alpha ventus

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An Even Dozen: EWE, E.ON and Vattenfall erect the twelfth and last wind turbine for alpha ventus

Germany's first offshore wind park, alpha ventus, is complete: This morning at 07.13 hrs the consortium of EWE, E.ON and Vattenfall, the German Offshore Test Field and Infrastructure GmbH, or DOTI, has successfully built its twelfth and last wind turbine in Germany's North Sea, 45 kilometres north of Borkum island. The entire time required to complete all twelve turbines was just under seven months, making alpha ventus the world's first offshore wind park to employ a dozen 5-megawatt class wind turbines. Six turbines are already being test run and have so far supplied around 13 million kilowatt-hours of environment-friendly offshore wind power to the German grid. In the coming weeks the additional six wind turbines will gradually come online. The sums invested by EWE, E.ON and Vattenfall for this pioneer project amount to 250 million euros. At full operation the amount of future energy produced annually by alpha ventus will meet the consumption requirements of 50,000 households.

„With the building of alpha ventus, our three companies have shown that offshore wind energy is technically feasible in Germany, even under considerably difficult conditions. The entire team can be rightly proud" says overall project director Wilfried Hube (EWE). "The construction of twelve 5-megawatt wind turbines 45 kilometres from the shore in waters 30 meters deep is a true piece of pioneering achievement and is the first of its kind worldwide".

For EWE, E.ON and Vattenfall as well as for the numerous contractors, the alpha ventus project was a proverbial leap into cold waters. Although there had already been much experience with other wind projects, the harsh conditions in the North Sea provided a true test for the feasibility of offshore wind power in Germany.

For this reason the building of alpha ventus is a remarkable logistical achievement. After initial difficulties with the construction vessels in 2008, these "lessons learned" were put to use straightaway with the selection of more suitable equipment in 2009. The result is that all twelve wind turbines were able to be erected in seven months and the entire project is well on schedule. Vattenfall's Oliver Funk, who also acts as a managing director of DOTI, had this to add: "We learned that the construction process and the employed logistics must be very

well attuned with one another in order to be build effectively. In this regard we faced a very steep learning curve."

During peak construction of alpha ventus in summer 2009, around 350 people and up to 25 different ships were simultaneously at work on site. Among these vessels were three brand-new jack-up barges that had arrived at alpha ventus almost directly from the shipyard for their first offshore work as well as the largest crane ship in the world, Thialf, that installed the jacket foundations for the North Sea REpower wind turbines in only six days.

The construction of alpha ventus was far more complex than was the case with previous offshore wind parks, which were all built outside Germany. The concept at the heart of alpha ventus is the reason: two types of German-manufactured wind turbines were built on two different types of foundations using various construction concepts. "One can ultimately say that we have built two wind parks" says Ralf Lamsbach of E.ON in his capacity as a managing director of DOTI. "As a result it is already a fact that the construction has provided us with valuable information for future offshore projects."

While the twelve wind turbines were being completed, the first six units were already being test run and generating power. Since August of this year alpha ventus has produced around 13 million kilowatt-hours of electricity from the North Sea. The additional six turbines will now gradually come online. Here as well the project has forged a new path: "alpha ventus will not be taking a winter break" says Dr. Claus Burkhardt of EWE, also a managing director of DOTI. "Weather permitting, we'll go out there and connect the units - and if need be, during Christmas and New Year's." In order to ensure that alpha ventus meets its goals, more than 100 technicians have undergone so-called "helicopter abseil-training" in Cuxhaven in recent weeks. Should the sea route be unavailable due to bad weather, the technicians can now reach the wind power facilities from the air. This is also an alternative under conditions in which ships can no longer travel due to high swells.

The ongoing work at sea can be followed on the internet. A webcam stationed directly on the FINO1 construction platform shows the progress on the building site. A link to the webcam can be found at www.alpha-ventus.de.

With its successful construction of the offshore transformer station in September 2008, DOTI had already created the necessary prerequisites for the transmission of the generated wind power ashore. An underwater cable, installed last year by transpower gmbh (formerly E.ON Netz), connects the offshore transformer station to the German power grid.

The project is managed by 40-person team comprised of employees from the three participating companies of EWE, E.ON and Vattenfall. The joint project company DOTI was founded in June 2006.

Note to editors:

Current print-quality images *as well as illustrations of offshore wind turbine construction can be downloaded free of charge at*: http://bildarchiv.alpha-ventus.de

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alpha ventus is the first German offshore wind farm constructed at sea by EWE, E.ON and Vattenfall. A total of 250 million euros has been invested in this pioneering project. The future production capacity of alpha ventus will be equivalent to the consumption of 50,000 households. This pilot project, situated roughly 45 kilometres off the coast of the island of Borkum, is producing fundamental knowledge on the construction and operation of an offshore wind farm. A total of 12 5-megawatt wind turbines will be employed at the alpha ventus test field – six Areva Multibrid M5000 turbines and six REpower 5M turbines. Furthermore, two types of steel foundations will be used for the wind turbines. While the Areva Multibrid turbines stand on tripods, so-called 'jacket' foundations are used for the REpower turbines.

For the first time, such turbines will be constructed and operate offshore in waters up to 30 metres deep. The research and development results are being integrated in the design, construction and operation of future offshore turbines. EWE, E.ON and Vattenfall have founded DOTI (Deutsche Offshore-Testfeld und Infrastruktur GmbH & Co. KG) for the realisation of the alpha ventus wind farm. DOTI has leased the licensing rights to the test field from the Stiftung der Deutschen Wirtschaft für die Nutzung und Erforschung der Windenergie auf See (Offshore Wind Energy Foundation) under the name 'Borkum West'.