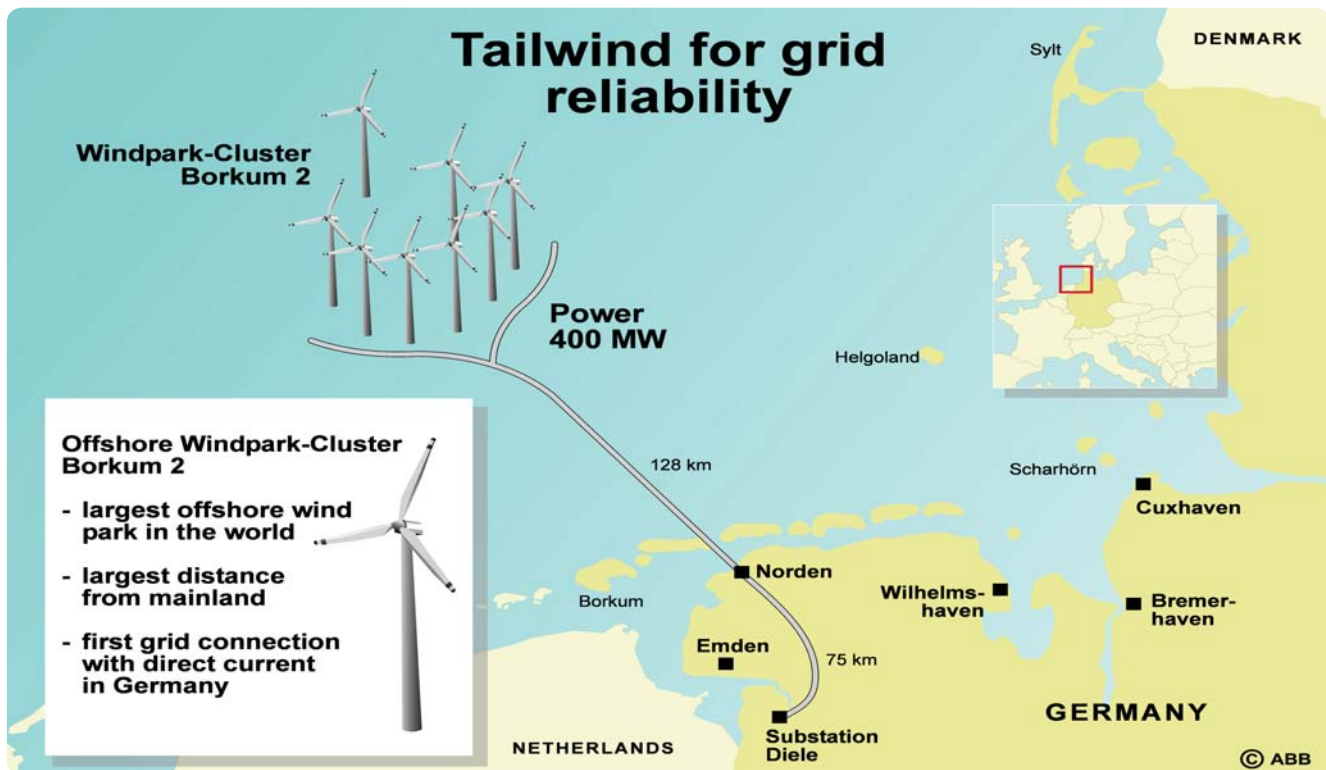


NORD E.ON 1 WINDMILL PROJECT

OUR CLIENT ABB AB

OPERATORS German Utility E.ON Netz GmbH

**DESCRIPTION OF THE PROJECT**

The ABB windmills park is the world's largest and most remote offshore wind park, supplying the German electricity grid. The 400-megawatt wind park is connected to the German grid, via a HVDC (high voltage direct current) cable, located more than 100 kilometers off the German coast in the North Sea.

Scheduled to be operational within 2009, the windpark is expected to avoid CO₂ emissions of 1.5 million tons per year by replacing fossil-fuel generation. Germany currently uses wind for about 7 percent of its electricity requirements and expects to double the share of wind energy by 2020.

CHALLENGES

ABB was responsible for system engineering including design, supply and installation of the offshore converter, sea and land cable systems and the onshore converter.

Novenco were chosen to design and supply the Air Handling units used to cool the large transformers installed on a separate platform which converts the AC power generated by the windmills to DC before sending it to land.

Important aspects such as choosing components with a low failure rate, implementing redundancy to continue operation even at single component level failure and provision for a short meantime to repair had to be taken into consideration.

ADVANTAGES

Since Novenco have their own production of Air Handling Units and Unit heaters in Denmark we were able to maintain complete control of the HVAC equipment manufacturing and the all important factory testing of equipment with the client prior to delivery.

Furthermore we were able to offer a totally customized solution with the client's latest modifications incorporated at the design stage in our construction department in Denmark.

SCOPE OF WORK

Novenco supplied 7 Air Handling Units, 22 unit heaters + fan, dampers and louvers for the ventilation of Generator room.

SCOPE OF SUPPLY:

AIR HANDLING UNITS

Recirculation systems are covered by 4 stainless steel 316L ZCP-135 Air handling units delivering a total of 168,000 m³/hr and with titanium cooling coils for seawater of 390kW in each AHU. 1 stainless steel 316L ZCR 13/12 delivering 10400m³/hr with 70kW heating coil and 90kW titanium coil for seawater cooling.

The fresh air systems are covered by 2 Air handling units:

1 stainless steel 316L ZCR 9/6 delivering 4000m³/hr fresh air and including 2 stage water separators in seawater resistant aluminium.

1 stainless steel 316L ZCR 9/6 delivering 2000m³/hr fresh air and including 2 stage water separators in seawater resistant aluminium.

Each AHU was fitted with EU-7 compact filters for separation of salt, water and dust.

Non return and shut off dampers were supplied in stainless steel 316L for all systems.

GENERATOR ROOM

1 axial fan type ACN 315

Inlet: 2 stage water separator in seawater resistant aluminium with Fine Filter Amerkool M81 for separation of salt, water and dust.

Non return damper in stainless steel

Outlet louver in stainless steel

