The magazine
for success with wind

Towards 4.0 MW: The evolution of the 3.5 MW platform

eno's engineers are pulling out all the stops to upgrade the capacity. You can find out more about how the performance is being improved and the efficiency increased. / on page 8

ENO mag

Evolution of 3.5 MW-Platform

With 3.5 MW of nominal output, the eno 114 and eno 126 are already one of the highest performing wind turbines in this segment. The output update* to 4.0 MW leads to a yield increase of up to 7%. Your wind power becomes even more profitable.

*Available in 2017

ENO ENERGY

Success with wind.

www.eno-energy.com

Content

08
construction + technology

Towards 4.0 MW:
The evolution of the 3.5 MW platform

12
eno – news mix

Editorial

Dear readers,

After the institutions drove through the amendment to Germany's Renewable Energy Sources Act, EEG 2017, before the summer break at what seemed like breakneck speed, the industry is now trying to adjust as swiftly as possible to the massive changes stipulated within it. In particular the introduction of the tendering system in 2017 is still subject to considerable uncertainties.

As has been laid bare by our guest author Dr Karsten von Blumenthal, who is a distinguished analyst from First Berlin Equity Research GmbH, especially the smaller players in the wind industry will have to pull out all the stops in order to maintain their market position.

However, the analyst's recommendations correspond quite well to the course that eno energy has been anyway adopting. This includes expanding activities in foreign markets – in particular the attractive French wind market where eno is already successfully operating, intelligent new forms of collaboration, expanding the service sector as well as increasing the efficiency of the system technology.

With the performance update for the 3.5 MW platform, which will be available next year, the Rostock manufacturer will significantly increase its output in MW-hours. The eno 114's availability is also stabilising at a high level and will continue to increase towards achieving above-average performance.

With a growth in eno wind turbines of almost 40 MW, the company has also enjoyed the best first half-year in its corporate history.

I wish you an enjoyable read.

Andreas Jessel
Head of Marketing + Communications

IMPRINT Author eno energy GmbH | Am Strande 2 e | 18055 Rostock | Germany | fon: +49 (0)381 . 20 37 92-0 | fax: +49 (0)381 . 20 37 92-101 | info@eno-energy.com | www.eno-energy.com | **Editing** Andreas Jessel | **Layout** WERK3.de | **Printing** OPTIMAL:MEDIA | **Paper** Satimat Green 60 % Recycling, 40 % FS C | | **Published** sporadically | **Photos** eno energy | Sebastian Krauleidis | Forschungsgemeinschaft für Logistik e. V. | Anne Zarncke | Norbert Fellechner | Ulrich A. J. Mertens | fotolia.com: Rico K./styleuneed/Coloures-pic/aguiters/blitzkrieg

Guest article

New EEG Act brings wind of change

The amendment to Germany's Renewable Energy Sources Act (EEG 2017) brings profound changes for the onshore wind industry. The feed-in tariffs are no longer set by the government but in a competitive process through tenders. A significant decline in the amount of feed-in tariffs is therefore likely. Although wind farms approved by the end of 2016 will still retain the old fixed remuneration according to EEG 2014, a special degression of 1.05 % per month applies from March to August 2017, i.e. six times. From October 2017, the degression amounts to 0.4% per quarter for four quarters. If the target value for the gross growth of 2,500 MW is exceeded, additional degression steps per quarter then apply.

»New business is expected to decline and the competition is intense.«

The tenders are an effective tool for limiting growth. In addition to the Germany-wide limitation of the quantity, in so-called grid bottleneck regions the tender volume will be temporarily limited to 58% of the average growth in these regions from 2013-15.

For onshore wind, 2,800 MW gross per year is set to be tendered during the next three years, i.e. 2017, 2018 and 2019. Even under the most optimistic assumption that all tender-winning projects are actually realised, the German wind market is likely to shrink considerably over the next few years and by 2018 at the latest. By way of comparison: In 2014, additional growth reached a record level of 4,750 MW and 2015 also saw very strong growth (3,731 MW). In the first half of 2016, net growth amounted to 1,892 MW (+ 73 % y/y). At the end of May, projects with a volume of about 3,200 MW were approved. Most of these are likely to be realised by the end of this year, which means that this year is also expected to see peak growth.

The conclusion for all stakeholders: New business is expected to decline and the competition is intense. Declining feed-in tariffs are likely to lead to price and margin pressures throughout the value chain. Let's therefore take a look at the various players along the value chain and the specific challenges that they face.

Project developers

Until now, the project developers only competed for suitable sites; in future they will also now be competing as to the amount of the feed-in tariff. Whereas previously gaining approval in accordance with the German Federal Emission Control Act (BImSchG) was the major obstacle for constructing a wind farm, in future every BImSchG-approved wind farm project must also be successful in the tendering process. The aim of the tendering is to only award contracts to the most cost-effective projects. Projects will be awarded contracts until the tender volume is reached. The first bidding round takes place on 1 May 2017 and has a volume of 800 MW. Projects that bid too high will not be considered. This means that projects that are not successful in a bidding round will not be constructed for the time being. If these projects are also not successful in further bidding rounds, the project developer will not be able to recoup its project development costs. If a project is only successful after several bidding rounds, the project developer will have to be able to financially maintain the longer-term capital commitment.

Since the purchasing advantages and economies of scale mean that larger projects are usually more cost-effective

► Much discussed: EEG 2017, legal texts and practical seminars

per MW than smaller projects, project developers are likely to be in a better position with such larger schemes. Project managers who develop a variety of projects and enter the bidding rounds with them have a better chance of being awarded a contract than project developers with just a few projects. The financial strength is also more important because there is a greater risk that a BImSchG-approved project is not built. A financially strong project developer will be in a better position to cope with such a setback than a financially weaker one.

Conclusion: Financially strong, major project developers with a pipeline of many large projects have a clear advantage. The cost-effectiveness of projects will be of decisive importance in future and highly accurate project costing will protect against nasty surprises once projects have been awarded a contract.

Wind turbine manufacturers

The increasingly intense competition in Germany means that wind turbine manufacturers are likely to see a drop in orders, which will lead to a lowering of prices. However, the wind turbine manufacturers will be able to increasingly rely on foreign markets to compensate for the decline in demand. For example, the French market will offer considerable potential over the next few years. In addition, the wind turbine manufacturers can increase the reliability and efficiency of their turbines even further, thus increasing the specific output (MWh/MW). The development of the last two decades has shown the enormous technological progress that has been made with wind power technology. For example, the average capacity of a wind turbine in the first half of 2016 was 2.8 MW. This was just over 1.5 MW for wind turbines installed in 2003. The tender procedure will also make it more important for wind turbine manufacturers to focus on those project developers whose chances of success are highest.

Conclusion: International wind turbine sales, close contacts with strong German project developers, technological advances and cost reductions will be the means to counter the headwind in the German market.

Wind farm operators/investors

For wind farm operators, the internal rate of return for their wind farm assets is the decisive measure of profitability. The extremely low interest rates (government bonds currently offer mostly negative returns!) should continue to particularly whet the appetite of financial investors for wind farms. However, with an average of 2,800 MW p.a. up for tender, there will be a shortage of offerings. This will increase competition among potential buyers of wind farms, which is likely to increase margin pressure

Conclusion: Wind farms will remain a high yielding asset class, but the internal rate of return for wind farms is expected to fall. Efficient asset management that responds quickly to technical defects of individual wind turbines, which increases the utilisation of the wind turbines through predictive maintenance and which closely links the technical aspects with the commercial side will gain in importance.

Outlook

The increasing competition initiated by EEG 2017 is set to lead to a consolidation of the onshore wind industry. Larger, financially stronger players hold the better cards here. Smaller players should strengthen their market position through collaborations or establish themselves in niche markets. The beginning of the consolidation wave can already be observed. Among the wind turbine manufacturers, Siemens has acquired a majority stake in the Spanish manufacturer Gamesa. The No. 1 in the market among the independent green electricity producers, Capital Stage AG, is planning to acquire Chorus Clean Energy AG.

Dr Karsten von Blumenthal
Senior Analyst
First Berlin Equity Research GmbH

First Berlin

Dr Karsten von Blumenthal

trained in banking and is a graduate economist. He worked from 2001 to 2002 as an economist at dit (today Allianz Global Investors) and from 2003 to 2006 as a research assistant at the Institute of Finance (IfW) at the University of Hamburg. From 2007-2010 he worked as an equity analyst at SES Research, a subsidiary of the Hamburg-based private bank M.M.Warburg, where he developed the coverage portfolio in the renewable energies sector. He is currently an equity analyst at First Berlin Equity Research for the cleantech sector, and has for many years advised companies from this sector, particularly in the wind energy, photovoltaic, fuel cells and cogeneration fields.

/ First Berlin Equity Research

First Berlin Equity Research provides banks, asset managers and other institutional investors with independent equity research and market intelligence in the small- and micro-cap companies field. The research team, which consists of experienced analysts, analyses companies from a variety of sectors specialising in cleantech, real estate and biotechnology. Customers in the cleantech sector include 2G Energy AG, Energiekontor AG and PNE Wind AG.

www.firstberlin.com

New financial structure for the eno Group

Interview with Commercial Director Robert Jantzen

Mr Jantzen, last year the eno Group turned its finances upside down. Which objectives were the Executive Board pursuing with this profound change?

The eno Group has grown rapidly in recent years, whereby various bilateral financing building blocks have been used. The new financing structure was therefore aimed at firstly harmonising the financing agreements, for example with regard to the reporting obligations, and secondly with finding new funding partners to accompany the eno Group on its chosen path.

What are the essential building blocks for the new financing structure and when will the process be completed?

The new financing agreements, which included a syndicated loan agreement and a bilateral current account loan agreement, were concluded at the end of 2015. In total, the eno Group therefore now has extended working capital lines of credit amounting to 21.3 million euros. A significant increase in the available credit line was agreed in parallel with deposit insurers.

The financing negotiations were concluded with the rollover of the corporate bond by two years from spring 2016.

The new financing concept enables the eno energy corporate group to sustainably pursue its chosen growth path. In addition, the syndicated loan agreement provides the possibility to add other financial partners when necessary.

The rollover of eno's bond at the beginning of this year attracted the attention of the media and experts in the SME bond field. What is the situation now following the favourable decision process for eno energy?

We first communicated our plans to the capital market for integrating the corporate bond in the future-oriented financing concept in the middle of 2015. While the instrument for bank rollover loans is a standard procedure, there was little experience with bonds. Furthermore, these experiences resulted from restructuring situations. In this respect our plans caused corresponding turbulence in the capital market, which among other things became evident through the massive stock market losses as a consequence of our announcement.

With the conclusion of the financing agreements and news from the operative business, eno energy managed to supply

► eno 114 at Teutschenthal Wind Farm

corresponding arguments in the following months and convince bond investors about the rollover.

In June this year, the deferred conditions precedent to the rollover were fully completed. While the bond investors will enjoy an attractive interest rate for two more years at a time of low interest rates, eno energy will use the period until the bond matures to further optimise the capital structure, whereby the redemption of the corporate bond represents an essential aspect here.

Is the company also planning in future to issue participation opportunities for investors?

The participation opportunities used in the past by eno energy need to be differentiated between two levels. At the company level, participation certificates and corporate bonds have been issued. However, due to the significant number of insolvency and restructuring cases, we currently believe that there is no market for either instrument.

At the project level, participation opportunities for investors are quite conceivable. It needs to be noted, however, that the regulatory hurdles for such deals have increased significantly in recent years. Appropriate time and cost implications for such instruments need to be considered.

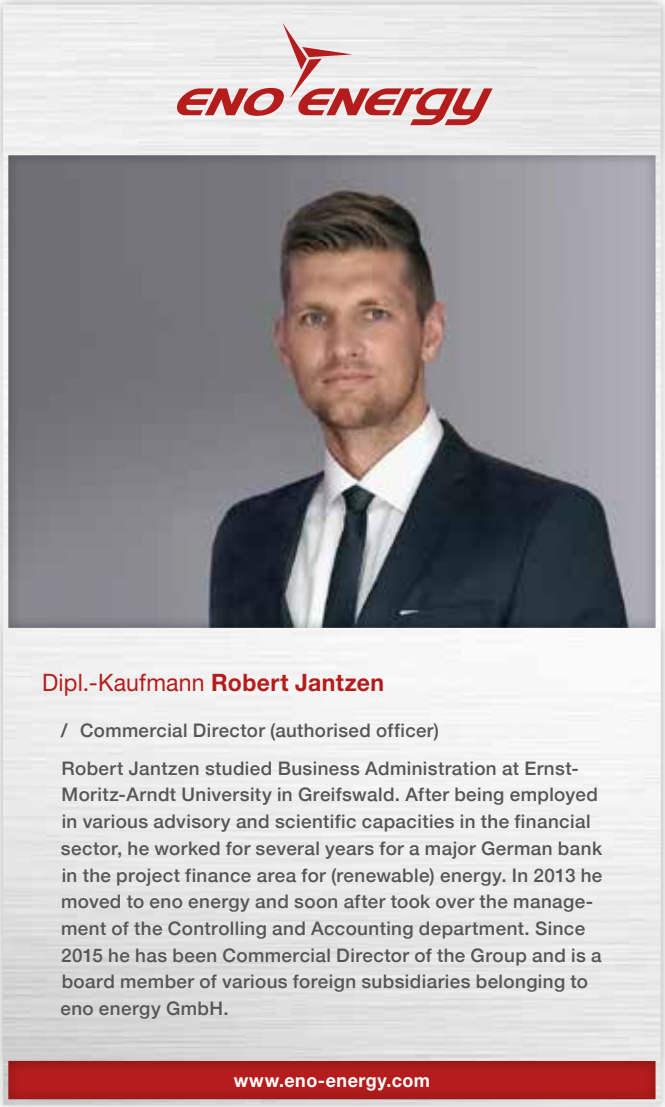
As a result of the citizen and community participation law adopted in Mecklenburg-Western Pomerania, we are currently looking at investment opportunities for investors limited to a particular catchment area.

From a business perspective, how are the possibilities for raising capital developing in view of the changed statutory framework for the wind industry as a whole and for eno in particular?

Changing the remuneration for wind power projects from the statutory fixed feed-in tariffs to feed-in rates determined in bidding rounds represents a significant change for the wind energy industry in Germany.

Banks and investors will supply the projects with sufficient capital even after the introduction of the tendering model. However, existing uncertainties concerning the provision of capital will need to be drawn into the equation. This means that projects will become increasingly dependent on the banks and own capital can no longer be determined at a fixed rate but will be subject to variability.

The eno Group feels that it is well positioned for the impending changes. In recent years, activities in France and Sweden have increasingly diversified the markets and therefore reduced the dependency on the German market. In addition, eno energy has a broad network of project-financing banks and investors. The credit lines available at the corporate level allow greater independence from investors.



Dipl.-Kaufmann **Robert Jantzen**

/ Commercial Director (authorised officer)

Robert Jantzen studied Business Administration at Ernst-Moritz-Arndt University in Greifswald. After being employed in various advisory and scientific capacities in the financial sector, he worked for several years for a major German bank in the project finance area for (renewable) energy. In 2013 he moved to eno energy and soon after took over the management of the Controlling and Accounting department. Since 2015 he has been Commercial Director of the Group and is a board member of various foreign subsidiaries belonging to eno energy GmbH.

www.eno-energy.com

Calm is now returning following the recently concluded EEG amendment, and the industry will now need to come to terms with the new requirements. How will the rulings impact on eno energy and how will the company position itself in the medium term in order to keep growing?

We have already been work intensively for many months with our project pipeline and are analysing all projects in terms of their efficiency and optimisation potential.

In addition, we are striving to secure a certain quota of projects that can participate in the transitional provisions of the EEG Act.

Last but not least, we believe that the impending upheaval could also create additional market potential and opportunities, for example through the acquisition of new projects. Identifying such project partners presents a major focus for us at the moment.

Thank you for the interview!

► Nacelle and machine train for the eno 114 / eno 126 as a 3D animation

Towards 4.0 MW: The evolution of the 3.5 MW platform

»With the eno 114 3.5, the customer receives a top wind turbine that has been reliably tried and tested in operation for several years,« says Robin Ahrens, Head of Research and Development at eno energy systems GmbH, who really gets into his stride when describing the advantages of the large eno platform.

As the engineer explains, who has been employed at the Rostock manufacturer for more than seven years, all the necessary certifications have been achieved, acoustic surveys conducted and stress measurements successfully completed. To achieve this, sensors fixed to various components such as the tower base and head, rotor blades and shaft have continually collected load data. The subsequent evaluation of all the measured data confirmed the previously made assumptions and revealed existing reserves. For example, the measurement of the performance curve enabled the yield forecast to be increased by just over four per cent.

»The analysis of all the experience and measurements showed that we still have performance reserves that we can leverage relatively quickly, for example in the gears,« explains Robin Ahrens. The goal of achieving a power rating of 4.0 MW for both the eno 114 3.5 and the eno 126 3.5 MW was soon formulated as a development target for his department. »We expect the performance update to increase the yield by up to 7 %. In addition, the eno 126 4.0 will be more flexible and can also be used at sites with high wind speeds.«

The upgraded turbines will no longer be offered like the 3.5 in the IEC IIS (eno 114) and IEC IIIS (eno 126) wind classes, but will both be available in the IEC IIA class. However, the familiar platform versions with 3.5 MW will still be available for demanding locations with increased requirements for the permissible turbulence intensity.

The tests for the 4.0 MW platform, which is planned to be available from mid-2017, are already under way. For example, the EB61.6 rotor blade for the

eno 126 has already passed the required tests.

The eno 126, which in the 3.5 version will be used in a wind farm for the first time during the fourth quarter of 2016, mainly differs from the eno 114 in terms of its blade system. The use of carbon fibre in the more than 61-metre-long blade reduces the weight while increasing the relative blade stiffness. However the use of carbon, a conductive material, also increases the lightning protection requirements. »We are therefore proud to have developed our own lightning protection system, which has already passed all the tests very successfully,« says Development Manager Robin Ahrens.

With the exception of the rotor blades, the remaining components are substantially identical in the two types. This corresponds to the underlying concept in developing the powerful 3.x platform. With an identical wind turbine platform, we have therefore succeeded in covering the requirements in different locations.

The range of towers is also being expanded. The product range now includes steel tube tower variants with hub heights ranging between 92 and 142 metres. Here the eno 126 product range has been specially supplemented to include not only the previously available 117- and 137-metre hub heights but also a tower with a 97-metre hub height for locations with strong winds.

► Work on the rotor blade hub and pitch system

eno's most progressive scheme: The new Kölsa Wind Farm

As a pioneer project, Kölsa Wind Farm will be using the innovative eno 126 3.5 MW low-wind turbine. The eno 126 is designed for sites with medium to light winds and is based on the same platform as its sister eno 114, which is identical in terms of the installed mechanical and electrical components. Only the rotor blades are longer with a 126-metre diameter and a different aerodynamic shape.

The wind farm will be erected in southern Brandenburg near the town of Falkenberg / Elster. Consisting of five wind turbines with 137-metre hub heights, construction is scheduled to commence during the last quarter of 2016. eno energy is forecasting a total

yield of around 40 million KWh per year for all wind turbines, with a total rated capacity of 17.5 MW.

The area is surrounded by two former military airfields. South of the designated wind power area is Falkenberg-Lönnewitz Aerodrome, which is now used as a flying club and commercial area. West is Torgau Beilrode Airfield, which is also operated by a private flying club.

Two of the five wind turbines have been purchased by the EKM-StromVerbund, a company belonging to the Evangelical Church of Central Germany. EKM is aiming to produce as much electricity in an ecological way as it consumes. With EKM, which was founded just a few years ago, the Church wants to invest itself in energy generation and not just let Church-owned land be used for providing wind energy from other operators.

eno's largest scheme: Expansion of Plauerhagen Wind Farm

With a rated capacity of around 65 MW, Plauerhagen will soon be the largest wind farm equipped with wind turbines from eno energy. Eight eno 82 wind turbines with 2.05-MW rated capacities and 101-metre hub heights have already been operating here to the east of the Rural District of Ludwigslust-Parchim in Mecklenburg-Western Pomerania since 2010.

By the end of June 2016, the farm had been extended with six modern, high-performing eno 114 3.5 MW wind turbines. The construction of another six wind turbines of this type with 127.5-metre hub heights will begin in the second half of the year. Seven old Nordwind two-bladed wind turbines have also now been dismantled and will be replaced by two other wind turbines as part of a repowering programme.

A unique design feature of the wind farm is the position of the wind turbines in parallel rows. Thanks to its high turbulence resistance, the eno 114 3.5 MW can excellently meet Barkhagen municipality's requirement to erect the wind turbines in rows at small distances apart for aesthetic reasons.

»Despite the – from the tourism point of view – rather sensitive location with the Plau am See holiday resort adjoining our municipality, I would say that there is a relatively high acceptance for the Plauerhagen wind farm project among the population as a whole,« says Barkhagen's mayor Steffen Steinhäuser, on whose municipal land the wind farm is located.

The committed mayor, who otherwise works as a tax advisor in his main line of work, nevertheless has to ensure that there is no shift in the population's mood should additional construction in the area become too extensive. He certainly backs Plauerhagen Wind Farm, which has existed for some time. »As mayor, I am always obligated to take the wishes and concerns of the citizens seriously and at the same time not lose sight of the public interest. This is also concerned with the financial situation of the municipality. And of course the revenues from the wind farm help us at a time when local authorities have increasingly fewer financial resources.«

As with any new wind farm, compensatory and replacement measures are also required. These include hedge and tree planting in collaboration with the local agricultural enterprise MiFeMa e.G, which also owns the wind farm land. In addition, de-sealing measures are being carried out at the former Bossow ammunition depot, which is located about 10 km north of Barkhagen. A natural forest will then be created here in partnership with the Nossentiner/Schwinzer Heath Nature Park.

»Unfortunately, the simultaneous restoration of landscapes as part of wind energy projects often does not receive any media coverage,« says Chairman Christian Schwager from the MiFeMa e.G agricultural association. »Of course,

► Six eno 114s at Plauerhagen Wind Farm

► Planning and constructing the wind turbines in parallel rows

a certain price has to be paid visually and sometimes acoustically for the erection of wind turbines. On the other hand, elsewhere a piece of nature destroyed by military use, such as in Bossow, will be restored and opened up to the public. In addition, a wind energy scheme can be quickly dismantled at the end of its use and without residues.«

In order to connect the wind farm expansion to the electricity grid, a 21-km-long cable route had to be constructed to Krakow transformer station. To achieve this, an innovative and efficient solution was found by using part of the Meyenburg-Güstrow railway line owned by Prignitzer Eisenbahn GmbH, whereby the cable route now runs along the railway embankment.

eno energy is also looking after the maintenance and technical management of the wind turbines for the first two construction phases, which have been sold to the MVV and DEW 21 operators from Mannheim and Dortmund. For this purpose, a new service station has been specially built on site and staff employed from the region.

Service area is growing and becoming more customer-friendly

Under the management of eno's new Service Director Diana Rohde and external consultant Thomas Jäniche, the Service area is currently being transformed, expanded and optimised. The team, which comprises 23 employees, is responsible for all maintenance and repair work for currently 108 wind turbines with a total capacity of around 245 MW in 39 wind farms.

The fact that these are mostly wind turbines made by eno energy does not have to stay that way: »We're certainly looking to expand the Service area. On the one hand, the continual expansion in the number of eno wind turbines, for which the customers generally conclude a full maintenance contract, means that our service automatically grows too. On the other hand, we also look after several third party wind turbines from other manufacturers. We could certainly envisage taking on additional orders,« explains the graduate business scientist, who has worked at eno since 2014.

However, this would also require more staff, which is a major problem in the industry. »For some time now it has been difficult to find enough suitable professionals,« adds the Service Manager. »The car makers BMW and Porsche have been poaching, for example, the good electronic, mechatronics and electrical engineers from our service centre in Leipzig. This caused us problems last year with completing routine inspections.«

Relief was provided by the cooperation with qualified subcontractors and an accelerated, continuous increase in

► eno service technician Robert Glöde while carrying out maintenance work

personnel. Eight new service technicians have been appointed since the end of 2015. More are coming. In August, for example, two technicians started work in the new service station in Vara in Sweden. The company has also been training its own mechatronics engineers for some time. To improve the overall quality for the customers, a specialised customer advisor was recently appointed at the main service centre in Rostock.

»The service and after sales concept provides permanent, preventive monitoring of the wind turbines including the condition monitoring system.«

All operations are monitored and coordinated from Rostock. This is also where the main warehouse is situated with the central warehouse management. Other quality improvement elements include the introduction of a software expansion based on SAP to improve the mapping in all details and contracts with selected service providers for the rotor blade maintenance.

»The SWOT analysis has enabled us to jointly identify many strengths in the eno-Service area,« explains consultant Thomas Jäniche from EBETHO Service Construct GmbH, who has been providing his expertise in an advisory capacity since August 2015. »We have a motivated team with years of experience, fast response times with technical problems and modern equipment that ranges from the vehicle fleet to the Skylotec PSA and the precision alignment lasers. In addition to high availability, the full maintenance concept also offers contract periods tailored to the financing of turbines. The service and after sales concept provides permanent, preventive monitoring of the wind turbines including the condition monitoring system. In addition to remedying faults, the eno maintenance contract also includes the expert examination and repair of safety equipment such as ladders, fall arresters and service lifts.«

»We therefore provide our customers with a very attractive package,« adds Diana Rohde, who also mentions that the fleet availability has been successfully increased back to almost 98 % since January 2016. This value was a distinguishing feature of eno before the introduction of the 3.5-MW platform on the market. »The fact that a completely new type of wind turbine in the portfolio does not yet perform perfectly during the first few months and drags down the average a bit is something that can be entirely expected. However, the eno 114 now has over 97 % availability with ever increasing values. And that is also what we contractually guarantee,« explains the Service Manager. Peak values – for example 99.3 % with the eno 114008 in Wilhelmshaven since the beginning of 2016 – demonstrate the inherent qualities of the turbine and what can be achieved for the whole of the 114 fleet.

► Service technicians and vehicles at the Wind Farm Festival

The most recent of the meanwhile four service locations to be opened is the station in Plauerhagen near Parchim. Here four members of staff man the new base, consisting of an office and a small warehouse. Although it is not far from the headquarters in Rostock, this new service station was required to provide quick and efficient monitoring of the wind farm, which will soon grow to around 60 MW.

eno energy cup: Taking part is what counts!

eno supports youth work, social institutions and associations in a variety of ways. For instance, it has supported the junior footballers from the Kröpeliner SV sports club with the eno energy cup, which was held for the first time on 30 January 2016. In front of a vociferous crowd of about 200 fans, the indoor football tournament ran for an entire evening until after midnight. As the main sponsor, eno energy was also allowed to field its own team comprising five men plus three substitutes.

The remaining seven teams were mostly club teams, which became clearly apparent to the scratch eno troupe from the very first game. Despite a heroic fight, the wind energy men suffered losses that partly reached double figures and, after several 12-minute halves, they eventually found themselves in last place.

»No matter, it was fun and we were doing it for a good cause,« says goalkeeper Florian Kaliebe. »The winning teams have also donated their prize money to the KSV junior team – and us a round of beers for our only goal in the tournament. The latter wasn‘t absolutely necessarily!«

Ambitions have now been awakened for 2017. The footballers from eno energy

eno energy participating in the booming wind energy market in France

In France, more than three-quarters of the electricity is generated by nuclear power. Fossil fuels, on the other hand, play a relatively small role. The annual figures from Rte-France show that the overall share of renewables in 2015 was still somewhat moderate with 14.6 per cent. However, wind-generated electricity is rapidly catching up and will overtake the use of fossil fuels in France in the foreseeable future.

The share of wind power in the French electricity production was already 23.3 % higher in 2015 than in 2014. According to the French statistics agency SOeS, the installed capacity in France passed the 10 GW mark for the first time in September 2015 (by way of comparison, last year almost 45 GW were installed in Germany).

eno energy's subsidiary, eef Sas, is benefiting from the favourable conditions and has recently submitted a planning application for its third wind farm project in France. It is planning to build a 10.5 MW wind farm with three eno 126 3.5 MW wind turbines in the Département Morbihan in the Brittany region. However, the integrated, innovative public participation process means that the time from processing the application to awarding the building permit can take up to one year.

In Bray in the Haute-Normandie region in northern France, the construction of six wind turbines with a total of 12.3 MW will start at the end of the year. The construction of the fourth wind farm in the Département Eure is also being driven forward by the local authorities with considerable commitment.

One of the biggest wind farm projects in the Département Morbihan in Brittany is the Mohon Wind Farm with 20 MW. It commenced operation this summer following a year of hard work and excellent collaboration between eef Sas and H2ion, a company specialising in the construction of wind turbines. The ten, 2-MW capacity wind turbines each have a 105-metre hub height. This highly efficient wind farm has already been successfully sold to the CEE Wind-Beteiligungs GmbH & Co. KG and Lampe Alternative Investments S.A. companies.

► eef project manager Jonathan Martin at Mohon Wind Farm

In addition, a partnership agreement has been signed with the project developer KDE Energy France, which will significantly increase the project pipeline in France for eef and eno energy. Three projects with a total capacity of around 63 MW will be developed with a joint team from KDE and eef in the Poitou-Charente, Nord pas de calais and Normandy regions.

To cope with all these new tasks, the French team will be further increased in the project development area.

now want to thoroughly prepare themselves for the next tournament at Kröpelin High School and certainly improve their goal ratio significantly upwards. »Our roles models are of course the Irish ‚boys in green',« adds Florian Kaliebe.

► eno team in Kröpelin sports hall

Considerable public interest in Brusow Wind Farm Festival

Spring sun, light wind and blooming rape fields interspersed with wind turbines. On 30 April 2016, what looked like a glossy brochure for renewable energy investors was actual reality at Brusow Wind Farm when eno energy marked Renewable Energy Day by hosting the Wind Farm Festival on the site near the town of Kröpelin in Mecklenburg. At least 250 members of the public came from the surrounding communities, rural districts and the city of Rostock.

The organiser erected various stalls and a marquee directly on the crane hardstanding next to the nearly 150-metre-high eno 114 with serial number 114005. Although only a few visitors were able to travel up to the nacelle due to safety reasons, at least everyone was able to view the tower base.

► Do-it-yourself wind turbine

► Brusow Wind Farm Festival on 30 April 2016

Particularly the children were provided with numerous ways to actively learn about wind energy: for example, they were able to construct their own kites and small wind turbines from paper and cardboard, measure wind speed with an anemometer, practice climbing on a 12-metre-high tower like grown-ups or in the service truck inspect the equipment used by the service technicians for maintaining the wind turbines.

Staff from eno energy also provided details at various information stands on topics such as immission control, the permitting process and the operation of wind turbines as well as on the technology used in the eno 114. Dethloff and Lange GmbH in Neubukow also presented its mini »Delarotor« wind turbine.

The programme was rounded off by rousing medleys from the Bad Doberan Brass Band and energetic dance routines from the Tayoma Children's Dance School in Kröpelin.

Department head Jacqueline Wünsch was very satisfied: »Following the open day at our production site in 2015, we were once again pleasantly surprised at just how much public interest there is in the wind power industry. Such events also offer us an interesting opportunity to engage with the public. We see that there are now many people in the country for whom wind energy has become a normal part of their environment and a self-evident component of future energy provision.«

Rostock Wind 2016: Full house in a new conference hotel

► Minister of Energy Christian Pegel delivers the opening address at Rostock Wind 2016

Rostock Wind has moved and has now been held for the first time at the Radisson Blue Rostock on 12 August 2016. The hotel's central location within sight of the city harbour considerably facilitates the logistics for the compact day symposium, with an evening event held as part of the popular Hanse Sail maritime festival. The Radisson has been focussing on the wind energy sector for some time now and was accordingly delighted about the largest onshore wind energy conference in north-eastern Germany moving from the Neptun Hotel in Warnemünde to the city of Rostock.

More than 300 delegates representing a colourful cross-section of the wind industry, ranging from expert appraisers to suppliers and investors, were delighted by the fascinating lectures with added value, the considerable time for intensive discussions, the pleasant atmosphere and excellent catering.

The symposium was opened by two engaging speeches given by the Minister of Energy for Mecklenburg-Western Pomerania, Christian Pegel, and BWE President Hermann Albers. Along with the final speaker, Matthias Zelinger, who is head of VDMA Power Systems, they reflected on the current situation following the amendment to Germany's Renewable Energy Sources Act (EEG 2017) at both the political and industry levels, and highlighted the opportunities and risks for the near future. In between, all delegates had the opportunity to individually select the presentations they wanted to see in the Planning, Financing and Technology forums in accordance with their personal interests.

As in previous years, organiser eno energy chartered two large sailing vessels for the evening event: this year the 60-metre-long, three-masted barque »Artemis« and the 47-metre-long barquentine »Pedro Doncker«.

And thanks to some decent wind, it was now finally possible to do some proper sailing! Tacks and gybes were carried out with the help of several ship guests who manned the ropes. As the boats lurched from side to side and the dishes slid along the buffet, the sailors swept through the Baltic Sea while the bands continued to play unimpressed.

► Networking in the foyer

► Cast off in the town's port

More info on
www.rostock-wind.com

ENO ENERGY
Success with wind.