

WINDPOWER *Update*



Business:
Production –
nacelle assembly
streamlined

➤ Page 12



Sweden:
Nordex to build the largest
wind farm in Sweden

➤ Page 20



Asia:
N90 and N100
going on sale in Asia

➤ Page 24





8 OFFSHORE
6 MW turbine for offshore use

CONTENTS

- Background**
- 6 INTERVIEW WITH THOMAS RICHTERICH, CEO OF NORDEX SE
"We will be forging strong partnerships to extend our global business outside Europe on a sustained and profitable basis"
- 7 *Did you know ...*
- Engineering**
- 8 OFFSHORE
6 MW turbine for offshore use
- 9 UP, UP AND AWAY
New generation of hybrid tower
- Service**
- 10 INTERVIEW WITH CUSTOMERS
No one knows wind turbines better than the manufacturer
- Business**
- 12 PRODUCTION
Nacelle assembly streamlined
- Environment**
- 14 RESULTS OF STUDIES
Insatiable global hunger for energy
- 15 SOLUTION DEVELOPED
Protection for bats
- Europe**
- 16 GERMANY
Nordex to fund an endowed chair in wind power engineering
- 17 GREAT BRITAIN
Nordex UK awarded contract for a 52.5 MW wind farm
- 18 FRANCE
Largest N100 wind farm now on line
- 19 FRANCE/POLAND
Nordex supplying 32.5 MW to Poland and France
- 20 SWEDEN
Nordex to build the largest wind farm in Sweden
- America**
- 22 UNITED STATES
Nordex USA completing the Group's largest wind farm
- Asia**
- 24 ASIA
N90 and N100 going on sale in Asia
- 26 CHINA
Nordex awarded 49.5 MW project in China
- News**
- 27 *Board position in wind power industry association ANEV*
- 27 *Global Wind Day*
- Global**
- 27 *Worldwide installations*

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NORDEX PRODUCT PROGRAMME

Type	Capacity	Regulation	Wind class	Markets
Nordex N77	1,500 kW	Pitch	IEC 2	Asia, Asia-Pazific
Nordex N82	1,500 kW	Pitch	IEC 3	Asia, Asia-Pazific
Nordex N80	2,500 kW	Pitch	IEC 1	Europe, regions with height restrictions
Nordex N90	2,500 kW	Pitch	IEC 1	Europe, America, Asia-Pazific
Nordex N100	2,500 kW	Pitch	IEC 2 IEC 3	Europe, America, Asia-Pazific
Nordex N117	2,400 kW	Pitch	IEC 3	Europe, America





EDITORIAL

Dear readers,

In this issue of WindpowerUpdate, we would like to brief you on a selection of our new wind farm projects. For example, we recently received the largest contract awarded for an onshore wind power project in Sweden to date. As of summer 2012, we will be installing the “Blaiken” 150 MW wind farm. The successful development of the anti-icing system was a key reason for the award of this contract. In the United States, Nordex has completed its largest wind farm to date with 60 turbines. And in Germany, the owners of the Behrendorf wind farm, where Nordex turbines have been generating clean electricity since 1997, have decided to repower the old systems with N100/2500 turbines.

Since the beginning of the year, we have been offering our customers the N117/2400, the ideal turbine for light wind locations. The highest-yielding IEC3 turbine of its class, it has been enjoying very strong demand immediately following its release. This light wind turbine is scheduled to go into series production in mid 2012, with the prototype planned for installation at the end of 2011.

In the spring, we also unveiled our plans for our entry into the new offshore market segment. The preliminary result is the Nordex N150/6000, which we have developed specially for offshore use. With a rotor diameter of 150 metres, it has an installed nominal output of 6 MW. In addition, we are now also offering the N90/2500 and the N100/2500 on the Chinese market. To date, average installed capacity per turbine in China stands at 1.5 MW. With these more potent multi-megawatt wind power systems, our Asian customers will now also be receiving two of our Gamma Generation models.

Over the past few months, we have been modernising our main European facility in Rostock with a view to boosting efficiency and production quality in accordance with industrial principles. Together with the start-up of an ultra-modern coating factory for rotor blades last year, we have been setting the standards in our industry.

I wish you pleasant reading.

A handwritten signature in black ink, appearing to be 'Lars Bondo Krogsgaard'. The signature is stylized and fluid, with a long horizontal line extending to the right.

Lars Bondo Krogsgaard

INTERVIEW WITH:
THOMAS RICHTERICH
*“We will be forging
strong partnerships
to extend our global
business outside Europe
on a sustained and
profitable basis”*



➤ Thomas Richterich, CEO of Nordex SE

Mr Richterich, Germany recently announced a new era in the production of energy from 2020. What expectations do you have of this?

Berlin has made many landmark decisions ushering in a new era in the production of energy. In the long term, providers of renewable energies, particularly the wind power segment, stand to benefit from this in Germany and, later on, doubtless also in other countries. In the medium to long term, it is safe to assume that more onshore and offshore wind power systems will be built than previously planned. For this reason, we have reinforced our activities in our domestic market once more. By the same token, Germany is only one market out of many.

Specifically, how do you view the potential of the domestic market?

In the past few years, there was market potential in Germany for installed capacity of 1,500–2,000 megawatts (MW). Looking forward, this could well increase to 3,000–3,500 MW a year. However, I think that it will take at least two years for this additional market to be established.

Turning to the global market, how has demand for wind power systems fared over the past few months?

On a particularly encouraging note, demand picked up again substantially in the first half of 2011, both industry-wide and particularly also at our Company. Whereas new business across the sector as a whole was up around 11 per cent, order receipts at Nordex rose by an above-average 59 per cent. However, it will not be possible to commence work on all these new orders this year.

What major challenges do you currently see for the wind power industry?

We currently have a type of gold-digger mentality as a result of which this growth market is attracting more and more new manufacturers particularly from Asia. In addition, further local production capacity has been established in numerous countries as governments are creating corresponding incentives. The upshot of this is mounting competitive pressure.

DID YOU KNOW ...

... that Nordex UK has completed the extension of the "Kilbraur" wind farm and that with its 27 N90/2500 turbines, this is now the largest Nordex project in the UK and Ireland?

... that we have obtained an order from Eolia Renovables to supply 15 N100/2500 wind turbines in Spain and that the wind farm's annual energy yield is expected to be around 93,000 MWh?

... that we participated in several exhibitions and conferences in the southern part of Germany, presenting the N117/2400 turbine, which due to its great rotor sweep makes locations in the German regions of Bavaria, Baden-Württemberg and Hesse increasingly attractive?

What consequences does this have for Nordex?

We will be strategically realigning Nordex in a number of business segments. This particularly concerns individual regional companies. In the future, we would like to work with strong regional partners in certain areas. This also applies to off-shore business. The aim is for Nordex to grow as a strong international brand; however, we will not be acting as a fully integrated group in every sub-market in the world.

Can you give us a specific example to illustrate this?

In China the market has expanded sharply; at the same time, however, the proportion of international vendors has shrunk to around 10 per cent. Unfortunately, our previous strategy of achieving the greatest possible local content, a strategy which major competitors have also been pursuing, has not produced the desired results. This is why we have decided to realign this business. We now want to establish a joint venture with a Chinese partner. This will give us the greatest possible

access to the market as well as ensuring us of political support for our activities. To date, this has only worked well locally in the province of Ningxia; now, we are seeking a national solution.

How far has work on implementing these strategic measures advanced?

Following preliminary talks with potential partners, I am confident that we will be able to announce promising new alliances in the foreseeable future. One thing is clear: Nordex has a good name in the market as a vendor and developer of proven wind power systems. With this profile, the high-growth wind power market offers us many opportunities for growing our global non-European business on a sustained and profitable basis in conjunction with strong partners.

OFFSHORE

6 MW turbine for offshore use

At the Hanover Fair, we unveiled our plans for the entry into the new offshore market segment. "Our strategy is being driven by the development of a competitive product. For this purpose, we are acting on the trend towards third-generation wind turbines, which are characterised by a substantially greater nominal output and lower specific weights. Only in this way is it possible for a large market of sufficient relevance to emerge in the medium term," said Thomas Richterich, Chief Executive Officer of Nordex SE.

Experts assume that the offshore market will enter its first phase of maturity from 2015 onwards, with annual sales volumes of more than five gigawatts (GW). Richterich adds: "We have been preparing for this for a good two years." Thus, the company has hired an experienced team of experts in its new business unit Nordex Offshore GmbH, which covers the complete offshore value chain.

The preliminary result is the N150/6000, which has been developed specially for offshore use and is being unveiled in Hanover. With a rotor diameter of 150 metres, it has an installed nominal output of 6 MW. Compared to installed offshore turbines of this size the turbine will produce between 15–20 per cent more yield, compared to planned offshore turbines it is one of the largest and most efficient in the offshore market.

The specific weight of the tower head has been kept low thanks to the use of a new kind of direct drive. This impacts not only the costs but also the loads to which the entire system is exposed.

"Out at sea in particular, we must do everything we can to optimise the technical reliability of the turbine. With cost structures differing to those in the onshore market, we are able to implement a more complex drive system, namely a direct drive," explains Thomas Richterich. However, a special and substantially lighter version is to be used – a direct drive with a permanent magnet generator and a full power converter.

Nordex is engineering this drive design in conjunction with experienced suppliers and thus relying on proven technical details. Only system suppliers able to deliver the entire generator/converter system and who are market leaders in this area are being considered.

Thanks to the modular system design, assembly and servicing at sea are possible with the systems already available today. If necessary, components can be replaced simply, quickly and without dismantling the rotor. A condition monitoring system facilitates pre-emptive maintenance of critical parts. In addition, Nordex can fit out the N150/6000 with a helicopter platform if requested by the customer.

UP, UP AND AWAY

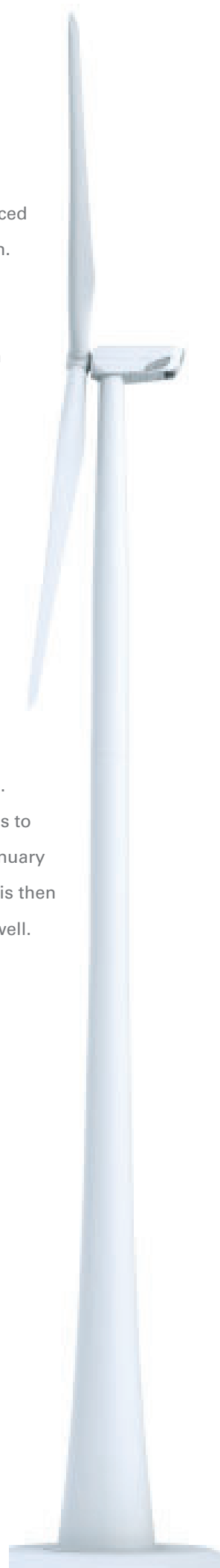
New generation of hybrid tower

Around the world demand is growing for turbines to make projects at lower-wind locations economically feasible. These machines not only require a large rotor diameter, but also have to achieve hub heights of 120 metres and much more. For these dimensions Nordex makes use of hybrid towers, consisting of a lower section made of concrete and tubular steel segments at the top. Together with our supplier Max Bögl, we are currently developing a 140 metre hybrid tower with prefabricated concrete components for the N100/2500.

In the past, we installed so-called in-situ concrete hybrid towers – for example for the N90/2500 prototype in Iven (120 metres) and in the “Dradenau” N100/2500 project in Hamburg (140 metres). Here, we manufactured the concrete tower directly on the construction site. By contrast, our supplier can cast the segments of the prefabricated hybrid tower in the factory. The advantage of this is that there are ideal climatic conditions there. On top of this, manufacturing costs are lower because series production is possible.

The new tower consists of reinforced concrete rings in the lower section. These can be flexibly transported, either as complete sections or as shell halves. The installation team initially places the rings on top of each other up to a height of 90 metres and then pre-tensions them with steel cables. This is followed by installation of the tubular steel segments, the nacelle and the rotor.

As of September, we shall be building the first three N100/2500 turbines in Germany with the new hybrid tower variant. The partially prefabricated tower is to go into series production as of January 2012. The next development step is then to design it for the N117/2400 as well.



INTERVIEW WITH CUSTOMERS

No one knows wind turbines better than the manufacturer

Eight N54 turbines with an installed capacity of 1 MW each have been in operation at the Behrendorf wind farm, 15 kilometres north-east of Husum in Germany, since October 1997. In March 2011, a decision was made to repower the N54 turbines with more powerful units. WindpowerUpdate spoke to Claus-Dieter Thiesen of Bürgerwindpark Behrendorf GmbH & Co. KG and Eugen Siefert, Managing Director of Zweite Bürgerwindpark Behrendorf GmbH & Co. KG.

Mr Siefert, you have been operating eight Nordex N54 turbines since 1997. How have they been performing for you?

Siefert: "In the mid-nineties, seven citizens of Behrendorf decided to jointly establish a wind farm to generate clean electricity from wind. After 14 years of operation, we can say that the wind power systems have generated the previously calculated output and we are all very satisfied with the turbines and the service provided by Nordex."

You are now planning to replace the existing turbines at the site with more powerful ones. Why are you repowering after only 14 years?

Siefert: A further 92 local citizens have now joined forces in a second company known as Zweite Bürgerwindpark Behrendorf GmbH & Co. KG to take a share in a wind farm. The aim is to achieve an even greater yield from the wind farm. And that's why we want to repower. We wanted to install turbines in the 3 MW class."

Thiesen: "We have been operating six Nordex N80/2500 turbines in the neighbouring Erste Bürgerwindpark Ahrenviöl/Ahrenviölfeld GmbH & Co. KG since 2001. The production output of this wind farm has been very satisfactory in the ten years to date. This is why the newly established Zweite Bürgerwindpark Behrendorf also decided to select turbines of a similar output for Behrendorf."

You have now opted for the N100 with an output of 2.5 MW in Behrendorf ...

Siefert: "We had originally not considered Nordex as it does not have any 3 MW turbines in its range. But then we did look at it and compared the offers of the five largest suppliers in Germany. The feasibility study showed that the N100 with an output of 2.5 MW offered the best value for money in the light of the costs, financing and projected yield at the site after periods of 15 and 20 years. This surprised me, too. Calculations indicated that despite its smaller installed capacity the N100 is economically the most attractive turbine in terms of the average wind speed at the site. Our committee of five then unanimously made the decision to go with Nordex."

Aside from the feasibility study, were there any other criteria prompting you to invest in Nordex equipment again?

Siefert: "The commitment of Nordex's solid principal shareholder Skion backed by Mrs Klatten gave us peace of mind in our decision. This also proved to be an advantage when we sought financing from the banks."

Thiesen: "A further aspect in the recommendation which I submitted to the committee was the many years of experience with Nordex Service ..."



... how satisfied were you with the quality of our service?

Thiesen: "In the first two years, the service in Behrendorf was not as good as we had hoped. However, later on, we felt very comfortable with Nordex and I have been very satisfied with the service and the way that it is structured for many years. Whenever there have been any problems in the last few years, we have sat down to discuss them and ultimately always come to a solution which was favourable to both sides."

What sets Nordex Service apart?

Thiesen: "What is so special about Nordex Service is its reliability. The technicians call up in advance to make an appointment. I am also impressed by the value for money. From my contacts with other operators, I know that Nordex is on a par with its competitors. And as a producer, Nordex is intimately acquainted with its own turbines and can guarantee a reliable supply of spare parts at all times. With the experience which we have of Ahrenviöl/Ahrenviölfeld, we have a very good basis for comparison in terms of turbine performance, but can also consider the quality of service in our future decisions concerning new turbines. And the service for this wind farm with its multi-megawatt turbines is equally as perfect."

Have you also tried the services provided by other operators?

Siefert: "We once thought about switching to an independent service provider. But no one knows their own wind power turbines better than the manufacturer themselves. That's why we have always bought service from Nordex. With such high-tech equipment it is never possible to rule out the occurrence of faults. External service-providers do not have the necessary experience or understanding of the turbine. Over the 14 years we have experienced many positive days as well as a few which were less positive. What has always impressed me is that the service staff worked on the turbines as if they were their own. They have always tried to keep the amount of work required as small as possible. There was never any major damage and any damage that did arise was covered by insurance. The repair and maintenance costs were always good. Similarly, remote monitoring is very impressive and the staff can always be reached."

You have opted for the premium full-service package for the new turbines. What is your reason for doing so?

Siefert: "We on the committee want to minimise risk as far as possible. With the premium service package we unanimously selected the right product. With a term of 15 years, it offers the 92 shareholders the necessary security for their investment thanks to its broad scope."

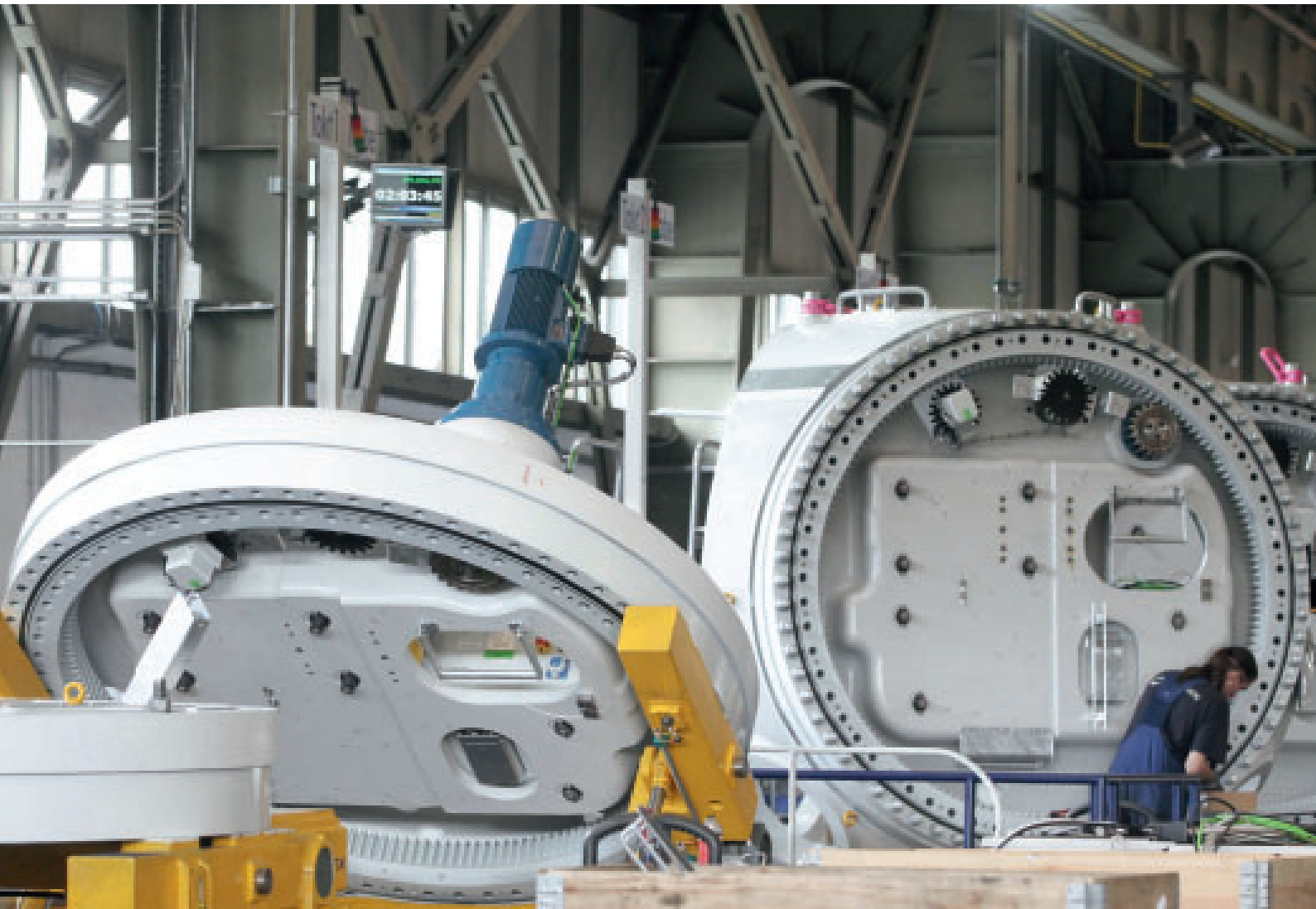
PRODUCTION

Nacelle assembly streamlined

We have modernised our European production centre in Rostock in line with industrial principles. The aim was to significantly improve the efficiency and production quality of the plant. "We have introduced professional series production in order to make us more competitive," explains COO Dr Marc Sielemann. "The sector is developing at a dynamic pace and customers expect more flexible deliveries from the manufacturer."

With this in mind, we have converted the nacelle and switch cabinet factory to continuous flow production. The introduction of stable and standardised processes forms the basis of reliable deliveries to customers and guarantees high-quality products.

The result of this modernisation is impressive: standardised work processes and shorter throughput times have made it possible to triple capacity in the two-shift operation from 330 to around 1,000 turbines a year. This equates to output of 2,500 MW. We have reduced the production time and rotating stock by some 30 per cent.





Overall, we have set up three lines for the main components – the nacelle, hub and drive train and three further lines for pre-assembly. Nordex decided in favour of a rail system with friction wheel drive. To achieve this, the technology had to be adapted to the existing hall layout. The most suitable solution proved to be a skid system with an angular transfer unit designed to take heavy weights. For construction of the switch cabinets the skids are moved by a drag chain conveyor. In this way we have converted the entire nacelle assembly to continuous flow.

However, this new technology is only one part of the changeover. The organisational changes made are of key importance. For example, dock assembly made it difficult to determine the actual production status and the picture presented by the production hall was that of rows of shelves full of

material. Now the assembly lines are designed in accordance with the principle of synchronisation and the required material is available directly at the assembly station – we have minimised our stock-keeping and moved it out of the hall.

On top of this, large screens now inform all staff about progress in the respective cycle and along the entire production line. Any disruptions in the assembly process are immediately evident and can be remedied in good time. This minimises downtimes and the error rate.

“For the efficiency programme in our production division we were able to adopt many principles from other industries,” said Dr Sielemann. “We attached particular importance to transparency and organised troubleshooting as they make it possible for us to continuously optimise production.”



RESULTS OF STUDIES

Insatiable global hunger for energy

According to the latest BP Statistical Review of World Energy, energy consumption grew more sharply in 2010 than in any year since 1973.

Demand for oil, coal and gas was stronger in 2010 than it had been in almost the past 40 years. In addition, China replaced the United States as the world's largest energy consumer. Energy consumption in Asia alone rose by one fifth. However, it also climbed in industrialised nations more sharply than at any time since 1984.

According to the study, global energy consumption rose by 5.6 per cent and thus more quickly than global economic growth of 4.9 per cent.

This increase in energy consumption was also accompanied by a rise in emissions of harmful greenhouse gases, which shot up more quickly than in over four decades in the wake of the economic recovery in 2010. The International Energy Agency calculates that global carbon dioxide emissions came to 30.6 gigatons in 2010, an increase of 1.6 gigatons.

Looking forward, there is no sign of any decline in energy consumption and, hence, a drop in CO₂ emissions. None of the emission-reduction goals agreed upon in the Kyoto Protocol, which expires in 2012, are being achieved as energy requirements are rising in most countries. Looking ahead over the next few years, substantially more energy

will be consumed around the world, accompanied by an increase in emissions.

What is therefore required is spending on specific measures for protecting the climate and also for producing clean electricity from renewable energies. In addition, a study conducted by Greenpeace International in June 2011 shows that no energy sector is currently growing more quickly than renewable energies: 26 per cent of aggregate power station capacity which went on line from 2000 to 2010 around the world arose from renewable energies. Most of this was provided by wind power systems.

Yet, here as well a change emerged in 2010. Last year, China not only registered high energy consumption but also achieved the greatest growth in electricity produced from renewable energies. More wind power systems were installed in this country in 2010 than anywhere else. In fact, the BP report states that China has exceeded the United States in the volume of electricity generated from wind power, which accounts for 1.2 per cent of electricity production in China. It is right – both economically and in the interests of the environment – to gradually reduce dependence on fossil sources of fuel, such as oil, coal and gas, which are becoming increasingly more expensive and generate harmful greenhouse gases.

SOLUTION DEVELOPED

Protection for bats

Bats are a protected species. For this reason, wind farm construction projects always face obstacles wherever there are large populations of bats. Working together with French company Biotope, we have developed a solution which deactivates wind turbines in the event of a high probability of bat activity.

Depending on the type of bat and the region, the animals fly between April and October, at dusk and in certain weather, temperature and wind conditions. This data is stored by Biotope in the form of algorithms. Current data on the weather etc. is transferred from the wind farm to Biotope

on a real-time basis. It is then used to calculate the probability of bat activity, allowing the turbine to be automatically deactivated if necessary.

As Biotope’s exclusive partner, Nordex is the only wind turbine system vendor to offer this service. Preliminary tests during two summers at the Bouin wind farm in France show that the incidence of bat mortality is reduced by around 70 – 80 per cent with a production loss of only 0.2 per cent. This proves the efficacy of our system. Despite this, infrared systems are to be set up at the site in the near future in the interests of more precise observations and testing.



GERMANY

Nordex to fund an endowed chair in wind power engineering

An endowed chair in wind power engineering is to be established at the Faculty of Mechanical Engineering and Marine Technology at the University of Rostock, and should be ready in time for the autumn 2011 semester, with international applications being invited for the position. The chair is being funded with an endowment provided by Nordex. The endowed chair at the university will initially be established for a period of five years and will be tied to a Master's course, which could commence in the summer 2012 semester.

"I am grateful for Nordex's dedication. We want to cover the demand for good engineers in the regional economy ourselves and thus address the shortage of qualified specialists," the rector of the University of Rostock, Prof. Dr Wolfgang Schareck,

said. As well as this, the new course will additionally reinforce the university's engineering faculties. Explaining the reasons for our decision to fund the endowed chair, CEO Thomas Richterich said, "as one of the pioneers in the wind power industry, Nordex is very keen to additionally extend its technological lead".

What is more, Nordex is also interested in establishing research partnerships with the holder of the endowed chair, some of which can be executed at our own laboratories. We are spending on laboratory and testing equipment so as to speed up the development of new turbines and to enhance product quality. For example, we have been operating the largest test stand for rotor blades in Germany for a number of months now.



GREAT BRITAIN

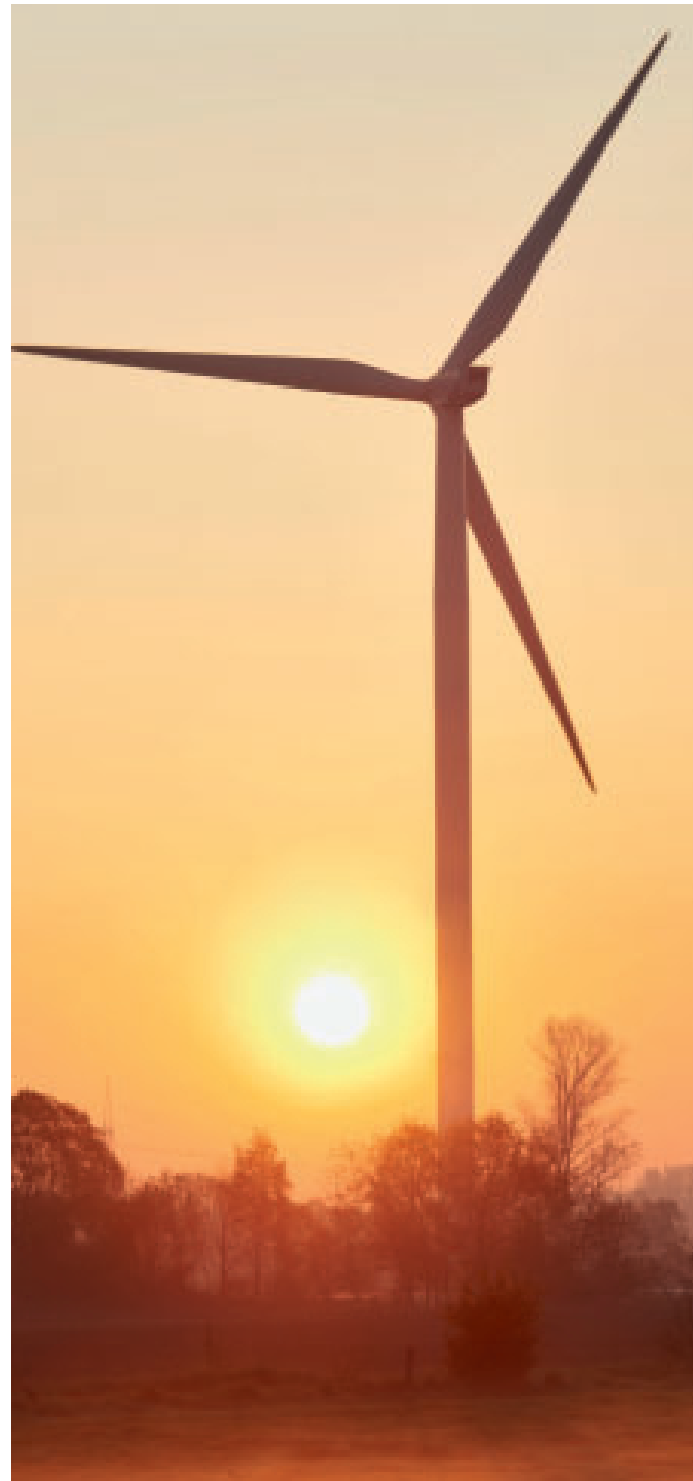
Nordex UK awarded order for 52.5 MW wind farm

Nordex UK has obtained an order to supply 21 N90/2500 wind turbines. The customer is a joint venture company, majority-owned by Statkraft, Europe's leader in renewable energy. The 21 turbines are to be installed in the Scottish Baillie Wind Farm during August 2012. Statkraft has also signed a Premium Service Agreement with Nordex for five years.

Baillie Wind Farm is to be built near the north coast of Scotland, and so enjoys high average wind speeds over 9 m/s, requiring a robust machine certified for high-wind sites in accordance with IEC 1a. After raising the wind class suitability in the whole multi-megawatt product family, Nordex now offers the N90/2500 for these locations. "The N90/2500 is the most cost-efficient machine providing high wind yield at a tough site. In the UK and Ireland there are many invitations to tender for high-wind regions. This is why the IEC 1a certificate for the N90/2500 offers a major opportunity on the market," says Bryan Grinham, Managing Director at Nordex UK.

The Baillie Wind Farm was developed by Steven and Thomas Pottinger, who remain partners with Statkraft and are developing further wind turbine sites in the area. To comply with the restrictions of 110-metre tip height, Nordex is setting up the 21 turbines on 65-metre towers. These are able to generate a yield of approximately 180 gigawatt hours a year, sufficient to meet the demand from some 39,000 British households.

"We are very pleased to be working with Statkraft. During the negotiations we showed once again that we are able to react flexibly to the complex requirements of a major utility," says Lars Bondo Krogsgaard, CSO Sales and Marketing at Nordex SE.



FRANCE

Largest N100 wind farm now on line



With 30 N100/2500 wind turbines and a total capacity of 75 MW, the Germinon wind farm located to the west of Paris is currently the largest Nordex wind farm in France. On 6 April 2011, the customer GDF Suez officially inaugurated the wind farm.

Germinon features the first Gamma Generation series turbines, which Nordex launched in spring 2010. In developing this high-efficiency class, Nordex drew on its ten years of experience in the operation of multi-megawatt turbines. The Gamma Generation combines proven technology with specific enhancements derived from the latest research and meeting current market requirements.

With the N100/2500 turbine, utility GDF Suez selected a wind power system which makes optimum use of the mean wind speeds of 7.4 m/s prevailing at the site. As a result, the wind power systems will deliver a combined total of some 226,000 MWh of clean energy each year, sufficient to cover the electricity requirements of around 265,000 people.

Nordex handed over the wind farm to GDF Suez back in autumn 2010. Shortly after connection to the grid, the majority of the turbines achieved a reliability of over 97 per cent.

During the execution of the project last year, Nordex organised more than 360 heavy-load hauls to transport the turbine components to their destination. In fact, if all the towers' segments were to be laid out end to end, they would have a total length of three kilometres.

FRANCE/POLAND

Nordex supplying 32.5 MW to Poland and France

In summer we received two new orders from Poland and France. We will supply eight N100/2500 turbines for a Polish power supplier in October 2011. In France, the private project company Vent Local has ordered five N90/2500 machines. We will build the wind farm of the same name on a turnkey basis with the turbines being delivered in August this year. Both the Polish and the French customers have also signed a Premium Service Agreement for a period of 15 and 10 years, respectively.

The French "Jouy en Pithiverais" wind farm is situated in the Beauce region between Paris and Orléans, where Nordex Service already has some

80 turbines under contract. The five N90/2500 turbines are to generate almost 32,000 MWh of electricity a year.

We will be setting up the Polish project in the north-west of the country. Its annual energy yield is expected to be around 50,000 megawatt hours. It is the first N100/2500 wind farm in Poland, and at 20 MW is currently the third-largest Nordex project in the country. "We expect the Polish market to continue to perform well. In the future, we will certainly also be successful here with our new large turbine, the N117/2400," says Lars Bondo Krogsgaard, CSO at Nordex SE.



SWEDEN

Nordex to build the largest wind farm in Sweden

In spring, Nordex won the largest order awarded for an onshore wind project in Sweden to date: as of summer 2012 we will be building "Blaiken", a 150 MW wind farm. The customers are Skellefteå Kraft, a leading energy supplier in Sweden, and Fortum, one of the largest power utilities in Europe, based in Finland. Skellefteå Kraft and Fortum have placed a firm order for 60 turbines for "Blaiken", thus accelerating the originally intended call-off schedule of the master agreement entered into last year. The N100/2500 machines will be fitted with our new anti-icing system for rotor blades.

The successful development of the anti-icing system was a key criterion for the order. Nordex designed this system especially for sites where there is a risk of ice forming on the rotor blade. This can result in substantial production losses. An integrated heating system now prevents icing, thereby maximising the yield.

In autumn 2010, we installed the first N100/2500 turbines with anti-icing in "Jokkmokksliden", the forerunner project to "Blaiken". We tested and optimised the system on the basis of three prototypes and one reference machine. "The cost-benefit ratio of anti-icing persuaded us to have all the turbines equipped with this innovative system," says Risto Andsten, Vice President Renewable Energy, Fortum.

"Our new anti-icing system is the result of collaboration between different functions within our company, and we are pleased to now see the system put into commercial operation on one of the largest projects in Europe. We are now able to offer an attractive option for all customers planning projects at locations with ice and frost," says Lars Bondo Krogsgaard, Chief Sales Officer at Nordex SE.



UNITED STATES

Nordex USA completing the Group's largest wind farm

In 2008, when Nordex established itself in the American market, the decision was driven by the recognition that the country's wind resource was among the best in the world and the tremendous opportunity that created. Although the economic downturn and uncertainties in the political framework governing the energy sector have since affected the pace of growth in the United States, the country continues to hold great promise for Nordex and the rest of the industry. That potential was demonstrated when Nordex USA, Inc. announced in July the completion of the largest project ever undertaken by the Nordex Group. Cedar Creek 2, jointly owned by BP Wind Energy and Sempra Generation, also one of the largest projects in the state of Colorado, boasts 60 Nordex N90/2500 turbines. The logistical challenges of preparing and delivering a project of this size were significant. If the blades and towers for the project were placed end-to-end, they would stretch for 8 miles (13 km). During the peak of construction, more than 350 workers were employed at the site.

The wind farm is located on 30,000 acres about 2 hours north-east of Denver, the "Mile High City" (1.6 km above sea level). The power produced by this 150 MW project, enough to supply 45,000 American homes, has been purchased by Public Service Company of Colorado, an Xcel Energy company, under a 25-year agreement. "We are pleased that BP chose Nordex turbines for Cedar Creek 2, one of the largest projects in Colorado.

Our relationship with BP dates back to 2002 when Nordex first supplied turbines to one of their refinery sites in the Netherlands," commented Ralf Sigrist, President and CEO of Nordex USA, Inc. "As a growing global company it is important for Nordex to build on its connections with existing customers to continue our expansion in America."



The site's strong wind resource made it a perfect location for Nordex' high-yielding N90/2500 wind turbine with 80 m tower height. Recognised for its reliability, the machine is a stalwart in the company's multi-megawatt Gamma Generation – a proven product line with 11 years of operating history and more than 1,500 turbines on the grid.

Nordex was responsible for the turbine supply and commissioning and will continue to provide service and maintenance under a 5-year contract. The mile-high altitude required some special adaptations, including increasing the turbines' heat exchanging capacity.

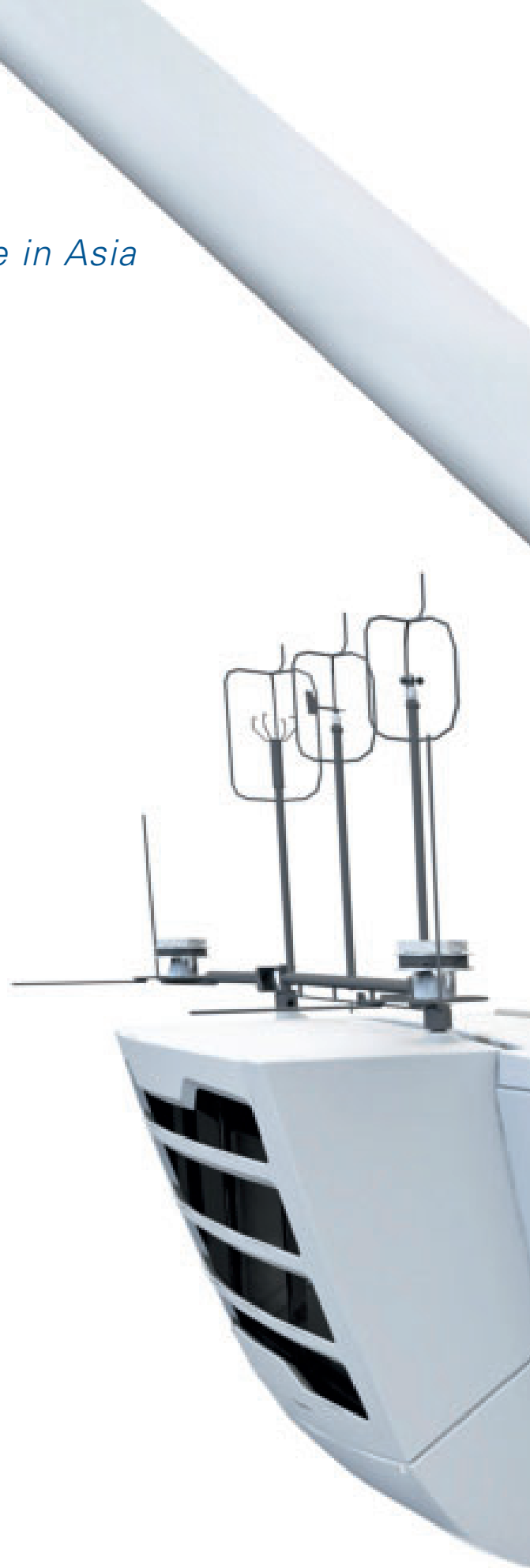


ASIA

N90 and N100 going on sale in Asia

In Asia, we are now launching the N90 and N100 2.5 MW turbines to generate fresh impetus for the local market. Our Chinese regional company is handling sales and marketing centrally for this region, while our local partner, IHI, will be addressing the Japanese market.

“Average installed capacity per turbine in China stands at 1.5 MW. By positioning ourselves at this stage and launching a more powerful turbine on the market early on, we have a good chance of benefiting from market growth,” explains Günter Steininger of product line management. “Following the official launch on 1 January 2011, we conducted our first road show in China with the 2.5 MW class and have also already commenced marketing activities in Pakistan. Thus, Nordex regional engineering employees in China have already travelled to Germany to receive instruction on the technology underlying the multi-megawatt turbines. Preliminary sales training has already been completed and is to be intensified over the next few months. At the moment, however, key attention is being paid to the necessary localisation of the product with the involvement of such departments as procurement, engineering and quality assurance, which are responsible for identifying the local suppliers to be utilised as well as the material to be imported for Europe or the United States.



Cross-disciplinary localisation plan

Preliminary sourcing activities have also commenced to determine which components of a suitable quality we can procure in China, and precisely where from. Steininger explains: “The knowledge of the market which we have gained over the last few years is standing us in good stead in this respect, as is the fact that we are already importing casting

materials from China to Europe.” In addition, engineering must identify the adjustments which must be made to the previous turbines to ensure successful deployment in Asia. “With the experience we gained when launching the 1.5 MW class, we know the systems for which adjustments will be necessary. Even so, these changes must be clearly defined in the interests of market conformity.”





CHINA

Nordex awarded 49.5 MW project in China

Nordex is continuing its long-standing business partnership with Ningxia Electric Power. The Chinese power supplier has now ordered 33 S82/1500 machines for its “Niushoushan I” and “Niushoushan II” wind farms, thus increasing its Nordex portfolio to more than 250 MW.

The “Niushoushan” projects are to be installed to the south-east of the city of Qingtongxia, in the region of Ningxia. The wind turbines have been delivered since summer 2011 and will produce more than 130 GWh per year.

WORLDWIDE INSTALLATIONS

	Diverse up to 1 MW	N60/1300 N62/1300	S70/1500 S77/1500	N82/1500	N90/2300	N80/2500	N90/2500	N100/2500	Total installations	Total (MW)
Austria	6	3	-	-	-	-	-	-	9	5.30
Belgium	-	-	-	-	-	-	-	2	2	5.00
Bulgaria	-	4	-	-	-	-	1	-	5	7.70
Canada	-	20	-	-	-	-	-	-	20	26.00
China	204	41	232	3	-	-	-	-	480	519.40
Columbia	-	15	-	-	-	-	-	-	15	19.50
Czech Republic	-	-	3	-	-	3	-	-	6	12.00
Denmark	125	52	-	-	2	-	1	-	180	148.55
Egypt	105	-	-	-	-	-	-	-	105	63.00
Estonia	-	-	-	-	8	-	-	-	8	18.40
Finland	-	3	-	-	-	-	-	-	3	3.90
France	58	35	-	-	145	27	160	56	481	1,022.95
Germany	544	353	451	1	85	35	32	20	1,521	1,868.65
Greece	46	-	-	-	-	-	24	-	70	88.85
India	263	-	-	-	-	-	-	-	263	5785
Ireland	-	4	-	-	-	14	45	-	63	152.70
Italy	2	-	44	-	90	14	78	-	228	504.60
Japan	16	29	-	-	-	2	9	-	56	73.10
Netherlands	10	-	-	-	-	25	13	-	48	102.20
Norway	-	-	-	-	-	16	-	-	16	40.00
Poland	1	-	7	-	9	4	20	1	42	93.95
Portugal	3	32	-	-	96	-	48	-	179	384.80
Romania	-	-	-	-	-	-	-	4	4	10.00
Spain	25	56	-	-	-	-	22	-	103	142.80
Sweden	1	-	-	-	-	-	53	9	63	155.60
Turkey	-	-	-	-	-	-	140	30	170	425.00
United Kingdom	9	65	-	-	26	123	84	-	307	668.40
USA	12	12	-	-	-	-	106	8	138	311.45
Others*	21	-	-	-	-	-	-	-	21	11.70
Total installations (MW)	1,451	724	737	4	461	263	836	130	4,606	
Total (MW)	757.85	941.20	1,105.50	6.00	1,060.30	657.50	2,090.00	325.00		6,943.35

Total installations: 4,606 Total MW: 6,943.35

As of: 1 August 2011

*Others: Australia, Belarus, Hungary, Israel, Latvia, Luxemburg, Russia, Syria, Uruguay. (Total countries: 37.)

SHORT NEWS +++ SHORT NEWS +++ SHORT NEWS +++ SHORT NEWS

Board position in wind power industry association ANEV

The members of the Italian wind power industry association ANEV ("Associazione Nazionale Energia del Vento") have elected Francesco Paolo Liuzzi, the Managing Director of Nordex Italia, to the association's board. In this honorary position, he will be involved in all major decisions affecting the wind power industry in Italy. "I am looking forward to these tasks, which entail great opportunities for our industry," says Liuzzi.

Global Wind Day

On 15 June 2011, we took part in Global Wind Day in numerous countries. Global Wind Day was initiated by EWEA (European Wind Energy Association) and GWEC (Global Wind Energy Council). In Germany, we joined other producers, developers and banks to organise a stand, which was visited by around 450 representatives from politics, the private sector and industry associations. It was held at the Berlin Technical Museum, which is planning a permanent exhibition on wind power.

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