

Sustainable subsea solutions for the future of offshore wind

As offshore wind projects expand in scale and complexity, new approaches to subsea protection are emerging. Combining long-term durability, environmental sensitivity and engineering innovation, these solutions are helping to stabilise infrastructure, protect marine ecosystems and accelerate the shift to renewable energy.



The original patented Kyowa Filter Unit® Rockbag provides a long-term, maintenance-free solution for safeguarding the subsea assets of offshore wind farm developments. Constructed from 100% Japanese recycled ultra-clean PET (rPET), it offers exceptional flexibility, making it highly adaptable to complex marine projects.

Ridgeway Rockbags are engineered to withstand high-flow velocities due to their porous design, making them the ideal solution for protecting subsea foundations and cables.

Currently, Van Oord is using Rockbags for CPS cable works at RWE's Sofia Offshore Wind Farm in the North Sea from its base at the Port of Blyth. This project is part of the

Dogger Bank offshore wind development, located 195 km off the UK's East Coast, covering an area of 593 square kilometres. The development will consist of 100 turbines, each with a 14 MW capacity, totalling 14 GW of installed power. Scheduled for commissioning in 2026, the wind farm is expected to supply clean energy to 1.2 million UK homes, significantly contributing to the UK's 2030 clean power target.



Ridgeway collaborated closely with Van Oord from the beginning, providing engineering guidance on the stability of the Rockbags from the site's metocean parameters, with support from their Japanese engineers. While the project had several significant milestones, one key achievement was the introduction of the newly commissioned 12 t Offshore S-type Rockbags, marking the first use of this model,

alongside the already proven and high-performing 8 t Offshore S-type Rockbags.

Due to the intense tidal and wave forces impacting the CPS structures, Van Oord specified a heavier Rockbag to withstand the increased flow rates generated by the monopile structure. This involved using a 200-400 mm high-density Hyperite material

within the Rockbags to provide additional ballast, ensuring the project's stability requirements were met.

The project has pushed the limits of high-performance Offshore S-type Rockbags in terms of stone size and weight, an achievement now recognized by contractors and developers, particularly in offshore wind projects. Ridgeway Kyowa Filter Unit® Rockbags integrate seamlessly into the marine environment, supporting the creation of Nature Inclusive Designs. The interstices within the Units provide a natural habitat for small fish, plants, and other aquatic life, contributing to subsea habitat enhancement and promoting Biodiversity Net Gain.

As the offshore wind sector continues to grow, Ridgeway Filter Unit Rockbags stand as a testament to the power of innovation and collaboration, advancing the transition to a greener environment through renewable energy.

In summary, Ridgeway Rockbags offer a versatile and effective solution to a range of engineering challenges in the offshore wind sector, playing a key role in the successful development and operation of wind energy projects in coastal and marine environments.


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