already resulted in some significant wins for participating companies, who have started securing more contracts in the offshore wind sector – both in the UK, and in the emerging global market.

In this section: Cambridge Vacuum Engineering



CASC





Innovative welding method for large steel structures in offshore wind

Cambridge Vacuum Engineering (CVE) is the only Company based in the UK that manufacture electron beam welders – a technology that allows for 20-30x faster fabrication of large steel structures compared to conventional methods, with lower energy use and carbon emissions. This application has already proven successful in the energy industry, with CVE applying electron beam welding to the development of nuclear reactor vessels.

Impact of the support

Allowed CVE to develop and modify their Ebflow electron beam welding solution for the fabrication of offshore wind foundations and towers.

Paired CVE with Global Energy Group to trial the technology, and integrate Ebflow welding into their planned UK offshore wind tower facility.

Commercial partnership and ongoing support from OWGP is paving the way for accelerated commercial deployment in the UK.

A closer look at CVE

In 2020, OWGP provided grant funding to accelerate the adoption of Ebflow for offshore wind fabrication in the UK, where it has potential to offer developers and OEMs significant cost and schedule savings for increasingly large offshore wind turbine components.

BUSINESS PROFILE

- Welding technology Company headquartered in Cambridgeshire
- 60-year history of welding in automotive, aerospace, nuclear, defence and electronics
- ↔ Looking to establish electron beam welding technology (Ebflow) to the fabrication of large steel structures in offshore wind with potential for significant cost and energy savings.

SUPPORT RECEIVED



Solutions for the offshore wind industry



Ebflow electron beam welding offers 20-30x faster welding for large steel structures than conventional welding methods (e.g. slow arc welding).

Up to 20% lower cost than conventional welding.

Up to 90% lower energy use and carbon emissions than conventional welding.





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

Before

CVE has a 60-year history in the manufacture of welding equipment with numerous applications. They are now looking at the opportunities presented by the energy transition – with key applications for vacuum welding in offshore wind, electric vehicles and semiconductors.

During

CVE had been developing the Ebflow solution for offshore wind for around ten years; the OWGP grant was focussed on accelerating its commercial uptake in the UK market. OWGP remained flexible during the project, adapting to the demands of developing a standardized commercial product – for example, by adapting the initial project scope from circular seam to flat plate welding. With OWGP support, Global Energy Group were selected as industrial partners to help prepare Ebflow for a commercial trial; the aim is to eventually deploy electron beam welding at a planned offshore wind tower manufacturing facility at the Port of Nigg.

After

Global Energy Group (GEG) plan to integrate CVE's welding technology into its £110m Port of Nigg tower manufacturing facility upon completion, expected 2024. In a separate but complementary project, CVE's Ebflow technique has been chosen by SSE Renewables, Sif group and TWI to manufacture the world's first electron beamwelded monopile in an InnovateUK-funded trial. In 2023, this monopile was deployed at Dogger Bank offshore wind farm with the aim to secure industry approval. Alongside this trial of Ebflow at Dogger Bank wind farm, ongoing conversations around industry certification and the continued partnership with OWGP and GEG, CVE are making progress towards commercialisation of a potentially game-changing manufacturing technique for offshore wind, and deploying it in the UK first.

"

Ebflow is a disruptive technology that has been in development for 10 years. It is a major breakthrough in thick section, large structure welding and it has applications in a wide range of industries. The OWGP grant, in conjunction with the RapidWeld project, has the potential to provide a significant step towards the Offshore Wind Sector Deal's ambition of increasing the UK content of UK offshore wind farms to 60% by 2030. We are excited about the collaboration with GEG, who have demonstrated willingness to adopt new advanced manufacturing processes and are perfectly positioned to integrate this technology into their newly installed manufacturing set-up. Throughout the ongoing programme, we've had excellent support from OWGP. They've been very flexible in the approach allowing us to modify our program to meet industry requirements. 77



CHRIS PUNSHON Head of New Energy Applications, Cambridge Vacuum Engineering www.camvaceng.com



Design, engineering, fabrication and installation for offshore wind components and equipment

Hutchinson are an employee-owned UK business, established in 1979 with a focus on the local petrochemical industry. They now also have a strong capability in the UK wind energy sector – as well as rail, nuclear, telecommunications and other infrastructure. They are currently the only UK-based manufacturer of steel towers for onshore wind farms, and are a leading supplier of construction equipment and internal platforms for offshore wind farms. With a quayside manufacturing facility near Liverpool, Hutchinson have expertise in computer aided design, serial manufacture of steel products, welding, plate rolling and surface treatment.

Impact of the support

Achieved 5% and 20% cost reduction for two major offshore wind customers.

Grew staff headcount by 25%, and engaged in a number of new employee training and development initiatives.

Development of Sales Pipeline management and Strategy Delivery tools.

A closer look at Hutchinson Engineering

Hutchinson Engineering started working with OWGP on the Sharing in Growth Offshore Wind Programme (SiG) in 2021. The SiG programme helped Hutchinson to analyse and optimise their strategic planning, supply chain and manufacturing processes. OWGP's advice prompted them to invest in new manufacturing equipment and automation – bringing key manufacturing steps in-house, saving significant time and cost. The SiG programme also helped Hutchinson to improve their productivity through staff engagement, sharpening governance and offering training programmes – giving employees a chance to upskill and contribute more fully to the organisation.



BUSINESS PROFILE



Solutions for the offshore wind industry



50% growth since 2021 - in large part due to offshore wind.

Manufactured internal platforms for Hornsea 2 offshore wind farm.

Working closely with Offshore Energy Alliance cluster to promote regional supply chain opportunities.





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

Before

Before engaging with OWGP, the business was performing reasonably well, and had achieved some success in supplying to the Offshore Wind sector, but was looking for opportunity to expand further into the sector. The challenge was to identify suitable opportunities that could be delivered from the UK and to improve the businesses' competitive position.

During

Hutchinson have been part of the Sharing in Growth Offshore Wind Programme since July 2021 and in this time have made significant improvements across multiple areas of their business. OWGP have worked with Hutchinson to set a target of reducing costs to customers by 10% by 2025, and are already on their way to achieving this goal.

After

Hutchinson continue to work with OWGP; their engagement to date has contributed to significant growth in both their capability and reputation in the offshore wind sector. Cost savings have made the Company more competitive, and these savings and efficiency gains have been passed onto key customers in the offshore wind sector. Within the Company, employee engagement in business improvement activity has increased significantly, enabled by targeted training and SiG-Coach involvement. In 2023, Hutchinson joined the Offshore Energy Alliance cluster to promote offshore wind supply chain opportunities across North Wales and Northwest England, taking on a leading role in championing the sector locally.

"

Our improvement activities under the Offshore Wind Growth Partnership Business Transformation Programme have enabled us to provide our customer with a cost reduction of 5% over the previous project phase delivered six months earlier, in an environment of rising costs. An excellent example of what can be achieved by the UK supply chain, and we're not done yet – with further cost reduction initiatives ongoing towards our target of 10% by 2025.



STEVE ADAMS Managing Director, Hutchinson Engineering www.hutchinsonengineering.co.uk

Site mobilisation services, component design and manufacture for the renewables and engineering sectors

CASC used the funding from OWGP for a capital expenditure purchase of two pieces of manufacturing equipment critical to expanding the company's engineering capabilities. The tube laser allows CASC to work with 3D metal profiles to manufacture structures such as staircases and platforms, while the secondary flatbed laser further improves CASC's capacity to manufacture components for site operations.

Impact of the support

Enhanced the company's offering by expanding its engineering capablities.

Unlocked potential of export market.

Created 120 jobs.

A closer look at CASC

The new equipment will facilitate CASC's growth plans within Offshore Wind by allowing the company to offer clients a more diverse range of products and services, such as frames, platforms and walkways. It will also boost CASC's exports by increasing the company's capacity to quickly resolve issues on site through the provision of its own manufactured components.



BUSINESS PROFILE



Solutions for the offshore wind industry

Tube lasers save up to 83% manufacturing time in comparison to traditional manufacturing methods.

Improved precision, versatility and efficiency of laser cutting saves costs for clients.

In-house capabilities to design, manufacture and install both flat and 3D profiles of various materials up to 200mm thickness.





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

Before

Prior to engaging with OWGP, CASC had a strong reputation in Offshore Wind having already worked on multiple projects in the sector. Encouraged by consultations with original equipment manufacturers (OEMs) and in line with the company's growth plans, CASC was seeking to upscale the scope of its offering beyond site mobilisation to include the design and manufacture of components for the sector.

During

Having approached OWGP for the competitive Development Grant in November 2020, CASC secured the funding in March 2021 and purchased a tube laser and flatbed laser to complement the company's existing suite of cutting tools. The new equipment arrived and was installed in January 2022.

After

With a more diverse portfolio of products and services, CASC is now well positioned to secure projects of enhanced scope. The company has already manufactured and delivered components made by the new equipment to Offshore Wind customers across the globe, and is experiencing growing demand. CASC now has an unrivalled suite of technology, featuring a range of cutting, friction drilling and tapping benefits ideal to meeting the needs of the global Offshore Wind sector.

"

We are an ambitious and driven company with extensive growth plans in Offshore Wind energy. The funding from OWGP has helped us take the next vital step in our development – ensuring we stay relevant and viable in a fiercely competitive, rapidly changing sector.



KARL CROCKARD Managing Director, CASC Limited www.casconline.co.uk



SUPPLY CHAIN IN FOCUS

Operations & Maintenance

Once offshore wind farms are up and running, they supply low cost and zero emissions power to the electricity grid for decades. However, the story does not end there. Offshore wind farms require teams to carry out maintenance, finding any faults and maximising the amount of energy turbines produce. It is not only the wind farms that need looking after, but also the teams of skilled workers and technicians who spend time offshore, and the vessels and equipment they use.



ELIM

The world's first unmanned and semi-autonomous rescue vessels

Zelim won grant funding from OWGP to undertake commercialisation tests of its patented overboard recovery solution, enabling the business to secure customer demonstrators with both a crew transfer vessel (CTV) operator and an offshore wind farm owner operator, and deepen its relationship with wind farm original equipment manufacturers (OEMs).

Impact of the support

Completed proof of concept for next generation person overboard detection system.

Established a safety case for the technology in an operational Offshore Wind farm.

Raised the company's profile within the Offshore Wind industry and potential investors.

A closer look at Zelim

Zelim's patented overboard recovery system sets a new benchmark in safety, providing the ability to recover people from the water in seconds with a single operator. Where other solutions are slower at getting people out of the water and challenging to operate alone, Zelim provides unrivaled speed and single handed or autonomous solutions.

BUSINESS PROFILE



 \Leftrightarrow Start-up in technology development phase.

→ < 15 employees.</p>

SUPPORT RECEIVED

Solutions for the offshore wind industry



Immediately deployable unmanned rescue crafts reduce risk to rescue crews.

Deliver blanket health and safety overage across a wind farm.

Frees up resources for operations and maintenance activity.





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

Before

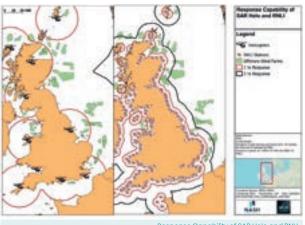
Prior to working with OWGP, Zelim had engaged with other enabling organisations and programmes to support growth in Offshore Wind such as ORE Catapult's Launch Academy and had successfully secured innovation funding to support earlier stages of the technology's development.

During

With OWGP's support, Zelim completed commercialisation testing of its patented overboard recovery solution which enabled the business to create evidence of the technology's capabilities and impact. This evidence was instrumental in Zelim's communications and business development work to secure customer demonstrators with both a CTV operator and an Offshore Wind farm owner operator and deepening Zelim's relationship with wind farm OEMs.

After

Upon completion of the project, Zelim reached technology readiness level 8 (TRL8) with its technology, a critical step in the pathway to commercialisation. Zelim found that its association to OWGP provided significant credibility in the Offshore Wind market, raising its profile within the industry and with potential investors.



esponse Capability of SAR Helo and RNLI.

"

Working with OWGP has been a great experience, both logistically and from an industry engagement perspective, where we have had access to industry support throughout the duration of our project; helping to make sure that we develop products that are fit for the market.

Overall, we are looking to continue and deepen our relationship with OWGP and would encourage any other companies looking to get into Offshore Wind to apply. **7**7



SAM MAYALL CEO, Zelim www.zelim.co

Driving safety and efficiency in operations and maintenance through applied AI technologies

Cognitive successfully won grant funding from OWGP to develop its core technology and sought to undertake the WEST business transformation programme, which helped to build a long-term future for the business within the Offshore Wind market.

Impact of the support

Enabled Cognitive to develop its core technology product, WAVES.

Secured contracts, now supporting 6% of the UK's Offshore Wind capacity.

Developed a product roadmap to expand the business.

A closer look at Cognitive

Cognitive exists to apply the capabilities of machine learning to improve the performance of assets and health and safety across the energy industry.

Cognitive's leading product for the Offshore Wind sector, WAVES, serves to make the maintenance of Offshore Wind assets safer and more efficient through the use of AI.

A particular area where WAVES provides assistance is in the planning of crew transfers. The machine learning assists with ensuring transfers happen at the optimum time to ensure maintenance crew's safety.

BUSINESS PROFILE



- \leftrightarrow Applied-AI specialists.
- \Rightarrow Early-stage start-up < five employees.

SUPPORT RECEIVED



BUSINESS TRANSFORMATION

Solutions for the offshore wind industry

Supporting 6% of the UK's Offshore Wind sector.

WAVES saves wind farms over £1M per GWh annually.

Technology improves operations and maintenance and health and safety.





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

Before

Cognitive was founded in 2018 by three ex E.ON and Uniper employees with the goal of advancing machine learning capabilities, to drive efficiency and safety in the energy sector.

The team at Cognitive had the passion, the expertise and the skillset needed to make their vision a success, but they lacked funding to build products like WAVES. The team found OWGP through the Offshore Renewable Energy (ORE) Catapult network and successfully applied for two rounds of grant funding support.

During

In 2019, OWGP awarded Cognitive £70,000 to develop the WAVES technology and upon successful completion of its beta product, the business was awarded a second grant in 2020 of £57,000 for further innovation to access wider markets.

The Cognitive founders recognised that they would benefit from sector specific business development support and successfully applied to join the three-month OWGP business transformation programme, WEST.

During the programme Cognitive worked on a one-to-one basis with OWGP's consultant partners to analyse each of the Offshore Wind markets it was planning to enter, and explored other opportunities in Offshore Wind to inform and develop a long-term product roadmap and business strategy.

After

The early-stage funding and business development support provided by OWGP enabled Cognitive to get its WAVES product from concept stage to minimum viable product (MVP), with a clear go-to-market strategy.

Cognitive went on to secure a contract with RWE to develop its WAVES technology further and, at time of writing, WAVES is supporting 6% of the UK's Offshore Wind capacity.

"

It's hugely helpful to have a dedicated source of funding to bring innovative ideas to life for the Offshore Wind industry. Without OWGP's support, it would have taken much longer to develop the WAVES product.



TY BURRIDGE-OAKLAND Founder and Managing Director, Cognitive



Engineering firm and leading provider of fastener inspection services to the wind sector

The funding enabled EchoBolt to develop a customer version of its bolt integrity analysis software, BoltWatch, giving customers immediate visibility of asset health. Working with energy giant RWE's operations engineers, EchoBolt was able to design a tailored product specific to the needs of the Offshore Wind market and provide a platform to perform EchoBolt inspections at customers' sites.

Impact of the support

Commercial licensing of EchoBolt's ultrasonic bolt inspection software, BoltWatch.

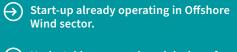
Expansion of contracts to cover more than 20% of the UK's Offshore Wind capacity in 2022.

Estimated 30% increase in turnover for the next 12 months.

A closer look at EchoBolt

Bolt tightening is the single biggest scheduled maintenance task in Offshore Wind operations. EchoBolt's innovative software, BoltWatch, removes this time-consuming and expensive process by allowing customers to view the status of their assets in real-time and retrospectively, using a digital analytics platform accessed via a cloud portal. Working with major players across the Offshore Wind sector, EchoBolt has drastically improved maintenance practices by removing costly re-torquing maintenance tasks, validating asset integrity and confirming the effectiveness of installation practices.

BUSINESS PROFILE



 Undertaking research and design of BoltWatch software technology.

Actively seeking a different delivery model to bring BoltWatch to a larger market.

SUPPORT RECEIVED

GRANT FUNDING

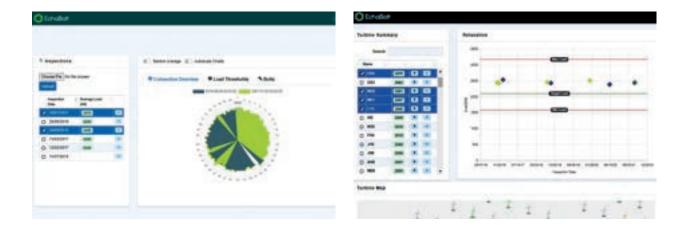
Solutions for the offshore wind industry



Reduces maintenance costs of wind turbines by over 80%.

Results in decreased downtime and higher revenue for operators.

Improves operators' health and safety performance by reducing the duration of annual asset maintenance and eliminating risks with hydraulic tooling.





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

Before

Prior to engaging with OWGP, EchoBolt was a start-up SME operating in the Offshore Wind sector. The company conducted routine on-site inspections for clients, followed by periodic reporting of asset integrity.

EchoBolt sought access to a larger share of the market with its ultrasonic inspection technology, BoltWatch – an internal data analysis software tool without a customer interface.

During

After securing funding through OWGP's grant funding programme, EchoBolt embarked on a project with ORE Catapult to conduct a market assessment and cost reduction analysis of its inspection technology, clearly identifying the requirements to facilitate a self-perform feature for customers as a value driver for its growth. Working with major players across the renewables sector including RWE and SSE Renewables, user requirements were mapped and software development targeted to overcome customer pain points, resulting in a software product truly optimised for the sector.

After

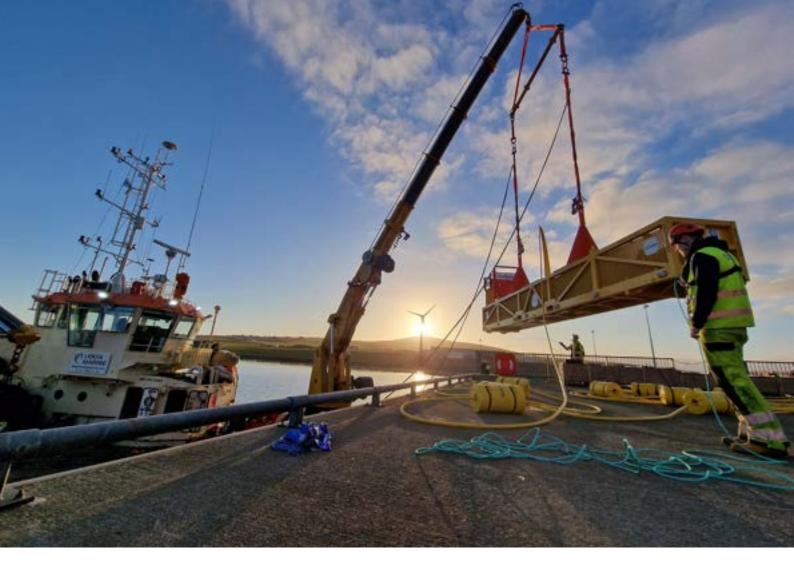
OWGP's support has been instrumental in enabling EchoBolt to license its services. The company has since won significant new business, leading to an estimated 30% increase in turnover for the coming year, and a projected 300% increase over the next five years. The company has also entered into a partnership with a leading global engineering company, Worley, which will deliver EchoBolt's services alongside its holistic asset management service offering.

"

Support from OWGP has been invaluable in supporting EchoBolt's growth. Through the development of the BoltWatch asset health platform, we can now support customers delivering EchoBolt technology directly, and have been able to embed our technology within strategic partner service offerings.



PETE ANDREWS Managing Director, Echobolt www.echobolt.co.uk



SUPPLY CHAIN IN FOCUS

Improving Performance and Reliability

Offshore wind farms are significant investments, and therefore it pays to maximise the amount of power that can be generated, reduce running costs as much as possible, and to maximise the operational lifetime of offshore wind assets. There are many disruptive ways this can be done – whether it be automation and digitalization, developing new equipment to protect offshore wind farms and teams against the elements, or electrification and on-site energy storage for offshore wind operations.

OWGP runs regular grant funding opportunities to support these companies and help them to grow, so that offshore wind can generate more reliable power, and developers can get more value from their assets.

In this section:







A centralised cloud-based system to manage offshore wind operations and construction

Sennen successfully won grant funding to develop its core technology, expanding its capabilities as a management tool for single site windfarm operations to cover multi-site operations. This is a key development to enable the business to scale.

Impact of the support

Propelled the business to win contracts with large portfolio operators.

Helped to double the company's turnover in a year.

Headcount more than doubled since OWGP engagement.

A closer look at Sennen

Sennen provides software for renewable energy market leaders putting data at the heart of its asset management strategy.

Sennen delivers a software system that is fully scalable across wind farm operations of all sizes and is a market leading solution in improving the operational efficiency and safety of wind farms.



BUSINESS PROFILE



Team of 19, based in Bristol.

SUPPORT RECEIVED



Solutions for the offshore wind industry



Market leading software for multi site offshore wind operations.

Improves operational efficiency and safety of offshore wind operations.

O&M tool selected by EDF Renewables for its global offshore wind portfolio.

Construction tool currently being trialled by Ørsted for its South Fork Wind farm, USA.





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

Before

In early 2020, Sennen knew there was an urgent need for its technology in the Offshore Wind sector. Wind farm operators with multi-site operations were using multiple management tools to monitor their sites and struggling to obtain a detailed overview of their operations. Swamped with incomparable data, it was complicated and time consuming for operators to understand where they should focus resources to mitigate losses and improve operating efficiency.

The marketplace was flooded with technologies that solved problems in isolation, but no single provider was able to give operators sight of the big picture. Sennen knew how to do this but sought a cash injection for the business to develop its technology to offer multi-site capability.

During

OWGP provided Sennen with two separate funding grants over a 12-month period.

The first grant in 2020 of £37,000 enabled Sennen to initiate – in partnership with a large offshore wind farm – development of a ground-breaking system to measure and minimise lost production from turbine downtime. This project gave Sennen the opportunity to showcase its technology and win a critical contract with a major utility.

A second grant in 2021 allowed Sennen to develop its offshore management system to perform across multisite wind farm operations and provide a competitive management solution for wind farm operations of the largest scale.

After

The funding support Sennen received from OWGP has been a catalyst for significant business growth.

In the same year as awarding Sennen the second grant fund, the company secured a contract with European energy giant EDF Renewables.

Sennen has since expanded its initial offering from operations and maintenance to the management of offshore wind construction - where its software can be used to keep track of multiple teams and contractors. In 2023, Sennen won a contract with Ørsted to work on the construction of its South Fork wind farm in the USA.

"

OWGP's grant funding has been critical in moving our business forward. It enabled us to commit to the project and get prototypes into the hands of the big utilities.

We have been able to test our hypothesis while cushioning the risk. We're now winning contracts with large scale operators as a result.



GABY AMIEL Co-Founder and CEO, Sennen www.sennen.tech



Floating 5G network to keep offshore wind farms connected

High-speed wireless connections are required to transmit data from wind farms to the shore – including on wind speeds and from vessels to keep operation and construction teams safe and connected. However, with wind farms located increasingly far from shore, areas with limited internet connection make this increasingly challenging. JET Connectivity performed a market study with ScottishPower renewables, which confirmed the need for high-speed internet connection at remote offshore wind farms. To resolve this, JET Connectivity are aiming to develop a 5G network at sea by deploying floating buoys to collect and transmit data at remote offshore locations.

Impact of the support

Exceeded headcount growth prediction, with employee count growing from 3 to 25 since OWGP engagement.

Grant helped enable the initial design of the company's floating 5G buoy.

A pilot 5G floating buoy has now been built, and is being tested in a trial with Offshore Renewable Energy Catapult and the Great Lincolnshire Local Enterprise Partnership.

A closer look at JET Connectivity

OWGP Grant funding allowed JET Connectivity to build a business with traction in the offshore wind sector, and supported development of their platforms, which are now being tested at the Lynn and Dowsing offshore wind farm.



BUSINESS PROFILE





Solutions for the offshore wind industry



First-of-kind 5G floating platform to provide connectivity prior to the installation of offshore fibre, with secondary use cases for weather measurements.

Vision for faster communication networks to support environmental assessments, surveying and installation of offshore wind farms in deeper waters – providing realtime data and visibility.

5G buoy currently undergoing a pilot at the Lynn and Inner Dowsing offshore wind farm – seeking further wind farms to partner with.



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

Before

Before applying for support from OWGP, JET Connectivity had only recently founded with just three full time employees. The company had a vision for connected offshore infrastructure, and had engaged key offshore wind farm developers to understand the needs of the market. However, the company had limited funds available to make its vision a reality, so began seeking out industry support programmes. JET Connectivity applied for a grant with OWGP to help design and develop its 5G floating buoy.

During

The initial grant funding provided in 2020 supported JET Connectivity to design a floating buoy that could connect to 5G and host its communications network. In 2023, OWGP provided an additional grant to JET Connectivity to develop a tool for weather measurement to support site selection and offshore wind operations. Throughout both projects, OWGP helped the Company to gain visibility in the offshore wind industry, which has been key to making new industry contacts and growing the company almost ten-fold in size.

After

JET Connectivity's 5G floating buoy is now being tested in a trial with Offshore Renewable Energy Catapult and the Great Lincolnshire Local Enterprise Partnership at the Lynn and Dowsing offshore wind farm. This pilot project will allow both developers and supply chain companies to connect to JET Connectivity's network, trialling new digital solutions at a real offshore wind farm. OWGP's development grant was one of the key enablers in moving JET Connectivity from the ideation stage to a pilot phase. The company is now ready to actively seek partnerships with wind farm developers and software companies.

"

OWGP has supported us not just through funding, but their knowledge and connections provided us with access to market and credibility within the industry. This extensive support has been a key enabler in moving our product from a vision into the pilot phase. We are now in conversations with both offshore wind developers and software companies, exploring potential partnerships for next generation offshore wind farms.



JAMES THOMAS CEO, JET Connectivity www.jet-eng.co.uk

A leader in intelligent management and energy storage to decarbonise offshore wind O&M

Verlume successfully secured grant funding from OWGP's 2020 Cross Sector Support Call and were paired with delivery partner Xodus, a leading offshore energy consultancy providing technical, engineering and commercial support. Verlume and Xodus worked together for nine months to investigate how Verlume's technology could be applied to the Offshore Wind market.

Impact of the support

In a position to approach industry with a clear solution.

Now engaged with a number of operators to assess opportunities for their technology in Offshore Wind farms.

Built credibility and relationships with key contacts in the sector.

A closer look at Verlume

Verlume's Halo technology is a scalable, modular battery energy storage system with integrated intelligent energy management, specifically developed for clean power delivery in the demanding underwater environment.

The funding enabled Verlume to develop the technical specification for an Intelligent Wind Energy Storage (IWES) platform. This will be a battery energy storage solution, packaged for the harsh offshore environment, subsea or within the tower or substation, a much needed solution to transition offshore wind farms away from diesel generators.

BUSINESS PROFILE



- Active in the marine renewables and oil and gas sector, looking to expand into Offshore Wind.
- Saw an opportunity to improve energy storage in marine renewables.

SUPPORT RECEIVED



Solutions for the offshore wind industry



Intelligent energy management and energy storage technologies for the energy industry.

Underwater, offshore and onshore <u>solutions</u> to decarbonise operations.

Energy management and battery storage system chosen by RWE for 760MW OranjeWind project.





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

Before

Prior to OWGP's support Verlume, formerly EC-OG, wasexploring the wider offshore renewables sector, specifically looking at ways in which its technology could bring efficiencies and mass decarbonisation in the sector.

Verlume was confident that there was a significant opportunity for its business in the Offshore Wind space for its already commercialised energy storage systems but sought deeper market insight and funding to further identify a use case.

During

Over nine months, Verlume and Xodus worked together to better understand how Verlume's Halo technology – a scalable, modular battery energy storage system with integrated intelligent energy management, specifically developed for clean power delivery in the demanding underwater environment – could be used in the Offshore Wind market.

With Xodus's market and engineering expertise, the company focussed on how Verlume's technology could be applied, what the business case was and the fundamentals required to enable Verlume to confidently approach potential customers in the Offshore Wind sector.

The project culminated in a report which found that the Verlume energy storage system could be utilised as an alternative for diesel backup generators for Offshore Wind sites. Systems would be able to charge up when there is an excess of wind and then discharge when there is no wind. The report highlighted that the work being carried out was needed for the sector, and commercially highlighted areas of the system that needed to be optimised.

After

The OWGP supported project put Verlume in a position where they could approach potential customers with a strong concept and business case with a solution to decarbonise their Offshore Wind operations.

In 2023, this engagement resulted in a major contract win with RWE. Verlume is now working with RWE to integrate battery storage and energy management systems into the developer's 760MW wind farm OranjeWind in the Dutch North Sea.

Verlume continue to engage with a number of Offshore Wind operators, looking at how they can use its products in future offshore wind farms.

"

With Offshore Wind being an important target growth market for our business, the Offshore Wind Growth Partnership's programme has been fundamental for building our credibility in this area and has helped to facilitate relationships with key contacts at wind operators.



RICHARD KNOX Managing Director, Verlume www.verlume.world



SUPPLY CHAIN IN FOCUS

The Future is Floating

Floating wind is an emerging technology and significant growth area, where the UK has the potential to be world leader. Our recent report with the offshore wind industry council (OWIC) shows that it is a market with £55 billion potential upside for the UK economy over the next few decades.

The UK developed the world's first floating wind farms – HyWind Scotland and Kincardine – both off the East Coast of Scotland. There are already several UK companies manufacturing floating platforms upon which turbines are placed, and OWGP has offered grant funding and support to help with some of these.

In addition to new engineering challenges, floating wind also presents new operational considerations for the supply chain and developers to address. Without being fixed to the seabed, floating wind allows for wind farms in much deeper water with stronger winds – in increasingly remote locations. Floating wind could therefore benefit from new technologies that will keep these sites safe and connected.

In this section:



Marine Power Systems



apollo

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



Significant experience in fixed-bottom structures.



SUPPORT RECEIVED



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.





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



Modular floating platform for industrial-scale floating offshore wind

Marine Power Systems (MPS) provides technology for maximising energy extraction using offshore wind, power delivered from a flexible, modular low-cost floating platform, PelaFlex. MPS is focused on sites deeper than ~60m offshore, where fixed-bottom wind is not economical.

Impact of the support

Strengthened the company's commercial strategy leading to several offshore wind MOUs and collaboration agreements with energy developers, EPC's and engineering companies worldwide.

Pelaflex platform received feasibility Certification from DNV in September 2023, thanks in part to ongoing OWGP support.

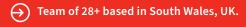
Seen headcount grow by 10%.

A closer look at MPS

MPS have intellectual property rights for the floating structure MPS also have manufacture, fabrication, assembly, deployment, installation and operational knowhow, plus significant engagement with the global supply chain and port infrastructure to minimise cost, maximise local content and accelerate development timelines.



BUSINESS PROFILE





industrial-scale floating offshore wind in mind.

SUPPORT RECEIVED



BUSINESS TRANSFORMATION



PelaFlex modular platform design has only four distinct primary steel parts, enabling simple logistics, fast assembly, and alignment with local supply chains.

Tension-legged platform design delivers a high degree of system stability, minimal seabed footprint, and zero tilt, reducing the wear and tear on the turbine.

Low overall mass and zero tilt maximises energy yields, allows for simple installation using standard vessels and increases operation and maintenance weather windows.





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

Before

MPS were steadily developing a fabrication and assembly strategy for the PelaFlex platform and cost model while simultaneously looking for ways to accelerate and refine the process with improved outcomes, after an extensive review of various possibilities MPS decided to partner with OWGP via Xodus on the WEST programme as this offered a good pathway to move forward.

During

OWGP partnered Marine Power Systems with Xodus on the WEST programme, which supported Marine Power Systems with a template to further develop a fabrication and assembly strategy for their PelaFlex platform, particularly the programme accelerated the development of a detailed model improving cost accuracy enhancing the MPS business model of delivering a low cost finished platform to the quay side.

After

Thanks to OWGP support and a strong commercial strategy, MPS have entered into partnerships and MOUs with researchers, engineering companies, EPC's, Ports and offshore wind developers worldwide. These include RWE in the Celtic Sea, SimplyBlue Group in Northern Ireland, the European Marine Energy Centre in Orkney, Biscay Marine Energy platform in Spain (BiMEP), and JGC Group in Japan.

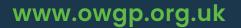
MPS are planning to commence our megawatt scale demonstrator in BiMEP during 2024 with completion scheduled for late 2025.

"

The support received from the OWGP WEST programme assisted MPS in gaining enhanced industry traction not just in the UK but also Europe and globally.



DR GARETH STOCKTON CEO, Marine Power Systems www.marinepowersystems.co.uk





Funded by OffshoreWind IndustryCouncil



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