



Welcome

The Wind Energy Agency Bremerhaven/Bremen (WAB) is the competence network for the wind energy industry in the northwestern coastal part of Germany.

WAB enters the year 2007 with the first edition of this international newsletter, which will inform you every two months about developments and innovations in our network on wind energy onshore and offshore. We wish all readers a good start into the new year and hope you enjoy the reading!

Jan Rispens
Managing Director



No sooner had the lights gone out on 4 November 2006 between Papenburg in Germany and Zaragoza in Spain, than messages began flooding in on the news tickers.

The drift of these messages was that it must be due to wind energy – after all, it normally disturbs electricity supply from the grid anyway. Years of bad press proliferated by some lobbying associations against wind energy finally paid dividends and, initially, the European media copied and published a lot of speculation and misinformation without checking their facts.

But the truth came out within ten days. As on many previous occasions, a 380-kV overhead line was shut down to allow a new ship from the Meier dockyard in Papenburg to cross the river Ems. The dockyard had requested the E.ON grid control centre to shut down the overhead lines earlier than planned, but it had failed to repeat a simulation of current grid conditions. Analyses have shown that, at the time of the power failure, the deviation in wind energy output being fed in to the grid compared to predicted values was almost zero.

What can we learn from this blackout? Firstly, that with the very precise wind energy forecasts currently available the power grid can easily cope with fluctuations in electricity generation and demand. Secondly, that in order to have a safe European power grid, we need an extensive grid with strong connections to neighbouring countries. And thirdly, that the wind energy industry should rebut subtle and provocative public misinformation more systematically than at present.

In order to achieve this, we need the help of all companies and employees!

Detlef Lindenau
Board Member of WAB and the Managing Director of REETEC GmbH

windenergy-news

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24 January 2007

facility visit of the Fassmer yard, Bremen, Germany

15 February 2007

facility visit of AMBAU GmbH tower production, Bremen, Germany

16 - 20 April 2007

Hannover trade fair 2007, Hannover, Germany

13 - 14 June 2007

conference windforce07 - course offshore, Bremerhaven, Germany

18 - 22 September 2007

HUSUMwind07 - the international trade fair, Husum, Germany



Jobs with prospects

The Berufliche Bildung Bremerhaven GmbH (BBB) and the Gewerbliche Lehranstalt (GLA) are offering 18-year-old adults the chance of an apprenticeship with excellent future prospects. The apprenticeship for electronics technicians concentrates on the wind energy sector and begins on 1 February 2007. It includes specific knowledge, such as technical wind energy English, industrial placements and sector-specific communication training as well as job applications. This project is funded by the EU.

Combined wind and hydrogen operation

A wind-hydrogen system for intermediate storage of wind energy is currently being examined as part of the HyWindBalance research project. The test plant has an output of 5 kW and was put into operation on 4 December 2006. The project is being implemented by a consortium of companies from Oldenburg and its university. The aim of the project is to minimise the fluctuating power output of wind farms by storing electrical energy as hydrogen and feeding it back into the power grid, as required, using fuel cells. One key area is the development of optimised operation strategies in order to be able to profitably operate wind-hydrogen systems. To conclude the current development phase, the technical and economic feasibility of a 300-kW plant will be examined at the end of 2007.

> [Link](#)

Blackout not caused by wind energy

According to information from the grid operator E.ON Netz, human miscalculations were largely to blame for the failure of the European power grid on 4 November 2006. No technical malfunctions were, however, established. This is the result of a report on the status of the enquiry into the sequence of events and causes of the power failure, submitted to the Federal Grid Agency by E.ON Netz. Before the planned disconnection of the extra-high voltage power line over the river Ems to allow the cruise ship 'Norwegian Pearl' to pass through, it was incorrectly assumed that the grid would not overload if

another power line were to fail.

About half an hour later, another high-voltage power line did overload, for reasons not yet known. In order to compensate, several power lines were connected together in one transformer station. However, contrary to the expectations of employees in the grid control centre, this produced the opposite effect: the load increased massively, causing the system to disconnect automatically, which spread to large parts of Europe.

This refutes the majority of press reports alleging that the feed of wind energy had caused the power failure.

> [Link](#)

Laying underground cabling now easier

Not only does the German Infrastructure Planning Acceleration Act intend to include grid connection to offshore wind farms by grid operators, WAB also believes that its planned regulation for the onshore grid is very positive. So now simple underground cabling can be laid in coastal regions up to 20 kilometres offshore, instead of using overhead power lines. The Act accepts that the additional costs of laying underground cables, as opposed to overhead power lines, in these coastal regions are tolerable under the German Energy Industry Act. These costs can then be asserted by the grid operator and be passed on to the electricity customers. To date, grid operators have repeatedly declined to use underground cabling due to the high costs. WAB assumes that this will create significantly faster, additional grid capacities in coastal regions.

Hermann Albers, Vice-President of the German Wind Energy Association (Bundesverband Windenergie, BWE) and campaigner for the new regulations in North Friesland said, "This Act will address a significant hurdle to the expansion of wind energy on land. Underground cabling can be laid much faster than overhead power lines and will find significantly more acceptance amongst the population." How the practical transition of power lines from coastal regions to inland areas will look is currently unclear. Hermann Albers believes there is more work to be done here. > [Link](#)

Decision taken to establish serial production of REpower 5M in Bremerhaven

On 5 December 2006, the Board of REpower Systems AG made a decision about the future production site of the REpower 5M. Due to large demand for the 5-MW plants, especially developed for offshore use, production will already begin in Bremerhaven from 2007. > [Link](#)



WAB congratulates all prize winners and nominated projects

On 14 November 2006, the **10th Bremerhaven Gründerpreis** (Bremerhaven founder's prize), with 50,000 euros prize money, was awarded during a ceremony at the Bremerhaven Sparkasse bank. Almost 350 invited guests from politics and business took part in the event. **Deutsche WindGuard Engineering GmbH** and **energy & meteo systems GmbH** from the WAB network were nominated candidates and Deutsche WindGuard received a recognition prize for their laminar wind channel project. > [Link](#)



Bremen Umweltpreis Nordwest 2006 (Bremen Environment Award North West 2006) – this year, the federal state of Bremen presented the fourth such award, along with 35,000 euros prize money, in the metropolitan region of Bremen-Oldenburg, for the first time. From a total of 78 submitted applications, the special 'Energy' prize went to **energy & meteo systems GmbH** for its 'optimised energy mix by means of an accurate wind forecast system'. > [Link](#)



Wind study course among finalists – the **Wind Energy Technology and Management further-training study course** was one in eight nominated at the final of the **NordWest Award 2006**, and was selected from a field of 111 applicants. The promotional award and its 30,000 euros prize money, sponsored by the Bremer Landesbank, was presented on 22 November 2006 to acknowledge initiatives showing particular drive and creativity in promoting development in the northwest-German region. This "innovative study course provides an impetus for the further development of wind energy in the whole region," pointed out Bremen's mayor, Jens Böhrnsen, during the award ceremony. > [Link](#)



Opening of fibre competence centre in north Bremen

On 30 November 2006, Labour Senator, Ingelore Rosenkötter, and Economic Senator, Jörg Kastendiek, handed over a cooperation agreement to the participating partners at new offices in north Bremen. At the fibre competence centre, science and business work together to provide new initial and further training courses in fibre-reinforced

plastics. They are, thus, reacting to demand for qualified employees from enterprises and, at the same time, creating new career prospects for young people and unemployed. Companies participating include Airbus Deutschland GmbH, Abeking & Rasmussen Rotec GmbH and Haindl Kunststoffverarbeitung GmbH, together with the Further Vocational Training Enterprise Berufsbildungswerk (bfw), the Institute for Materials Technology Institut für Werkstofftechnik (IWT) and the Fibre Institute Bremen (FIBRE), all under the auspices of the Fraunhofer Institute for Manufacturing Technology and Applied Materials Research Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung (IFAM). In the pilot phase, the 'FVK-Praktiker/in' fibre-reinforced material training course gets underway – with its intensive theory and specific focus on practical experience. The intention is to establish a comprehensive, sectoral and certified personnel qualification system for all composite fibre technologies, in the medium term. "This is an exemplary project which will have an impact on Bremen and beyond," explained Senators Ingelore Rosenkötter and Jörg Kastendiek. "This fibre competence centre is an important aid to structural change in north Bremen."



network



WAB Annual Meeting of Members

On 5 December WAB reported a positive result to its members for 2006 at the general assembly, which was well-attended by 90 members.

In 2006 for the first time, WAB was able to organise a successful joint stand at the WindEnergy trade fair in Hamburg, with 12 members in attendance. Equally, the 'windstärke06 – kurs offshore' conference drew 180 participants and was positive and politically effective.

In 2007, WAB plans to continue its work in the offshore sector and is optimistic that the new grid-connection regulations for offshore wind farms will allow several projects to rapidly reach the implementation phase. A second specialist key area for 2007 is repowering. A dialogue with regional planners, local authorities and administrative districts in the northwest region is planned.

Dr. Andreas Hinsch from the lawyers' office, Blanke, Meier, Evers, analysed changes resulting from the new German Infrastructure Acceleration Act in his contribution. In his analysis, the grid regulation is a significant improvement and will lead to great cost reductions for planners. Certainly, he believes there is a greater need for negotiating the implementation of these regulations in order to clarify how to proceed with and implement existing cabling plans. For example, there is a need for greater agreement between planners and grid operators in the choice of transformer stations and cabling.

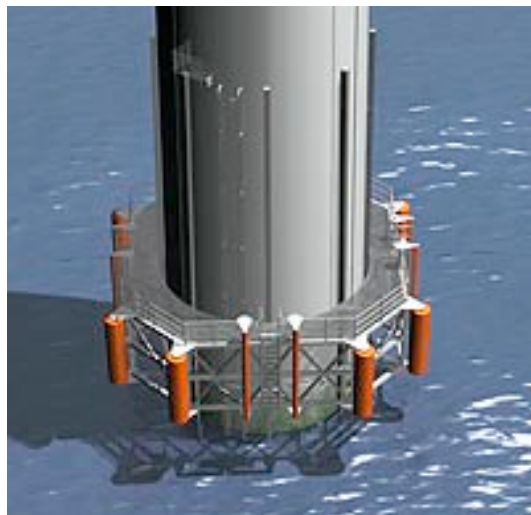
Then Dr. Daniela Jacob, head of regional climate modelling at the Max Planck Institute for Meteorology in Hamburg, held a presentation. She made it alarmingly clear how perceptible and predictable the regional effects of climate change already are. Dr. Jacob emphasised the expected and significant effects on the water balance. Significant changes can be expected in the waterflow of rivers which will affect the shipping sector, demand for cooling water from power stations and city drainage.



Facility visit of Optimare Sensorsysteme AG

On 18 October 2006, members of the WAB network were given information about the diversity of scientific measuring-equipment products on offer from Optimare Sensorsysteme AG. Details were given about the different uses of and developments in special environmental measuring equipment for use at sea, such as devices for detecting oil from aeroplane that deliver information about the extent and location of an oil slick. Or helicopters equipped with movable cameras that collect information

about ice conditions in the Arctic. Optimare services the measuring equipment on both polar aeroplanes belonging to the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven and in the polar region. The subsequent guided tour around the workshops and the hangar illustrated some of these technologies. > [Link](#)



Announcement – facility visit of the Fassmer yard

In the new year, the first site inspection to Fr. Fassmer GmbH & Co. KG in Berne will take place on 24 January 2007. It will present its activities with a focus on the wind energy sector – the company will report on production and the first test of the 'wind lift', a height-adjustable boarding platform for use on offshore-turbines. The broad range of products (fibre-reinforced parts such as nacelle cladding, lifeboats, access systems for ships, emergency containers and helicopter hoisting platforms for wind turbines) can be viewed during the guided tour.

If you are interested, please contact the WAB office.

> [Link](#)

The 'wind lift', a height-adjustable boarding

platform for use on offshore-turbines

WAB's joint stand at HUSUMwind 2007 trade fair

Following the success of the joint stand at WindEnergy 2006 trade fair in Hamburg, attended by twelve member companies and institutes, WAB will also present the network at HUSUMwind 2007 trade fair, entitled, 'WINDSTÄRKE Bremerhaven Bremen'. This specialist trade fair will take place in Husum, Germany from 18 to 22 September 2007. The 144 m² joint stand is located in hall 3 – directly next to the passageway to hall 1. Members who are interested can visit the members' section of the WAB website to get more information about taking part.





Wind power giants for Cuxhaven

On 7 November 2006, Bremen-based Transintra GmbH successfully transported two REpower 5M wind turbines to Cuxhaven. Both plants, with a rotor diameter of 126 metres and a capacity of five megawatts, will be erected at the DEWI Offshore Construction Centre test field in Cuxhaven. A total of 10 tower sections with a diameter of 6 metres, a length of up to 26 metres and maximum unit weights of 160 tonnes were loaded on three pontoons for transportation to Cuxhaven on the quay of the Ambau GmbH – Stahl und Anlagenbau (steel and plant construction). Both nacelles have a unit weight of 320 tonnes and were transported from Bremerhaven fishing harbour to Cuxhaven using a special pontoon. The 6 rotor blades, with a length of 61.50 metres, were delivered by manufacturer LM Glasfiber A/S from Denmark by lorry to the construction site in Cuxhaven. > [Link](#)

WAB welcomes new offshore grid regulation

During negotiations on the Infrastructure Planning Acceleration Act, the Bundestag (the lower house of the German parliament) surprisingly decided that, in future, transmission system operators will be responsible for connecting offshore wind farms to the national grid. Meanwhile, the regulation has already been confirmed by the Bundesrat (the upper house of the German parliament) and has entered into force on 1 January 2007. Grid operators are now obligated to ensure grid connection for offshore wind farms constructed before 31 December 2011. The costs of grid connection will now be passed on to electricity consumers all over Germany, in line with the German Renewable Energy Sources Act regulation (Erneuerbare-Energien-Gesetz, EEG).

Jan Rispens, Managing Director of WAB, welcomed the German Federal Government's initiative, "This is a big step forward on the road to enable economic operation of offshore wind farms in Germany." The regulation means that grid-connection costs will no longer apply to future operators of German offshore wind farms. This makes up about 30% of current project costs. As the offshore grid will become part of the German transmission grid, planners will also no longer have to foot the bill for energy losses in cabling, which can make up three to seven percent. According to estimates by WAB, the initial situation for offshore wind farms in Germany has now improved significantly. WAB believes it is probable that the first offshore wind farms in Germany will still be commissioned in 2007. Jan Rispens went on to say, "It is important that the responsibility for grid construction is transferred quickly from planners to grid operators. As a wind energy location, Germany cannot afford any further delays." > [Link](#)



BMU funds offshore foundation research

As of November 2006, WeserWind GmbH Offshore Construction Georgsmarienhütte, a company in the Georgsmarienhütte holding, will coordinate a research project entitled 'Optimisation of jacket foundation structures for offshore wind turbines in respect of the use of materials, assembly processes and new manufacturing procedures'. Together with WeserWind, REpower Systems AG, HOCHTIEF Construction AG and EUROPIPE GmbH will also participate in this joint project, concentrating on individual sub-projects. The following research facilities will also take part in the project: the Fraunhofer Centre for Wind Energy and Marine Technology Fraunhofer-Center für Windenergie und Meerestechnik (CWMT), the Institute for Statics and Dynamics of the Leibniz University of Hannover (Institut für Statik und Dynamik, ISD) and the Federal Institute for Materials Research and Testing Bundesanstalt für Materialforschung und -prüfung (BAM). The project will be used to develop, among others, methods for optimisation compatible with operational demands, for installation methods and best-fit analysis. It will examine the use of load-bearing elements made of cast steel and standardised piping and compile innovative mounting and installation concepts for offshore foundation structures. The project will be funded by the Federal Environment Ministry (Bundesumweltministerium, BMU) with a grant worth around 2.3 million euros. > [Link](#)



Final report on Danish environmental support research

From 27 to 29 November 2006, around 200 participants took part in a conference on the Danish environmental monitoring programme of the offshore Horns Rev I and Nysted wind farms. The conference was organised by the energy suppliers and wind farm operators, Dong Energy and Vattenfall. The results of a six-year scientific examination of the period before, during and after the construction of both offshore wind farms were presented. The main statement from participating researchers at the conference was that the influence on flora and fauna from both wind farms is currently minimal. WAB believes that these results create a good initial position for scientific examinations of future offshore wind farms in German waters. A summary of the results and detailed documentation are available on the Internet. > [Link](#)

Butendiek plans strategic partnership with Airtricity

The Butendiek citizen wind farm has announced a strategic partnership with the Irish company Airtricity. The company emphasised that they would not deviate from the original concept of a citizen wind farm with a capacity of 240 MW, 35 kilometres west of Sylt. According to the Butendiek association, the partnership with Airtricity would, in particular, reduce financial risks during the construction period. As a company, Airtricity concentrates exclusively on the production and sale of green electricity, primarily from wind power. The company was founded in 1997 and now operates 250 MW of wind energy capacity with a further 400 MW currently under construction. Airtricity operates wind farms in Ireland, Northern Ireland, Scotland and the USA and has had experience with offshore farms since 2003 with the Arklow Bank wind farm in the Irish Sea. The nine founding initiators of Butendiek agreed that, "Of course, a 100% citizen wind farm would have been the preferred solution but, for a pilot project of this size, the inclusion of a strong, motivated partner is the best way to take the project forward". Butendiek initiators also stressed that the new German Infrastructure Planning Acceleration Act would significantly improve chances of rapidly implementing the project. > [Link](#)



Erection of the second Multibrid M5000 on tripod completed

The erection of the second Multibrid M5000 offshore wind turbines on a tripod in Bremerhaven was successfully completed on 9 December 2006. The plant, with a tower height of 98.5 metres, a nacelle weight of 200 metric tons and a rotor blade length of 56.5 metres, has delivered its first electricity by the end of 2006. Serial production of the M5000 wind turbine will begin in the coming year at Multibrid Entwicklungsgesellschaft mbH's production site in Bremerhaven. A manufacturing and mounting hall, commissioned by Multibrid, with direct access to the quay is currently being erected in the southern fishing harbour. > [Link](#)

Nexans supplies submarine cables for Horns Rev 2

Cabling manufacturer Nexans has been awarded the contract, valued at 30 million euros, to supply submarine cables to the Danish offshore wind farm Horns Rev 2. The laying of this cabling, with a total length of 42 km, should be completed in autumn 2008. > [Link](#)

Recommended reading

"Strategische Umweltprüfung für die Offshore-Windenergienutzung"

(Strategic environmental audits for offshore wind energy use) - the basics of ecological planning in the expansion of offshore wind energy in the German exclusive economic zone; Thomas Schomerus et al., 2006, ISBN-13:978-8300-2291-6 > [Link](#)