



Builders of German offshore wind farms submit research report on noise mitigation

- Largest noise mitigation project in the German Baltic Sea successfully completed
- Unprecedented database created
- Important research impetus to improve noise mitigation for sea mammals

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Eight builders and operators of German offshore wind farms presented the final report on the ESRa noise mitigation project today. The research project tested various new noise reduction systems designed to mitigate the spread of ramming noise when installing foundations for offshore wind farms. The initiative aims to protect porpoises during the construction of offshore wind power plants. To this end, a field test was conducted in the German Baltic Sea approximately three kilometres off Travemünde in August last year. A total of five novel noise mitigation systems were tested on an test pile in Neustädter Bucht. The companies Bard Engineering, DONG Energy, EnBW Erneuerbare Energien, E.ON Climate Renewables, EWE Energie, RWE Innogy, Stadtwerke München and Vattenfall participate in the ESRa project.

Different sound mitigation concepts were used on the so-called Brodtener pile in a water depth of about nine meters; they work with air-filled enveloping bodies, multi-layer hose curtains, bubble curtains and combinations of acoustic cladding and bubble curtains. All systems were used under identical ambient conditions: the test was designed to compare the potential noise mitigation levels with each other by way of a uniform measuring concept.

Institut für Technische und Angewandte Physik (ITAP – Institute for Technical and Applied Physics) at Oldenburg developed a specific measuring and evaluation concept for underwater noise measurements. The institute also conducted and evaluated the measurements.

Page 2

Each of the noise mitigation systems manufactured as prototypes withstood the harsh conditions at sea and demonstrated the noise mitigating effect. When corrected for site-specific effects, the mitigation effect totalled up to nine decibel in the relevant range. This brought the noise level much closer to the noise emission limit of 160 decibel at a distance of 750 meters around the source of the noise. More research and development work is required on the basis of the ESRa project in order to meet the limit reliably in the future.

The ESRa project is as yet the largest research initiative for underwater noise mitigation. A series of measurements have created an unprecedented database of over 650 data records.

“The offshore wind industry takes the protection of the environment very seriously when building and operating offshore wind farms. Basic research like the ESRa project is extremely important for a better understanding of the effects on the maritime environment and to initiate further measures”, explained Jörg Kuhbier, Chief Executive Officer of Stiftung Offshore-Windenergie (Offshore Wind Foundation). It provided major impetus to both the phenomenon of hydro sound, which has so far hardly been studied at all, and for the development of noise mitigation systems. The most important findings of the ESRa project were already presented in workshops to the manufacturers of the noise mitigation systems and the relevant approving authority.

More information on the technology used and the results of the ESRa study is available at www.offshore-stiftung.com.

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