

News Release

FOR IMMEDIATE RELEASE

Hitachi Energy helps deliver first power from world's largest offshore wind farm in record time

The Dogger Bank Wind Farm has supplied its first power to the UK mainland via Hitachi Energy's HVDC technology underpinned by strong collaboration and new business model

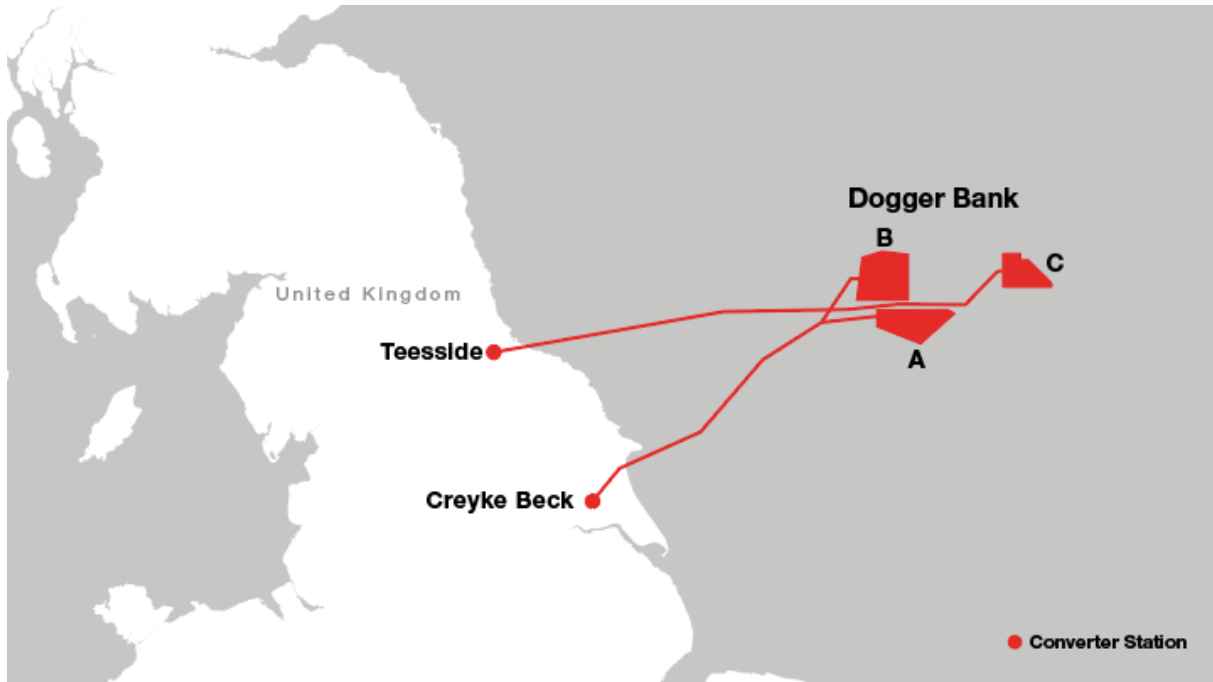
Zurich, October 10, 2023 - Hitachi Energy, a global technology leader that is advancing a sustainable energy future for all, today announced that power has been transmitted from the Dogger Bank Wind Farm, the world's largest offshore wind farm, via its high-voltage direct current (HVDC) system to the UK grid for the first time.

Hitachi Energy has provided its HVDC Light® system to connect Dogger Bank A, the first phase of the wind farm located more than 130-kilometers (km) off the Northeast coast of England, to the mainland. Despite disruptions caused by Covid-19, the 1,200 megawatt (MW) offshore platform project was successfully executed in record time of 38 months with the highest safety and quality standards.¹

Dogger Bank Wind Farm will become the world's largest offshore wind farm. The HVDC systems will facilitate power transfer to the mainland. The total transmission capacity of 3.6 gigawatts (GW) across the three phases of the project will power up to 6 million homes, or around five percent of UK's electricity needs and significantly contributing toward the UK government's goals of sourcing up to a third of its electricity from offshore wind by 2030.

"The urgent energy transition requires strong collaboration, new business models, and global standards," said Andreas Berthou, Head of HVDC at Hitachi Energy's Grid Integration business. "We are proud to be the technology partner for the Dogger Bank Wind Farm project, with HVDC being the force multiplier for the clean energy transition, increasing access to an energy system that is more sustainable, flexible and secure. Today is a significant milestone in securing the UK's future energy needs, made possible by foresighted partners such as SSE Renewables, Equinor and Vårgrønn that have made the UK a leader in the transition to clean power."

"Hitachi Energy's HVDC systems are a great asset for long-distance offshore transmission," said Olly Cass, Project Director for Dogger Bank Wind Farm. "Successful deployment of this technology for the first time on a UK wind farm shows what can be achieved at scale, and at greater distances from our coastline. We thank Hitachi Energy for its role in our journey to first power. Together with our supply chain partners we're creating a greener and more secure energy system for UK homes and businesses and for future generations."



Offshore HVDC converter stations turn the generated wind power from alternating current (AC) to direct current (DC) and transmit the electricity to shore, where a second converter station will turn the power back to AC and integrate it into the AC grid. At such distances underwater, HVDC is the most feasible way to transmit electricity, and losses are minimized, meaning more power reaches the end consumer. By using HVDC, the reliability also increases in the AC grid due to the system's uniquely flexible and controllable features.

The latest HVDC Light® system used for these connections provides the most compact design and the lowest energy losses in the power industry. According to an independent life cycle assessment, implementing this pioneering technology will reduce the lifetime CO₂ impact by almost two-thirds, compared to previously commissioned installations, supporting the clean energy transition and the strong global focus on carbon-neutral energy systems.

Hitachi Energy's total scope of supply includes the design, engineering, procurement, construction and installation of six converter stations, three onshore and three offshore. Aibel AS, with whom Hitachi Energy has a strategic partnership on offshore wind connections, will provide the three offshore platforms which will house the HVDC equipment. The Dogger Bank HVDC project is an early example of a new business model in the HVDC industry, where orders are placed for multiple, similar HVDC systems. This new approach allows Hitachi Energy to plan in advance to increase manufacturing capacity, expand and train the workforce, and maximize standardization to increase synergies between successive projects.

Notes to Editors:

Hitachi Energy's HVDC solution combines world-leading expertise in HVDC converter valves; the MACH™ digital control platform¹, converter power transformers and high-voltage switchgear; as well as system studies, design and engineering, supply, installation supervision and commissioning.

HVDC Light® is a voltage source converter technology developed by Hitachi Energy, which was launched over 25 years ago. It is the preferred technology for many grid applications, including interconnecting countries, integrating renewables and "power-from-shore" connections to offshore production facilities. HVDC Light's defining features include uniquely

compact converter stations and exceptionally low electrical losses.

Hitachi Energy pioneered commercial HVDC technology almost 70 years ago and has delivered more than half of the world's HVDC projects.

The Dogger Bank Wind Farm project is being developed and built by the UK's SSE Renewables in a joint venture with Norway's Equinor and Vårgrønn (a joint venture of Eni Plenitude and HitecVision). SSE Renewables is lead operator for the development and construction of Dogger Bank Wind Farm. Equinor will be lead operator of the wind farm on completion for its expected operational life of around 35 years. Vårgrønn brings specialist offshore wind expertise to the project.

¹ Record execution time based on Hitachi Energy's market-leading experience of implementing HVDC systems.

² [Modular Advanced Control for HVDC \(MACH™\)](#)

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About Hitachi Energy

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We serve customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, we pioneer technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. We are advancing the world's energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. Headquartered in Switzerland, we employ around 40,000 people in 90 countries and generate business volumes of over \$10 billion USD.

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About Hitachi, Ltd.

Hitachi drives Social Innovation Business, creating a sustainable society through the use of data and technology. We solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products. Hitachi operates under the business structure of "Digital Systems & Services" - supporting our customers' digital transformation; "Green Energy & Mobility" - contributing to a decarbonized society through energy and railway systems, and "Connective Industries" - connecting products through digital technology to provide solutions in various industries. Driven by Digital, Green, and Innovation, we aim for growth through co-creation with our customers. The company's consolidated revenues for fiscal year 2022 (ended March 31, 2023) totaled 10,881.1 billion yen, with 696 consolidated subsidiaries and approximately 320,000 employees worldwide. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
