

DOGGER BANK WIND FARMS

BY



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Aibel and ABB to deliver power grid solution to Dogger Bank Wind Farms

Dogger Bank Wind Farms has unveiled Aibel and ABB as suppliers of its offshore converter platform and HVDC power transmission system, providing the power grid solution that will connect the world's largest offshore wind farm to the UK transmission network.

The 3.6GW Dogger Bank offshore wind farm comprises three 1.2GW projects – Creyke Beck A, Creyke Beck B, and Teesside A – in the North Sea, approximately 130km from the UK's Yorkshire Coast.

Under the deal announced this morning by joint venture partners Equinor and SSE Renewables, Aibel will deliver two high voltage direct current (HVDC) offshore converter platforms for the Creyke Beck A and Creyke Beck B projects, while ABB will supply its HVDC Light® converter system to the same projects, connecting the offshore wind farm to the UK power grid.

Both companies have options to provide platform and transmission solutions to Dogger Bank's Teesside A project at the same wind farm, which will be confirmed in due course.

Each project will have a single HVDC transmission link connection between the wind turbine arrays and the onshore transmission network. ABB will provide the HVDC converter systems at either end of each link, with Aibel providing the associated offshore platforms.

Aibel and ABB have a strong track record of collaboration, focused on developing and optimising designs for offshore HVDC systems. This will be the first use of HVDC technology in the offshore wind market in the UK. The HVDC electrical grid system will provide efficient and stable transmission from the wind farm to the UK transmission network, as well as higher control capabilities.

Aibel's converter platforms will have a lean design, with a steel jacket structure and no living quarter or helideck. The platforms will be normally unmanned, operated from shore and accessed only by a Service Operations Vessel.

ABB's HVDC Light® convertor system will convert alternating current (AC) at 66 kilovolts from each windfarm to direct current (DC), before transmitting it onshore via HVDC transmission links to an onshore convertor station where the transmitted power will be converted back to 400 kilovolts AC for export to the National Grid substations at Creyke Beck in east Yorkshire and Lackenby in Teesside.

Paul Cooley, Director of Capital Projects at SSE Renewables, said: "Dogger Bank is truly a world-leading project, pushing new boundaries in the provision of ground-breaking technology to deliver low-carbon energy generation to help achieve the UK's net zero ambition by 2050. The appointment of Aibel and ABB as project partners will ensure that the latest grid solution technology is deployed to support our successful project delivery."

Halfdan Brustad, Vice President for Dogger Bank at Equinor, said: "This is an important milestone for Dogger Bank with a groundbreaking HVDC technology solution enabling a competitive solution for offshore wind at a long distance from shore. This will be the first offshore HVDC solution in the UK which opens up new markets and opportunities. The appointment of Aibel and ABB demonstrates cross industry collaboration bringing best expertise into a successful Dogger Bank delivery."

Steve Wilson, Project Director of Dogger Bank Wind Farms, added: "We are pleased to have selected industry leaders Aibel and ABB to partner with us on the delivery of Dogger Bank, and we look forward to working with both companies to deliver the power grid solutions that will connect the world's largest offshore wind farm to the UK transmission network."

Mads Andersen, President and CEO of Aibel AS, said: "This is an important strategic milestone for Aibel. With this award, we confirm our position as a preferred supplier in the European offshore wind segment and strengthen our position in the ongoing energy industry transformation."

Claudio Facchin, President of ABB's Power Grids, said: "Winning the contracts from SSE Renewables and Equinor for the landmark Dogger Bank project underscores ABB's innovative offshore wind technology and expertise. It also highlights the success of ABB Power Grids' customer partnerships, both on design optimization as well as on the business model level. ABB is committed to delivering sustainable solutions with pioneering technologies and in the Dogger Bank project we are helping to make offshore wind competitive and thus contributing to a stronger, smarter and greener grid."

Dogger Bank Wind Farms is a 50:50 joint venture (JV) between Equinor and SSE Renewables which was recently successful in the latest Contracts for Difference (CfDs) Allocation Round, the UK Government's auction for renewable power.

The project is now moving towards final investment decision, expected in 2020. SSE Renewables will lead the development and construction phases of Dogger Bank Wind Farms and Equinor will lead on operations once completed.

Dogger Bank will provide enough clean, low-carbon energy to power over 4.5 million homes annually, equivalent to around 5% of the UK's estimated electricity generation.

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About Dogger Bank Wind Farms:

- A 50:50 joint venture between Equinor and SSE Renewables

- Consent was granted in 2015.
- Located in the North Sea, approximately 130km from the Yorkshire Coast.
- Water depth ranges from 20m to 35m.
- Each project will have an installed capacity of 1.2GW and will be able to power 1.5 million homes. Together, the projects can cover approximately 5% of the UK's estimated electricity generation.
- The first project is expected to be operational in 2023.
- The WTGs will be installed on monopile foundations.
- The transmission system will be High Voltage Direct Current (HVDC) due to long distance to grid connection point.
- The Contract for Difference is a 15-year contract which will be indexed for inflation. The strike price will be paid for every MWh generated by the wind farms during the contract. After the CfD contract ends, the projects will receive the market price for electricity.

About SSE Renewables

SSE Renewables is the leading renewable energy company across the UK and Ireland, with a portfolio of around 4GW of onshore wind, offshore wind and hydro. Part of the FTSE-listed SSE plc, its strategy is to drive the transition to a zero-carbon future through the world class development, construction and operation of renewable energy assets.

SSE Renewables owns nearly 2GW of onshore wind capacity with over 1GW under development. Its 1,450MW hydro portfolio includes 300MW of pumped storage and 750MW of flexible hydro. Its offshore wind portfolio consists of 580MW across three offshore sites, two of which it operates on behalf of its joint venture partners. SSE Renewables has the largest offshore wind development pipeline in the UK and Ireland at over 7GW.

About Equinor

Equinor is developing as a broad energy company, building a material position in renewable energy. Equinor now powers more than one million European homes with renewable offshore wind from four offshore wind farms in the United Kingdom and Germany. Equinor is building material offshore wind clusters in the UK, the US North East and in the Baltics. The company commissioned the world's first floating offshore wind farm in 2017 off the coast of Scotland and is positioned for future floating wind options in several geographies, including UK, Norway and Asia.