Developing next generation array cables for offshore wind

BUSINESS PROFILE

- Pioneers in inter-array cables for both fixed and floating offshore wind, as well as wave and tidal energy solutions, production umbilicals, intervention workover control systems, and bespoke end terminations and accessories.
- Operates advanced manufacturing facilities in the UK, and Poland.
- Announced a new High Voltage Cable Manufacturing facility to be constructed in Cambois, near Blyth, Northumberland, UK.

SUPPORT RECEIVED

- **Funding Support**

Solutions for the offshore wind industry

With OWGP's support, JDR is developing next-generation array cables that address the offshore wind industry's need for higher-capacity and more efficient power transmission.

This initiative enables the deployment of innovative materials and technologies, reducing costs and enhancing the performance of future offshore wind projects.

JDR Cable Systems, a leading manufacturer of subsea cables and control solutions, connects the offshore energy industry with world-class technologies and services. With over 30 years of experience, JDR specialises in the design, engineering, manufacture, installation, and support of subsea power cables and umbilical systems for the oil and gas and renewable energy sectors. JDR is at the forefront of innovation in subsea connectivity.

Impact of the support

Launched its new 66 kV, 1200 mm² array cables.

Completed type test qualification of a next-generation 132 kV, 800 mm² export/array cable.

Opened new opportunities in the subsea high-voltage cable market.

Invested in a £130m new state-of-the-art manufacturing facility in Cambois which will create over 171 highly skilled jobs in the UK offshore wind manufacturing sector.

A closer look at next generation array cables

JDR Cable Systems is advancing its Next Generation Array Cable project, which focuses on developing innovative solutions for the offshore wind sector. The project aims to create cutting-edge 66 kV array cables with 1200 mm² conductor sizing in copper and aluminium, as well as a next-generation 132 kV 800 mm² export/array cable prototype. These developments will incorporate new polymer and materials technologies to enable greater power transmission from next-generation turbines operating at 14 MW and beyond.

Before

JDR Cable Systems has been a key player in the offshore wind array cabling market since entering the sector in 2009. The company has supplied over 4000 km of inter-array cables enabling over 15 GW of offshore wind turbine power to be connected from projects across the UK, Europe, the US, and Taiwan, while leading the transition from 33 to 66 kV array cables to help developers achieve significant cost reductions.

Driven by increased industry demand for larger, higher-capacity cables, JDR sought to produce next generation array cable technology to be used across a range of products including long-length array cables up to 30 km without joints, whilst also enabling the company entry into the supply-constrained HV Export Cables market. To kickstart the development of this technology JDR turned to OWGP for a Development Grant to assist in accelerating their product innovations.

During

JDR has been a consistent driver of innovation in subsea cable technology, refining designs to address the evolving demands of the offshore wind sector. During this project, JDR leveraged its robust project execution team and a stage-gate process, to maintain a thorough oversight and continuous improvement at every stage. Their agility and efficiency were exemplified by their ability to meet strict deadlines during the course of this project.

After

In 2023, JDR successfully launched its new 66 kV, 1200 mm² array cables and in 2024 a next-generation 132 kV, 800 mm² export/array cable completed type test qualification. These innovative products enabled JDR to participate in projects requiring over 14km of Interlink or Platform Connector Cables between two offshore substations. The 132 kV cable development has opened new opportunities in the subsea high-voltage cable market for the business. Building on the designs and concepts developed through the OWGP-funded project, JDR has also introduced additional products and achieved record production lengths, further solidifying its position as a leader in the industry.

This growth has been a catalyst for significant investment in a £130m new state-of-the-art manufacturing facility in Cambois, near Blyth in Northumberland, dedicated to producing high-voltage, long-length cables. Set to become operational next year, the facility will support the continued demand for JDR's advanced cables and create over 171 highly skilled jobs in the UK offshore wind manufacturing sector in its first phase.

> We strongly encourage supply chain companies to engage with the Offshore Wind Growth Partnership (OWGP). Their transformative programs provide invaluable support for businesses looking to scale, innovate, and meet the future energy demands of the industry. Whether you're developing new technologies, exploring fresh ideas, or seeking guidance on market expansion, OWGP is an essential partner in driving growth and addressing the evolving needs of the offshore wind sector.

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