

ENERTRAG SERVICE REPORT

ISSUE 02 + 03/2019

Dear Readers,

here for the first time we bring you a double helping of our SERVICE REPORT comprising Issues 2+3/2019. Does that mean we have nothing to report? Very far from it. We have rarely experienced months with so many topics and events on all sides. In fact there is only room here for the highlights. With so much going on, we haven't had time to report as fully as we would like on what we have been doing. Which is a shame, because most of what has happened has focused on enabling our technicians to work better and more efficiently, which in turn directly benefits our customers. The issues to report on are many and varied: A new certificate for our environmental management system, lots of new installations in service, exciting products from our workshop, an improved result in the annual BWE service quality survey, our new welding technology department, and, and, and... At the same time, we have been commissioned to service new installations, including types new to us, and we have grown: We have seen double-digit percentage gains in turnover, our headcount is up, especially in the field and in technical support, and – most importantly – we have acquired fresh experience that will help us to further enhance the quality of our work. With all this in mind, I wish you a sunny, but nonetheless windy, summer!

Veit-Gunnar Schüttrumpf

All good things come in threes: DIN EN ISO 14001:2015 certificate for our environmental management system completes our certification offensive

In our first SERVICE REPORT no. 1/2018 back in winter 2018, our Quality Assurance and Safety Manager Cornell Hanisch, set himself the target of gaining three fundamental certificates for our integrated management systems. His intention was to have the health and safety management system certified in accordance with SCC regulations. Quality management was to be certified as per ISO 9001:2015, while the environmental management system was to be assessed and certified as per ISO 14001:2015.

This certification offensive was successfully completed in March 2019 with the award of a certificate for the environmental management system, while the first regular audit as per SCC** and ISO 9001 was passed with flying colours. "Once again in the case of the environmental management certification, we benefited

from established processes which had become second nature, as well as from the steps we had taken in advance," said Cornell Hanisch "Even though it has been a very strenuous year with plenty of hard

work, we are proud of ourselves and what we have achieved."

"As important as the certificates are to us – more important still are the resulting process improvements that allow us to optimize the work we do for our customers," explained Veit-Gunnar Schüttrumpf, Managing Director of ENERTRAG Service. Consequently, the efforts that led to these certifications cannot be rated too highly.



BWE survey – ENERTRAG Service achieves a substantially improved result

The eagerly awaited annual survey by the German Wind Energy Association (BWE) once again revealed that when it comes to service quality, wind turbine operators awarded higher marks at least on average to independent service providers than to the manufacturers themselves. Among these independent service

providers, ENERTRAG Service achieved the biggest improvement in its score which came in at 2.06 compared with 2.23 last year, and advanced from fourth to third place among the independents. By comparison, the top manufacturer scoring 2.57 points was once again ENERCON. Veit-Gunnar Schütttrumpf was delighted

at the result: "Of course we are still far from where we would like to be, but this at least shows that from the operators' perspective our quality offensive is now delivering measureable success."

New installations in service

The 14 ENERCON E 66 wind turbines in East Frisia for which we have been providing a full service since the middle of May represent a comparatively new departure for ENERTRAG Service. These turbines which have switched to ENERTRAG Service after 20 years in operation will be eligible – as described in this issue of our SERVICE REPORT – to benefit from parts which have been refurbished in our own workshops, which is an important step forward in meeting the particular needs of the operators of older installations. The turbines will be serviced particularly from our new base in Klostermoor, which has since become home to a new parts store devoted to ENERCON spares.



ENERCON E 66 windfarm in East Frisia, seen here on a typically damp and cloudy North German day

Somewhat younger at 15 years of age are the three E 66 turbines in Dessau, two of which are being serviced by ENERTRAG Service since June 2019, with the third due to join in December 2019. These installations are being serviced by our branch in Halle/Aschersleben, which by the end of this year together with the Prenzlau branch will have around 30 turbines of this type on its books.

The 14 Nordex N 80 and Nordex S 77 turbines which will be serviced by us from 1 August 2019 feature a technology with which ENERTRAG Service has long been familiar. What is most interesting is that the six N 80 turbines are among the first of their type, as evidenced in particular by some of the inverters that have been installed. The ENERTRAG workshop will in future be providing some important services for these installations as well, on

the basis that parts supplied by meanwhile defunct manufacturers can now be refurbished and reused.

Other turbines for which we began to provide services in the first half of this year include two Nordex N 60 in Bassum, Lower Saxony, three TACKE TW 600 a in Saxony-Anhalt, two Nordex N 60 and one

DeWind D6 in North Rhine-Westphalia and two D6 in Brandenburg. Overall, the number of wind turbines on fixed service and maintenance contracts (i.e. excluding one-off orders e.g. involving major components) increased from 445 on 31 December 2018 to well over 500.



Nordex N80 turbines in North Rhine-Westphalia

DeWind “continued operation 20+”: ENERTRAG offers pre-check

Interview with Michael Dahm, Managing Director of ENERTRAG WindStrom

Michael, beside your role as Managing Director of ENERTRAG WindStrom, you are among other things responsible for the continuous development of the inspection unit. Since last year you have been helping turbine operators in dealing with the issue of “continued operation 20+”. You are now keen to offer a special product jointly with ENERTRAG Service. What makes our collaboration so valuable for the customer?

Michael Dahm: Even though we are both subsidiaries of ENERTRAG AG, we operate at different points along the value chain. Despite this, we have worked well together in the past, and closely. Remote monitoring and the PowerSystem are just two examples. What's new is that we are now also amalgamating our inspection service skills at a very important point. There is strong demand at the moment for continued operation assessment reports for DeWind turbines, many of which will soon be 20 years old. Given that ENERTRAG itself operates numerous DeWind installations, other operators can benefit on the one hand from the wealth of experience amassed by the market leader in DeWind turbine servicing, and on the other from the knowledge of one of the largest users of DeWind turbines. We have developed a new concept for just this purpose.

Exactly how can customers profit from our collaboration?

Michael Dahm: With continued operation reports generally being cost-intensive, we gave some thought to how we can be a little more accommodating without compromising on quality, and we came up with the pre-check. The condition of many installations is generally such that they can continue in operation, and the designs fundamentally include certain reserves. However, it is in each case es-

sential to check whether or not it makes sense to continue operating the installation. As part of a detailed pre-check, the relevant information is screened and analyzed by ENERTRAG Service and ENERTRAG WindStrom in order to see whether the installation is fundamentally suited to continued operation and whether a further extensive continued operation report is recommended.



Michael Dahm
Geschäftsführer ENERTRAG WindStrom

What is the underlying concept?

Michael Dahm: The pre-check provides operators with a starting point. We use service reports and the evaluation of the last regular inspection. We also check critical components, events and statuses in order to exclude possible problems. Provided that the basic conditions for continued operation are met, a detailed continued operation report is recommended.

So the operator has a sound basis on which to make a decision on repowering or continued operation?

Michael Dahm: Operators first of all receive a robust assessment at a reasonable cost, so they can decide whether a detailed report is justified. For some operators, continued operation may well be the right option, because many of these installations are located at sites where building regulations would rule out the possibility of repowering. We are keen to

contribute our DeWind experience to this joint concept, and so we are offering the pre-check. A more intensive analysis of the technical condition of the installation and possible ways of reducing costs can be individually arranged at any time. The price for the pre-check will subsequently be set off against the detailed continued operation report – so if continued operation is viable, there is no money wasted, or if the outlook is bleak, then at least the costs have been kept within bounds.

What sort of time frame should operators plan for?

Michael Dahm: First of all, it's worthwhile. Our personnel work out of various locations, they have the necessary competence (accreditation and certification), and the check is simple and therefore quickly carried out. To whet their appetite, in the next few days DeWind operators will be receiving further information through the post from ENERTRAG Service explaining the procedure.

The envelope will also contain a voucher for a “continued operation 20+ pre-check” at a special price which can also be set off against the cost of a detailed continued operation report.

For more information visit windstrom.enertrag.com.

We look forward to working with you! Many thanks for talking to us, we wish you every success!

New products from the workshop

One classic product from our workshop that is meanwhile filling a gap in the market is an otherwise unavailable switched-mode power supply unit for the Moog Pitch System as used in the Fuhrländer FL 2.5 wind turbines. More than ten of these units have already been repaired and are available to our customers.

Following completion of the MITA test bed, WP3000/3100 units are meanwhile also being repaired and stocked as a

low-cost alternative for our customers. Refurbished MITA WP3050 displays and WP3034/35 pitch circuit boards are also available for supply.

In addition to these "standard products", some initial individual repairs have also been successfully carried out. Workshop products have already been supplied to numerous customers in Germany, as well as in France, Romania and South Africa.



WP 3000 undergoing repair

New company established: ENERTRAG Service France

Following the successful entry of ENERTRAG Services into the French market in mid September 2018 and the integration of the French business activities acquired from a former competitor, the new company ENERTRAG Service France (ESF) was founded at the beginning of April 2019 and registered as a wholly-owned subsidiary of ENERTRAG Service GmbH.



The sun sets over the Noyales wind farm

Several teams are already working at ESF, supported by an office-based colleague. A service contract for five Fuhrländer FL 2.5 turbines has also recently been extended with our largest customer at present in France. ESF is currently experiencing strong demand, not least due to the economic difficulties suffered by a major manufacturer.

New department at ENERTRAG Service: Welding Technology

Many operators of older installations are sorely afflicted: The particular stresses encountered in the wind energy sector have brought various components of a variety of turbines to the limit of the computed limits of their capacity. Special concepts are needed for their repair. Examples include base frames, generator supports, tower weld seams and other

welded joints in hub and gondola, where after long periods of operation cracks or other anomalies are now appearing. This is evident in turbines produced by virtually all manufacturers.

In order to enable us here too to offer our customers solutions that meet certified high-quality standards, ENERTRAG Service

has set up a new department devoted to welding technology. In this department, a specialist welding engineer and his team of expert welders are developing and practicing efficient and reliable testing and repair procedures. Both individual assignments and agreed long-term testing and repair concepts are available.

New: English version of the *SERVICEREPORT*

With immediate effect, a few days after publication of the ENERTRAG SERVICE REPORT, an English version will be available on our website. ENERTRAG Service is naturally keen to keep international

customers and non-German-speaking readers up to date with developments: check out the "News" page at <https://service.enertrag.com>

Looking back: Second ENERTRAG Service meeting at our main branch in Lübeck

ENERTRAG Service staff met again for a second time on 21 - 22 February at our Lübeck branch. Both days were packed with plenty of interesting presentations by our various specialist departments. A particular amount of space was allocated a presentation of the new spares workshop and the live removal of a grease sample from the training gondola. Once again, there were some service technicians in attendance this time who were making their very first

trip to our Service headquarters in the far north of Germany, among them our new French colleagues. Looking back, we have nothing but positive conclusions to

draw, and we look forward to next year's meeting!



Workshop presentation for all employees

NEW AT ENERTRAG SERVICE

Stephan Greggersen has been supporting the ENERTRAG Service team since 1 April 2019 in his capacity as Sales Manager. Stephan trained in electrical engineering and has both technical knowledge and sales and marketing skills to contribute. We are delighted to welcome Stephan on board and wish him every success at ENERTRAG Service!



NEW AT ENERTRAG SERVICE

Another new colleague to come aboard on 1 April is Krzysztof Lange who has joined our branch in Geseke as a service technician.



Krzysztof has extensive experience of the wind energy sector and has now found his way back to us after a few short detours. Welcome back, Krzysztof, we wish you a great start at ENERTRAG Service!

NEW AT ENERTRAG SERVICE

Catalin Dumitrescu has been working for ENERTRAG Service France for half a year now.



In fact, she has worked in the wind energy sector since 2011 and brings with her considerable knowledge and experience. We are delighted to welcome Catalin as a service technician for ENERTRAG Service France! Welcome indeed!

NEW AT ENERTRAG SERVICE

Justin Sporne joined the ENERTRAG Service team in March 2019 as a service technician specializing in major component replacement.



As a trained electrician, he was previously employed in the wind energy sector by Nordex Energy GmbH. So he brings with him plenty of experience - welcome to ENERTRAG Service, Justin!

NEW AT ENERTRAG SERVICE

Jörg Rackow joined us on 1 February 2019 as a service technician in the Stralsund area.



Jörg trained as a mechanical engineer and worked previously a service fitter in a shipyard before switching to the wind energy sector a few years ago. We are delighted to welcome Jörg on board and wish him every success at ENERTRAG Service!

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