



ExoReef, the smart environmental solution to scour protection for offshore wind farms

BUSINESS PROFILE

- ➔ Pioneers in sustainable marine innovation with market solutions like Greening the Grey® technology, fostering marine biodiversity and habitat restoration, GeoBlock®, repurposing waste materials into nature-inclusive products and offering Creativity is in our nature®, custom solutions.
- ➔ Exo collaborate with key industry players such as the Environment Agency, CEFAS, Southend City Council, The Rich North Sea, Total Energies EP Nederland, ORE Catapult, Hiraeth Energy.

SUPPORT RECEIVED

- 🔄 Business Transformation
- £ Funding Support

Solutions for the offshore wind industry



Exo Engineering supports the offshore wind sector by providing practical, sustainable solutions that integrate ecological considerations into project development.

Nature inclusive solutions offer scalable scour protection systems in line with rapidly developing marine environmental policies and requirements.

Its innovative GeoBlock® and Greening the Grey® technologies offers methods for recycling dredged materials into products that promote marine biodiversity.

Since 2014, Exo has been providing cutting-edge solutions to the freshwater and marine industries, blending innovative technologies like Greening the Grey® and GeoBlock® with extensive expertise in habitat restoration and environmental consultancy. Exo Engineering provide bespoke nature inclusive designs for coastal and offshore applications, which protect infrastructure from scour, whilst also providing thriving reef habitats.



Impact of the support

Created 3 new jobs in the offshore wind sector.

Increased revenue and are currently looking to export more of their products internationally.

Developed a range of new smart, nature inclusive products into the offshore wind market including, ExoSphere, ExoHedron, ExoMat, ExoAnchor, ExoReef and ExoRock.

A closer look at nature-inclusive scour protection

With a growing market demand for sustainable solutions to address global biodiversity loss, climate change, and plastic pollution, Exo developed an environmentally friendly approach to scour protection. These products leverage Exo's technologies to create complex surface textures and habitat features which allow reef ecosystems to become established and thrive, ensuring developers can meet their biodiversity targets.

Before

In 2019, Exo Environmental began developing its first ecologically enhanced scour protection for turbine monopiles and cable routes, supported by a GTI grant. Initial R&D brought the technology to TRL7. By 2022 Exo Engineering Int. Ltd was split off as a separate entity with the sole purpose of developing and manufacturing Nature Inclusive Design solutions for the marine environment. Exo aimed to advance to TRL8, transitioning from prototypes to pre-production with an aim to improve offshore wind foundations' ecological impact.

To support this next step, Exo Engineering applied for an OWGP Development Grant to study the industrial-scale production and deployment of its Nature Inclusive products. The project aimed to demonstrate the feasibility of manufacturing, transporting, and deploying these units at scale, culminating in a full-scale pilot in an operational environment.

During

The project focused on key milestones, including research, product design, facility engineering, and deployment trials, managed through collaboration with universities, contractors, and wind farm developers. Exo allocated resources to enhance manufacturing capabilities, expand its team, and foster partnerships to address industry challenges like decommissioning and ecological shifting baseline syndrome. These efforts have laid the groundwork for future opportunities in offshore wind.

During the project, Exo leveraged insights gained from their previous engagement with the OWGP WEST programme, which provided biodiversity market analysis, regulatory guidance, and a comprehensive understanding of offshore wind projects and scour protection needs in the UK.

After

Through the OWGP backed Living Windfarms Project, currently underway, Exo has enjoyed significant growth in size and IP. Not only will this support the production and deployment of existing Nature Inclusive products but also pave the way for the development of new products and intellectual property. The company has gone from having 1 concept at TRL7 to having 5 commercially available products at TRL8 & 9. At present, Exo are poised for expansion into international markets, including Canada, the Dutch North Sea and Taiwan.



Since working with OWGP on the WEST programme Exo has achieved significant traction in the offshore wind industry. Having gained a solid understanding off the industry through the WEST programme, Exo has gone on to lead projects in the sector with the Living Windfarms Project with further OWGP support. Thanks to this, Exo has been able to bring a suite of Nature Inclusive scour protection systems from concept stage to commercialisation.



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