Offshore logistics
In the period from March to July 2009, AREVA Wind rose to the logistical challenges of the offshore wind power industry.

First, the various components of the AREVA Wind M5000 were transported to Eemshaven in the Netherlands, the starting point for 5 MW turbine assembly. The foundations (tripods) were delivered from Norway, the two upper tower sections (S1, S2) from Bremen and the lowest tower section (S3) from Bremerhaven. The hubs and nacelles were also transported to the Netherlands from Bremerhaven, while the rotor blades arrived by ship from Stade and were assembled with the hubs to form the rotor components.
Installation of the tripod foundations
The transport of the first tripod marked the start of installation of the turnkey project alpha ventus, which is located 40 km north of the island of Borkum. The tripods were brought to their destination using a TAKLIFT 4 pontoon crane. On April 23, 2009 work began on positioning the first tripod. Within 40 days, six foundations were anchored in the seabed for the AREVA Wind M5000 wind power turbines, with the last tripod taking only two days to install.
M5000: Tower and nacelle installation
Installation of the first (S3) and second (S2) tower sections of the first turbine was successfully completed on June 15, 2009. By July 3, this work had been completed for all six towers. From July to August, the jack-up Barge JB114 was mobilised and the nacelles and upper tower sections were erected for the six M5000s. With each nacelle weighing in at 234 t and each tower section at 94 t, it took incredible skill to control these massive weights as they hung suspended from a crane over the wild North Sea.
Rotor component assembly
Assembly of the nacelle was followed by installation of the rotor component comprising the hub (approx. 60 tonnes) and the three rotor blades (16.5 tonnes each). Precise crane guidance is critical to mounting the rotor component on the nacelle. The rotor component can only be raised very slowly, otherwise it would start to move. The AREVA Wind team successfully completed erection of the first AREVA Wind M5000 on July 15, 2009. On August 15, work began on commissioning the six fully installed wind turbines of the offshore wind power plant.
First results
The performance feedback from the AREVA Wind M5000s in November/December 2009 far exceeded expectations. AREVA Wind rates very highly the experience it gained during the alpha ventus project. The ability to deliver and hand over 5 MW wind power plants to the customer positions AREVA Wind as a qualified manufacturer in the offshore wind market. Essential offshore experience was also gained during the handover to the AREVA Wind service team.
AREVA supplies solutions for carbon-free power generation. Its expertise and know-how in this field are setting the standard, and its responsible development is anchored in a process of continuous improvement.

As the global nuclear industry leader, AREVA’s unique integrated offer to utilities covers every stage of the fuel cycle, nuclear reactor design and construction, and related services. The group is also expanding considerably in renewable energies – wind, solar, bioenergies, hydrogen and storage – to be one of the top three in this sector worldwide in 2012.

Every day, AREVA’s 48,000 employees cultivate the synergies between these two major carbon-free offers, helping to supply safer, cleaner and more economical energy to the greatest number of people.

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