HUSUM DAILY

in association with HUSUM Wind
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Friday 18 September 2015

‘Jugend forscht’ winner Marvin Hensen at Windcareer today

Marvin Hensen with an older exponat

With the slogan See your future, the Windcareer job fair is held today from 10:00 to 18:00 in the NCC Auditorium. It concentrates on jobs, careers and training within the wind industry.

Marvin Hensen is one of the exhibitors (Stand: NCC 22). The 19-year-old North Frisian has won the engineering category in this year’s Schleswig-Holstein state Jugend forscht (young scientist of the year) competition. Germany’s Jugend forscht is the biggest European youth science and technology competition.
Marvin is and always has been a bit of a tinkerer. As a young child he used to build soapbox cars on his father’s farm, and now he has come up with a new kind of windmill for generating electricity. His invention is a windmill that does not turn vertically, but horizontally. This means that it can be fixed to almost any pole, post or chimney. He has designed a special rotor form, the ‘roundwind’, which is reminiscent of a waterwheel lying on its side. It encompasses the structures like a ring and runs – driven by the wind – on the rails of a baseplate. Permanent magnets on the bottom side of the rotor rotate over copper coils, inducing a voltage. In order to increase the output, the slats can be covered and the airflow is caught in a funnel, released again and thus accelerated. The windmill principle is interesting for urban areas, especially as it runs quietly. With this invention, it is conceivable that radio masts could supply themselves with the power they require.

Marvin got the idea for his invention when he saw the effort involved in erecting, maintaining and renewing a conventional, vertically rotating wind turbine. Subsequently, he figured that using all the masts, posts and trees around for something different, might be a good idea, too.

Because of the amount of time he had to spend on the competition, he did not have too much time to revise for his Abitur at the Hermann Tast School in Husum in May. However, he passed the exam, and is happy that he managed his university entrance certificate on top of the competition. He has just started as a trainee mechatronics technician at Vattenfall. For this, he has had to move to Hamburg, and he is considering going to university when he has finished his training. ‘Working in the wind industry is my dream’, says Marvin. He would most like to continue developing projects and inventing new technology.

The 19-year-old is taking part in Windcareer because he wants to get people interested in his idea, and maybe find a partner who will work with him on his invention, and who might even want to develop it further. ‘And I want to get feedback from experts’, explains the 19-year-old.

The idea behind Windcareer is to familiarise pupils, students and jobseekers with the various areas of work in the wind industry and to find jobs for skilled workers. A seminar programme is also being offered parallel to the job fair. Visitors have the chance to have their application folders and CVs checked by experts, and can also attend a training session for job interviews, as well as speeches by various enterprises. Graduates and students will also be on hand to give an insight into their courses and the experiences they have had.

Nele Rissmann

Rebooking for HUSUM Wind 2017 ends today

For the exhibitors at HUSUM Wind 2015 today is the last chance to rebook their stand for 2017 at a discounted rate. When companies take advantage of the rebooking process they will save up to 20 euros per square metre (over the normal price) and are able to secure their preferred stand. They will only be billed fully for the stand in 2017. Major turbine manufacturers like Enercon, Senvion, Adwen, Nordex, Gamesa, Vensys and major suppliers like Bachmann, Beckhoff, ZF have already signed up for 2017. Among those pavilions from neighbouring countries, the Danish and Polish pavilion will show a large presence at HUSUM Wind 2017. This year almost 650 exhibitors showed their products and services and it looks like we welcomed the expected number of 20,000 visitors. Companies can drop off their rebooking registrations at the HUSUM Wind stand 2B14.

Wind measurement at the spinner: higher yield, better insights

iSpin sets new standards for optimising wind turbines

With the patented iSpin system, wind conditions can be measured more accurately than ever before, resulting in higher yield, better insights and lower loads. To achieve this, iSpin uses proven ultrasonic technology and measures the wind where it first hits the wind turbine: directly at the spinner, in front of the rotor. Conventional wind measurement at the nacelle behind the rotor can be inaccurate due to turbulence. The iSpin sensors, intended for permanent installation, measure and monitor the power curve in accordance with IEC 61400, as well as yaw misalignment, turbulence intensity and flow inclination. To enable as many operators as possible to benefit from accurate measurement data, we are offering the iSpin system for a fixed monthly fee. The best thing is that the additional yield, which can be generated by correcting yaw misalignment, can more than cover the service fee.

Discover an entirely new transparency concerning your wind turbine's productivity.
We'll be happy to make you an individual offer.

Visit us in hall 3, booth 3B08

www.ispin.info

ROMO WIND
WIND KNOWLEDGE IS WIND POWER

Congress programme Friday 18 September 2015

Time	Auditorium	Room 6	Room 2	Room 1	Room 3	Room 4	Room 5
10:30–11:15	**Windcareer** Alle Informationen finden Sie auf den Seiten 39–49						D42 **Nordwindaktiv** Sichere und gesunde Arbeit in der Windkraft: Gesetzlicher Arbeitsschutz und betriebliche Gesundheitsförderung Health and Safety in the Wind Industry: Statutory Health & Safety and Workplace Health Promotion
11:30–12:15			D40 **BDO AG** Förderung/Vergütung nach dem EEG 2014 mit stromsteuerrechtlichen Aspekten Feed-in tariffs according to the German Renewable Energy Sources Act (EEG 2014) with connections to German Electricity Tax				
12:30–13:45			D41 **BDO Legal** Der Einfluss des Vergaberechts auf Windparkprojekte The impact of procurement law on wind park projects				
14:00–15:30		D39 **Podiumsdiskussion** Podiumsdiskussion zum Thema „Drei Monate Windkrafterlass in Schleswig-Holstein – Versprochen gehalten / Versprochen gebrochen?“					
15:30–18:15							

The German wind industry takes a breather

The figures for onshore wind in Germany showed a downturn in the first six months of this year. Despite this, the trade associations predict a net additional installation for the whole of 2015 of at least 4,000 megawatts, which would make climate change goals achievable. The manufacturers are, however, burdened by a boom and bust market situation, and want the politicians to implement a long term system that will guarantee continuous future expansion.

In the first half of 2015 the additional net wind energy capacity installed in Germany was around 1,093 megawatts. This is about a third (34 per cent) less than in the same period last year, when the industry achieved a record figure of 1,659 megawatts. This still makes the first half of 2015 the second-best in the history of wind energy in Germany. If one includes the capacity of the turbines dismantled and replaced in the first six months, then the gross capacity increase was 1,185 megawatts.

VDMA Power Systems expects a strong second half in 2015. By the end of the year it estimates an annual net increase of 4,000 to 4,500 megawatts capacity and therefore a total onshore wind capacity of at least 42,000 megawatts. However, the German Wind Energy Association sees three crucial restrictions that are likely in 2016. First is the degression anchored in the Renewable Energy Sources Act (EEG), which kicks in as of 1 January 2016, second is the forthcoming non-remuneration if lasting negative electricity prices create uncertainty about the future and, thirdly, the level of interest rates is picking up again.

As Hermann Albers, president of the German Wind Energy Association, emphasises, ‘The transformation in the electricity market is forging ahead. Cost-efficient wind energy still has great resources. Like the further expansion of bioenergy and solar energy, it is essential if we are to achieve the goals of the shift to renewable energy usage. It is also necessary to focus more sharply on the mobility and heat sectors, which to date have been treated more as poor relations. These have to be opened up to renewable energy. A dynamic expansion of land-based wind energy and a barrier-free access towards mobility and heat would contribute to achieving the internationally agreed overall climate policy objectives.’

Matthias Zelinger, managing director of VDMA Power Systems, notes that ‘With its strong domestic market and an export quota of up to 60 per cent, the German wind industry is healthy. The world market of 50,000 megawatts in 2014 is growing at an annual rate of 5 per cent. The wind turbines manufactured in Germany make up a fifth of the installed capacity throughout the world in 2015. But the expansion of land-based wind energy must develop equably also in Germany in the future, because the wind turbine manufacturers and their whole supply chain are burdened by the continuous alternation between phases of investment restraint caused by uncertain future framework conditions and phases where there is a clearance sale atmosphere caused by anticipatory effects’. And he adds: ‘To this end the volumes for tendering should be smoothed out as of 2017 and should take into account the average depletion over a longer period of time.’

(Source: VDMA Power Systems and Bundesverband WindEnergie e.V.)

The future of technology - Services

Source elementum

Components which follow a 'design for service' philosophy combined with an increasing reliance upon data analysis will be the driving force behind O&M cost reductions in the coming years.

Sub-components which are integrated into the drive-train, generator, electrical system or blade offer the ability for weight reduction as well as an improvement on reliability, but typically this level of integration makes service more difficult. Striking the right balance is key and modularisation of sub-components has already been undertaken by proactive OEMs and sub-component suppliers.

Additionally, crane solutions which are 'one size fits all' will be important for streamlined fleet management as companies look for a single solution that can handle 1.0–4.0MW designs. Trade-offs in capacity and cost of such systems have been prohibitive in the past, but now as we look towards the future, components will be larger, but more modularised. This will enable on-board service cranes which are less bulky and more cost-effective to use.
Remote inspection technologies including cameras mounted on drones or tower-climbing robots, and even physically planted on the nacelle or hub, can provide cost-effective insights for maintenance or end of warranty inspections. The value, however, will not be in the image capture, but the image processing. Automation around the interpretation of crack propagation or other damage will be critical while still providing a human element to validate the analysis.

CMS and SCADA data analysis can also reduce O&M costs, extend the life of wind parks to minimise unscheduled maintenance, and streamline spare-parts inventory in accordance with identified service requirements and known upcoming component replacements.

The power plant control (PPC) system, which will leverage off the Internet of Things (IoT), will also enable several key O&M-related technologies that hope to offset the revenue impact of unplanned downtime and minimise the impact on planned maintenance. In addition to the energy output optimisation potential, we should expect to see PPC systems which can manage:

- Maintenance scheduling of a wind farm based on lost income projections for turbine downtime.
- Spare-parts inventory management based on damage accumulation measurements, remaining useful life prediction and/or predicted maintenance interval. Lubricant quality, CMS and SCADA data analytics will all be incorporated into predictive models for turbine performance and maintenance.

Data analysis will be important, but data communication as well as visualisation of repair workflows will enable significant reductions in lost production time. The timely communication of service issues to the right level of technical skill will be key to identifying field issues and initiating suitable repairs. Tools which facilitate collaboration between on-site field technicians and remotely based engineers will enable faster diagnosis of turbine issues and faster implementation of solutions. A fully integrated platform which also feeds spares availability information will mitigate the downtime of the repair.

Future O&M strategies which will be successful will enable more time-effective use of personnel, modularised components which have been designed for ease of service, and data analysis tools which benefit field technicians as well as operations teams.

Philip Totaro, Founder & CEO, Totaro & Associates

Siemens' to test new wind turbine at Südermarsch Husum

Wind turbines are at best at places with good wind conditions. Wind conditions become better at higher altitudes. But due to regulations, hub heights are often limited at such sites. For inland locations, therefore, new turbines are being developed. Among other products and developments Siemens is showcasing its latest onshore model the SWT-3.3-130 at HUSUM Wind (at booth 2A10).

The SWT-3.3-130 wind turbine is currently undergoing trial testing. In autumn 2015, before the start of serial production, the SWT-3.3-130 will be placed in Südermarsch, the wind test area south of Husum.

The SWT-3.3-130 is the newest onshore model from Siemens for locations with medium and lower wind conditions. Production of the series will start in 2017. The German prototype with a hub height of 85 metres is meant as a preparation for the German market. The SWT-3.3-130 has a 3.3MW generator and a 130 metre rotor diameter.

SWT-3.3-130 in Südermarsch

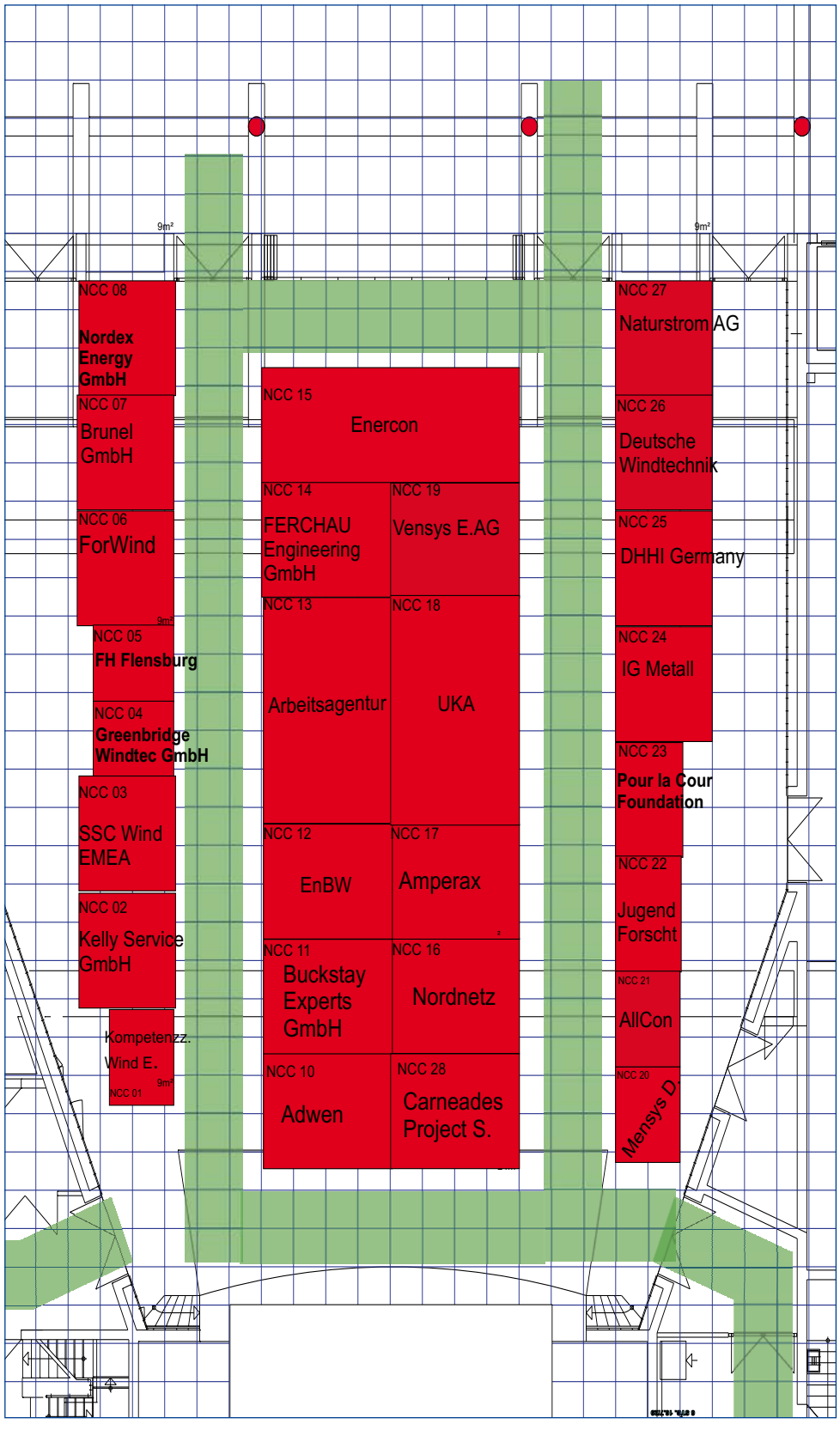
Windcareer Job Fair

The Windcareer job fair on the last day of HUSUM Wind 2015 is dedicated to careers, training and retraining in the wind industry. Personnel managers from enterprises such as Enercon, Deutsche Windtechnik AG, UKA, Ferchau and Nordex will be appearing as employers and trainers in the main auditorium of the congress centre from 10:00 to 18:00, where they will also be available for discussions.

Training, retraining and advanced training establishments such as the Oldenburger ForWindAcademy will be providing information about their seminars and courses. Also, together with them the fair will be holding a workshop with well-known speakers like Florian Rathkamp (Enercon) and Moses Kärn (ForWind).

Visitors to Windcareer not only profit from a comprehensive overview of potential employers, job vacancies and a wide variety of training opportunities, but can also take part in various workshops and have their job application folder and CV checked by Federal Employment Agency (Budesagentur für Arbeit) staff.

Job advertisements have already been published on the WindCommunity website (www.windcommunity.net). Windcareer exhibitors can publish their vacancies in the WindCommunity free of charge up to the last day of the fair. Jobseekers and those interested in a career in the wind industry can thus find out about the vacancies in advance, so that they know who to contact on the day. Windcareer attendees can also visit HUSUM Wind afterwards.



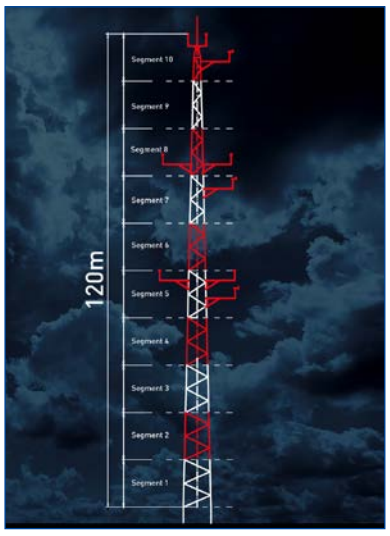
Exhibitor	Stand
ADWEN GmbH	NCC10
AllCon Service & Dienstleistungs GmbH	NCC21
Amperax Energie GmbH	NCC17
Arbeitsagentur	NCC13
Brunel GmbH	NCC07
Buckstay Experts GmbH	NCC11
Carneades Project S.	NCC28
Deutsche Windtechnik AG	NCC26
DHHI Germany GmbH	NCC25
EnBW	NCC12
Enercon GmbH	NCC15
Ferchau Engineering GmbH	NCC14
FH Flensburg	NCC05
ForWind	NCC06
GREENBRIDGE Windtec GmbH	NCC04
IG Metall Verwaltungsstelle Rendsburg	NCC24
Jugend Forscht	NCC22
Kelly SERVICES GmbH	NCC02
Kompetenzzentrum Windenergie SH	NCC01
Marvin Hensen	NCC22
Mensys Deutschland GmbH	NCC20
Naturstrom Ag	NCC27
Nordex Energy GmbH	NCC08
Nordnetz	NCC16
Pour la Cour Foundation	NCC23
SSC Wind EMA GmbH	NCC03
UKA	NCC18
Vensys Energy AG	NCC19

News

120-metre tall self-supported wind measurement tower

A new self-supported wind measurement tower from windhunter allows for high quality wind measurements even at cramped sites, very complex terrain, or when it is impossible to use guy wires, as with offshore platforms. The new self-supported tower is available up to 120 metres in height. Although the structure needs to be stronger due to the missing guy wires it is still slim enough to keep the influence on the airflow at the sensors as low as possible. This guarantees high quality wind measurement according to IEC 61400-12 and German TR6 standards – even when traditional met masts cannot be used.

Booth 1E19



Self-supported wind measurement tower

Wind power to serve a quarter of Europe's electricity demand by 2030

Wind power can meet a quarter of Europe's electricity demand by 2030 if Member States deliver on climate and energy pledges, according to the latest forecasts by the European Wind Energy Association (EWEA). Over the next 15 years, EWEA expects wind power installations in Europe to reach 320GW of capacity, which could serve 24.4 per cent of electricity demand across the region. Today, Europe's 128.8GW can meet over 10 per cent of European power consumption in a normal wind year. With 254GW from onshore wind and 66GW coming from offshore installations, the European wind industry will provide up to 334,000 direct and indirect jobs by 2030 in the most feasible scenario. However, the forecasts are contingent on a number of factors on the political and regulatory front including a clear governance structure for the EU-wide 27 per cent renewables target for 2030, which was agreed last year. Clear direction is needed from the European Commission to ensure that Member States propose robust national action plans for renewable energy and remain on track to meet the common target. The new scenario looks at both annual and cumulative installations (in megawatts) and includes a country-by-country breakdown for 2030, but not for intermediate years. The figures for EWEA's 2030 capacity scenario were developed in cooperation with national associations across Europe and industry leaders.

DEWI presents its services

This year DEWI is focusing on its due diligence, lidar and lidar verification services. Since Revision 9 of the German Technical Guideline 6 (TR6) one year ago, the significance of lidar has grown substantially and it is often the only measuring system. To receive an authorisation lidar verification is vital, so this has become an important part of DEWI's service portfolio.

Booth 1B04

Bachmann Monitoring secures order in Central America

Bachmann Monitoring GmbH (BAM) is taking its first step towards Central America. In three countries at once – Honduras, Nicaragua and Costa Rica – wind farm operators have decided to use BAM's condition monitoring (CMS) hardware and remote services. After extensive research Globeleq Mesoamerica Energy (GME) awarded the contract to the Thuringian experts due to their well-regarded modular technology and their long-standing know-how in drive-train monitoring. The GME order package consists of the hardware and monitoring contracts for a total of 83 type G8x/G9x Gamesa wind turbines. There has been considerable growth in the Latin American wind power market for some years. Nicaragua, Honduras and Costa Rica are countries with a tremendous potential for wind energy. While Honduras aims to meet 60% of the domestic demand with renewable resources by 2022, Nicaragua is aiming for 80% within the same time frame. Costa Rica is even targeting 100% renewables supply by 2020.

Booth 5B07

Always wind rich: Nicaragua's coasts

Beckhoff presents TwinCAT3 Wind Framework

Beckhoff is presenting its TwinCAT 3 Wind Framework at HUSUM Wind. The new software incorporates all basic functions from management through state of the machine, event management and database connection to simulations. It will enable manufacturers to quickly and easily program their wind turbines themselves. A ready-to-use application template reduces development time and costs and facilitates modular engineering. This not only saves work resources and cuts costs but also reduces the time to market. The integrated database connection records all necessary data in real-time and makes it available in a standard format that facilitates detailed analysis.

Booth 5B25

Offshore wind energy: expansion on schedule

In the first half of 2015, another 422 offshore wind turbines, with a combined capacity of 1,765.3MW went on line in Germany. Up to 30 June 2015 a total of 668 offshore turbines with an overall capacity of 2,777.8MW fed power into the German grid. With the current offshore wind energy output the system can supply around three million households with power. Another 90 turbines with a total capacity of 380.7MW are completely installed and due to start feeding in soon. The foundations for another 84 turbines have already been erected. Hence the industry expects a total of around 2,250MW of new offshore wind energy capacity to be feeding into the grid for the first time in 2015. In the German North and Baltic Seas wind turbines with a total capacity of up to 3,300MW should be hooked up to the grid by the end of the year, as planned. The associations and organisations involved in gathering these figures agree that by the end of the year Germany will have reached half of the 6,500MW target set for 2020. The second half can be gradually implemented in the next few years.

Booth NCC06

Hailo introduces GLOBALlift H

The Hailo GLOBALlift H range will mainly be manufactured near where it is deployed. At Hailo's own plants and production support facilities in China, Brazil, the USA and Europe, the new range of service lifts will provide for the booming markets quickly and flexibly. However, systems and tower constructors will also be able to use Hailo Wind Systems' products even in the most far-flung or developing wind power markets. Housings are economically prefabricated in series. All further components are supplied in a bespoke form in accordance with the tower layout and the country-specific conditions and completed at the international production support facilities. In this way, the service lifts can be adapted 100 per cent to the specific customer requirements. Susceptibility to faults and the resulting maintenance times should be reduced as

Hailo GLOBALlift H

the devices are made up of fewer, and simultaneously optimised, individual components. All components are manufactured in accordance with high internal quality standards to guarantee uncompromised safety.
Booth 5B30

3M Technical Ceramics presents 3M Friction Shim

3M Friction Shims consist of a thin, elastic metal foil, coated with a nickel matrix on both sides. Embedded in the nickel are a predetermined number of diamond particles with a defined particle size. When the shim is mounted between two parts, the diamond particles cut into the two adjacent surfaces and create a micro-scale interlock. The friction-enhancing shims offer a simple, reliable and cost-effective way to transmit higher loads and torques without requiring any modifications to the joint design. The products are a weight and space-saving alternative to conventional solutions that require larger bolting or expensive joints that are difficult to make. Using 3M Friction Shims also increases power reserves to enhance future performance levels.
Booth 3C12

DNV GL awards component certificate to ABB Switzerland

DNV GL has awarded ABB Switzerland component certification for its latest generation main frequency converter. The PCS6000 medium voltage wind converter has been developed specifically for use in offshore wind turbines and is available for capacities up to 12MW, thus offering a future-proof solution. The certificate was presented during HUSUM Wind 2015 by Mike Wöbbeking, Head of Certification Body, DNV GL, and Matthias-Klaus Schwarz, Head of Section Electrical Systems, DNV GL, to Stephan Ebner, Head of Product Management & Quality at ABB Switzerland. The component certificate allows ABB Switzerland to state that its converter is in compliance with offshore wind turbine guidelines, and meets with all the requirements relating to safety, functioning and quality that are needed for use in the tough environment for wind turbines. Furthermore, it will simplify and speed up the overall certification process of new wind turbines for manufacturers, as they are only required to provide documentation

Presentation of the component certificate at the HUSUM Wind exhibition 2015

concerning integration of the converter in the wind turbine. The certification of the PCS6000 will provide ABB's customers with the assurance needed before integrating the component into the turbine design and confidence in choosing ABB as a credible supplier.
Booth 1E28

GE and Sinomach to jointly promote clean energy in Africa

GE and Sinomach (China National Machinery Industry Corporation) have signed a memorandum of understanding (MoU) to collaborate on clean energy projects, an initiative to double access to power in Sub-Saharan Africa. With the MoU, GE and Sinomach agree to enhance cooperation for projects in Africa's clean energy sector; jointly develop, invest and finance clean energy projects under the Power Africa initiative; and collaborate on the Kipeto Wind Power Project to build an installed capacity of 102MW for Kenya's power grid as the pilot project of the agreed cooperation. The Kipeto Wind Power Project will be built in Kajiado, 80 kilometres south of Nairobi. When completed, the Kipeto project will have 47 GE 1.6-100 wind turbines and 16 GE 1.6-82.5 wind turbines (each with the capacity of 1.62MW).
Booth 3B06

DEWE-3300-PM for mobile power analysis

The new DEWE-3300-PM is the smallest all-in-one broadband power analyser from DEWETRON. This mobile data acquisition system measures up to 16 isolated signal inputs synchronously with counters as well as digital I/Os, video or GPS information. With 16, 22 or 24-bit resolution, the sampling rate is up to 2MS/s per channel. The all-in-one instrument provides power supply options for probes and has hot-swappable batteries that guarantee continuous operation without an external power source. The 15-inch multi-touch wide-screen display enables simple usage and good screen overview.
Booth 1A13

DEWE-3300-PM

HUSUM Daily 2015

During the four days Windtech International will publish the HUSUM Daily. The HUSUM Daily will be prepared and edited by a team from Windtech International in cooperation with staff from HUSUM Wind. Each day we will work on the issue to be published the following morning. If you have editorial material you want considered for publication please make sure that we have it before 1 pm each day.

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