

## UK commits to offshore wind — but only if costs come down

Rudd also vows to phase out coal by 2025, but confirms zero support for onshore

Energy secretary  
Amber Rudd



ANDREW LEE

Offshore wind projects may be able to bid in three auctions for UK government-backed power contracts before 2020, energy secretary Amber Rudd said yesterday, adding that up to 10GW of the renewable source could be supported through the 2020s if costs come down far enough.

The apparent recommitment to offshore wind — albeit with conditions attached — sparked an immediate positive response from Spanish energy giant Iberdrola, which said it lodged a planning application yesterday for the 1.2GW East Anglia 3 project off eastern England.

The sector has been crying out for guidance on the timing and scale of

Rudd's plans for offshore wind since her Conservative Party took power at the national election in May and put on ice plans for more auctions under the new Contracts for Difference (CfD) support system.

Admitting that “investors have the right to clarity”, Rudd said offshore wind had proved itself a “technology which has the scale to make a big difference”. She expects to see 10GW in place off the UK by 2020.

It can add value to the economy as well as provide power, she said, noting that costs have fallen by 20% in the last two years.

“But it is still too expensive,” she said, adding that “further support will be strictly conditional on the cost reductions we have seen already accelerating.

“The technology needs to move quickly to cost-competitiveness. If that happens, we could support up to 10GW of new offshore wind projects in the 2020s.”

Rudd said offshore wind could be given the chance to compete in three CfD auctions before 2020, with the first planned before the end of 2016, if costs fall far enough.

The energy secretary did not specify a target cost for the offshore sector, which is working towards its own goal of £100 (€143) per MWh by 2020.

The first CfD auction in February this year saw two offshore wind projects totalling 1.16GW offered CfDs after tabling bids of £119 per

## Enel to take 100% control of green unit

ANDREW LEE

Enel has confirmed plans to take full control of its Enel Green Power (EGP) subsidiary, saying the renewables unit will be its “engine of growth” for the future.

Enel, which currently owns 69% of EGP, will exchange the outstanding shares for its own stock in a transaction due to complete by the end of the first quarter of 2016.

Italy's biggest power utility says that reabsorbing EGP — which was the subject of a 2010 stock market listing — will give the clean-energy business the extra financial firepower needed to fulfil its huge potential.

Outlining its 2016-19 strategic plan, Enel said renewables development will account for more than 50% of group growth capex, “positioning EGP as the engine of Enel's growth”. The utility plans to add 7.7GW of renewables in 2016-19, leaving it with 52% of its generation coming from renewables by 2019, up from 38% in 2014.

EGP had 10.6GW of renewables by the end of September 2015, 6.6GW of it wind.

Enel expects 42% of its extra capacity to come in Latin America, 16% in North America and 11% in Europe. The 31% growth foreseen in the rest of the world reflects EGP's ambitions in Asia, where it recently made its first investment by taking control of an Indian wind developer. □

VISIT RECHARGE  
AT STAND K22

Continued on page 2

# EC ready to get tough on green targets

CHRISTOPHER HOPSON

The European Commission (EC) has indicated it is ready to “step in” to ensure that countries reach the EU’s 27% renewables target by 2030.

The EC vice-president for Energy Union, Maroš Šefčovič, delivering his “State of the Energy Union” address, said the commission would, if necessary, introduce measures and policies to complement actions by member states.

“Nine months down the road, we can say with confidence that we are on track to deliver Energy Union,” Šefčovič said. “2016 will be the year in which we will lay the foundations of a robust governance system bringing predictability and transparency, which is what investors need.”

EWEA says the commission must now define the circumstances in which it would intervene, and how such measures would be enshrined in the new Renewable Energy Directive.

The association is calling on member states to set individual renewables commitments by no later than December 2017.

In the event that national



Maroš Šefčovič speaking at the opening session on Tuesday

commitments do not meet the overall 27% target, it wants the commission to broker co-operation between countries.

EWEA says if member states fail to make up the shortfall, the EC must set up a programme by January 2020 and require countries with low contributions

to pledge to an EU-wide renewables development fund.

The association is calling for the EC to make official policy recommendations on national action plans every two years. It says the commission must also have the authority to intervene when member states make

counterproductive changes to domestic renewables policies.

EWEA says renewables contribute €130bn a year to the European economy and €35bn to export revenues, while the continent’s turbine manufacturers have a 40% share of markets outside the EU. ☐

## UK backs offshore — if costs come down

Continued from Page 1

MWh and £114/MWh.

Rudd gave the offshore wind steer as part of a wide-ranging speech on UK energy policy that also outlined plans to phase out Britain’s coal fleet by 2025.

She said the UK will look to gas, nuclear and — if it can meet her as-yet-unknown cost criteria — offshore wind under a revised energy strategy that places an emphasis on security of supply.

Rudd reconfirmed the government’s position that onshore wind and PV are mature enough to compete with little or no subsidies.

They have borne the brunt of support cuts since the Conservatives took power.

Rudd claimed: “We have enough onshore wind in the pipeline to meet our 2020 expectations.

“That is why we set out in our manifesto that we would end any

**/// We have enough onshore wind in the pipeline to meet our 2020 expectations**

new public subsidy for onshore wind farms.

“The costs of solar have come down too. Over 8GW of solar is already deployed, and even with the cost controls we have proposed, we expect to have around 12GW in place by 2020.”

The Solar Trade Association (STA) urged Rudd to ensure that PV can compete fairly with other generators.

STA chief executive Paul Barwell said: “The level playing field the secretary of state wants to see in energy is very welcome, and if implemented that should mean solar is squarely back in the game. However fossil-fuel incentives currently distort the market.

“Gas and large-scale solar will soon need very similar levels of support, but unlike gas, solar has the bonus of zero-carbon emissions, future price certainty and no dependency on imports from unstable countries.” ☐

## IEA to refocus on renewables

BRIAN PUBLICOVER

The International Energy Agency (IEA) yesterday endorsed plans to modernise the Paris-based organisation around promoting renewables, broadening energy security and deeper engagement with emerging economies.

US energy secretary Ernest Moniz told journalists in Paris yesterday that IEA member countries had “roundly supported” the agenda of executive director Fatih Birol.

“Renewables will be the number-one fuel, overtaking coal, very soon in terms of their contribution to electricity generation,” said Birol, who started his new role in September. ☐

# New Enercon low-wind turbine will fly world's longest onshore blades

BERND RADOWITZ

German OEM Enercon has unveiled low-wind versions for both its 2MW and 4MW turbine platform ranges.

The new 4.2MW E-141 EP4 will feature a 66.7-metre blade — the longest in onshore wind, the company says — as part of a 141-metre-diameter rotor. The blade will be divided into two parts for optimised production and logistics, like that of Enercon's E-115 model.

The turbine maker only launched its new 4MW platform in April, presenting the 4.2MW E-126 EP4 as its next "bread and butter" model.

The new E-141 EP4 will

generate an annual energy yield of more than 13GWh even at sites with relatively low wind speeds of 6.5 metres per second, making it the world's highest-yielding turbine in Class 3 winds, Enercon claims. A prototype is planned for late 2016, with serial production starting in 2017.

The company is also presenting its 2.35MW E-103 EP2 low-wind model, which it says will improve annual energy yield by 10% compared to its E-92 model. Production is scheduled to start in 2017.

Enercon will offer the new 4.2MW model with hub heights of 129 and 159 metres, and the 2.35MW machine with hub heights of 98 and 138 metres.



Enercon managing director Nicole Fritsch-Nehring

The company has also announced an increase in the power output of its E-115 machine from 3MW to 3.2MW, which it claims will increase annual power yield by about 3%.

"We are going to continue driving the development of technologies with a high potential

for innovation in order to lower power-generation costs while increasing [turbine] coefficient," says Enercon managing director Nicole Fritsch-Nehring.

Enercon is still listed as an event ambassador for EWEA 2015, despite pulling out of the show following the Paris attacks. ☐

## DNV GL AT THE EWEA 2015 ANNUAL EVENT

Find us at Stand H04

We like to invite you to join our side events on the 18<sup>th</sup> & 19<sup>th</sup> November:

- **Expert Talk on the launch of the new Turbine.Architect Software tool**

Join the launch of our new Turbine.Architect software tool, enabling turbine engineers and component developers to quickly calculate the impact of their technology on Levelised Cost of Energy for a realistic wind project.

**When:** 18<sup>th</sup> November 2015, 12:00 p.m. **Where:** DNV GL booth, number H04

- **Breakfast Seminar on Modelling long flexible blades in Bladed**

An introduction to the requirements of the next generation turbines with long, flexible blades. Join us for this breakfast seminar where we will demonstrate what DNV GL's Bladed software adds to the blade analysis process, and discuss with our experts how it can support your design team.

**When:** 19<sup>th</sup> November 2015, 9:30 a.m. **Where:** Exhibition Meeting Room A

- **Workshop on Floating offshore wind - Identifying the challenges and managing the risks**

Join our experts to learn more about the design challenges and risk management of floating offshore wind technology and projects. Highlights include the current status of floating offshore wind in France and how to make floating wind concepts more economic.

**When:** 19<sup>th</sup> November 2015, 11:30 a.m. **Where:** Exhibition Meeting Room A

- **Expert Seminar on High product quality and flexible certification**

Get an exclusive introduction into DNV GL's new standard for rotor blades which will be published end 2015. Furthermore, questions on maintenance, cost reduction and your benefits on working according to this standard will be addressed.

**When:** 19<sup>th</sup> November 2015, 1:45 p.m. **Where:** Exhibition Meeting Room A

**BERND RADOWITZ**

Nordex is “looking into the next generation of machines” and may start producing parts of its wind turbines at Acciona Windpower (AWP) plants overseas once the €785m (\$843m) acquisition of its Spanish peer is completed, chief executive Lars Bondo Krogsgaard tells *Recharge*.

Nordex isn't necessarily seeking a bigger generation capacity (its largest current model is 3.3MW), but the optimal split between the rotor diameter and the name plate rating, he explains.

“We look at what we think is optimal in terms of the levelised cost of energy of our customers, and that is what will drive us. Whether that will become a 4MW machine or something less, I couldn't comment on right now,” he says. Fellow German OEM Enercon introduced a 4.2MW machine earlier this year, which it hopes will become its “bread and butter” turbine.

While Nordex's manufacturing unit in Rostock, Northern Germany, is “running at more or less full speed,” Krogsgaard says that, in principle, Nordex machines could also be built at AWP plants. The Spanish company has active production in Spain and Brazil, another plant under construction in India, and a manufacturing facility in the US that is currently idle but could be switched on again at any time.

“We see that as a nice flexibility to get for our business.”

India — where Nordex so far has no activities — has a very significant potential and is a target market, he says, adding that the machines likely to be sold there



# Nordex planning the next generation

Nordex chief executive Lars Bondo Krogsgaard

are AWP rather than Nordex models.

And although Nordex and Acciona Windpower initially will each keep their brands, Nordex has closer integration in mind, including the transfer of technology from one company to the other. For instance, Nordex has specialised in machines for extreme conditions, with hot-climate models for Pakistan, or cold-climate units for Scandinavia.

“We will leverage each other's skills as much as we can to get

to a good joint platform for all our technology going forward,” Krogsgaard says. “So, we also plan to use elements of Acciona in Nordex turbines, and there are things that they could do with our technology that would also make good sense.”

With its booming German home market expected to shrink from current high levels of 4-5GW per year to a “more realistic level in the 3GW range,” Nordex is happy that through AWP it will be able to tap into promising emerging markets. Next to India, Krogsgaard

mentions Mexico, which he believes will become a top-ten market in the coming years, with an estimated 1GW-plus annual market.

“With the acquisition of Acciona Windpower, we have established a foundation for growth in virgin markets that we didn't have before,” he says. “So we think that with the step we took with the Acciona deal, we are addressing precisely the volume issue that you have as a risk in some of the key European markets right now.”

Photograph | Nordex

# THE GEARLESS WIND TURBINE



Very glad to welcome you on our booth L03

# THE G126-2.5 MW

more power from low wind sites

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THE WIND  
YOUR WAY**

At our stand (H05) at EWEA Paris you can learn more about the new G126-2.5 MW, Gamesa's latest technological milestone in capturing the power from low wind speeds. The combination of a novel 126m rotor and a powerful 2.5 MW generator delivers a best-in-class capacity factor and reduces the cost of energy by harnessing 20% more of the wind's power.

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# ‘France should be wind number two in EU’

**BERND RADOWITZ**

France could nearly triple its accumulated wind capacity by 2023, according to a study.

After ending 2015 with an onshore capacity of 9.8GW, wind broke through the 10GW barrier in October this year, and is expected to reach 24-27GW within eight years, according to the study by the BearingPoint consultancy, commissioned by the national wind-energy association, France Énergie Éolienne, FEE.

Last year, 1.04GW was added, making France one of Europe’s top wind markets.

“We expect roughly the same number this year,” Olivier Perot, president of FEE’s industry commission, and general director of Senvion in France, told an EWEA 2015 panel yesterday, adding that growth might increase somewhat in coming years.



“If you look into the future, France should be number two in terms of growth perspective in Europe,” he said.

In accumulated terms, Enercon, Vestas, Senvion and Nordex share 80% of the market.

The positive installation figures were reflected in job numbers, with 12,525 people working across 750 companies in the French wind sector — a 15.4% increase from a year earlier.

The government, meanwhile, is

preparing to change the support mechanism for wind and other renewables technologies from a feed-in tariff (FIT) system to one based on tenders.

At the opening of EWEA 2015 on Tuesday, French energy minister Ségolène Royal guaranteed the sector that FITs will be maintained until the end of 2018, but the government is preparing legislation to introduce Contracts for Difference (CfD), like the UK system.

Perot said it is important that the transition towards a new support system is an evolutionary process in which some companies can test the CfD scheme before it is adapted industry-wide.

France is preparing the change to comply with competition rules by the European Commission, which has already forced Germany to switch its successful FIT programme to a system based on tenders. ☐

Photograph | Jason Bickley/EWEA

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## WHEN?

**Wednesday November 18th: 10 am – 5.30 pm**  
(winner will be announced at 5.30 pm at the CG booth during the CG beer reception)

**Thursday November 19th: 10 am – 5.30 pm**  
(winner will be announced at 5.30 pm at the CG booth)

## PRIZE TO WIN?

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CG is an established turnkey “Design and Build” contractor for onshore and offshore grid connection infrastructure. CG also manufactures SLIM® wind turbine transformers, power transformers, switchgear, automation and control products for wind farm projects. Project references include Offshore Wind Farm Substations at Belwind, Butendiek, Amrumbank, Gemini, Northwind and Luchterduinen.

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# Dong boosts Humber economy

CHRISTOPHER HOPSON

Dong Energy's £6bn (€8.5bn) investment in the Humber region of northeast

England, will support an average of 1,600 local construction jobs from 2015-20 and 500 long-term O&M jobs post-2020, the Danish energy giant has announced.

According to a report produced for Dong by independent consultancy Regeneris Consulting, the company's offshore wind activities in the economically deprived region — which includes the ports of Grimsby and Hull — will add £1.2bn to the local economy (in profits generated by local businesses and employee salaries).

"Our £6bn of investment in the Humber by 2019 is creating long-term high-skill jobs, supporting a thriving UK supply chain and helping the region continue as a hub for the UK's



The first of the 6MW Siemens turbines installed at Westermost Rough

renewable-energy sector," says Brent Cheshire, Dong's UK country chairman. "Along with other offshore wind companies, we are making a major contribution to the development of the 'Northern Powerhouse', building strong local economies for years to come."

The "Northern Powerhouse" refers to the Conservative government's aim to boost economic growth in the north of England.

Dong has two operational offshore wind farms in the Humber area — the 270MW Lincs, which is co-owned by Centrica and Siemens Project Ventures, and the 210MW Westermost Rough, jointly owned with Marubeni and the UK Green Investment Bank. The 580MW Race Bank project, wholly owned by Dong, is under construction, with commissioning expected in 2018. The 1.2GW Hornsea 1 project, also in the vicinity and wholly owned by Dong, has received its consents and is due for completion in 2020.

Siemens has been selected as the preferred supplier for Hornsea 1, which contributed to the German company deciding to build a turbine factory in Hull. ☐

## Ambau to supply Nordergründe

Germany's Ambau has won an order from Senvion to produce 43-metre-long steel tower segments, transition pieces and monopile foundations for the 110MW Nordergründe offshore wind farm in the German North Sea.

The installation of 18 Senvion 6.2M126 turbines atop these towers is planned for the summer of 2016. ☐

## Faster fatigue tests

A 40.3-metre blade is being put through its paces as part of a project between LM Wind Power and the UK's ORE Catapult to develop a new testing method to halve rig time.

The "bi-axial" technique would allow flapwise and edgewise fatigue tests to be run at the same time, cutting fatigue-testing alone by 25%. ☐

Photograph | Dong Energy



# ENVISION BEER RECEPTION

Envision invites you to an afternoon reception with beers and snacks at our stand. Come have a chat with our team and learn more about our smart energy solutions.

**Join us at stand D17 today:  
Thursday, 19 November from 17:00 - 18:30**

Scan the QR-code to add the reception to your calendar.





SIEMENS

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EWEA 2015

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# WindTrust focus benefits blades

DARIUS SНИЕCKUS

Turbine blades have been the main beneficiary of the latest work by the WindTrust project as it moves into its third and final year.

The EU-funded initiative aims to improve the performance and durability of rotor blades, power electronics and control systems.

Mauro Villanueva, from WindTrust co-ordinator Gamesa, says the project has made advances in areas including a life-extending coating protection system; load-reducing turbine control algorithms; and optimisation of carbon-fibre use, to beef up blade durability and trim weight.

“Our research aims to maximise performance versus component life,” he says. “The decreased cost of repairs and less downtime will render an increase in the amount of energy produced and an overall reduction in costs.”

Photograph | LM Wind Power



Michael Drachmann Haag, lead engineer at project partner LM Wind Power, sees the blade coating system as having particular promise. “Extensive research has led to the development of a novel leading-edge protective solution that surpasses all current test standards,” he notes.

The technologies hatched will be tested on a 2MW onshore

turbine to demonstrate their technical and economic feasibility, with results extrapolated for larger turbines and offshore locations.

Other WindTrust partners include power module maker Semikron and research centres CENER, CRES, the Technical University of Denmark and the universities of Strathclyde and Southampton. □

# Hamburg office leads Envision's global push

DARIUS SНИЕCKUS

Chinese turbine developer Envision Energy's new European head office in Germany will spearhead its ambitious plans to press forward into international markets.

The Hamburg office will serve as a base for the company's “entire operations team”, which will work with clients in the selection, execution and O&M phases of wind projects.

“It is strategically important for Envision to enter the international market, since it helps us to provide the best-quality service solutions to global projects...” says Envision executive director and head of international business Felix Zhang.

“We believe our biggest game-changer is our approach and software.” □

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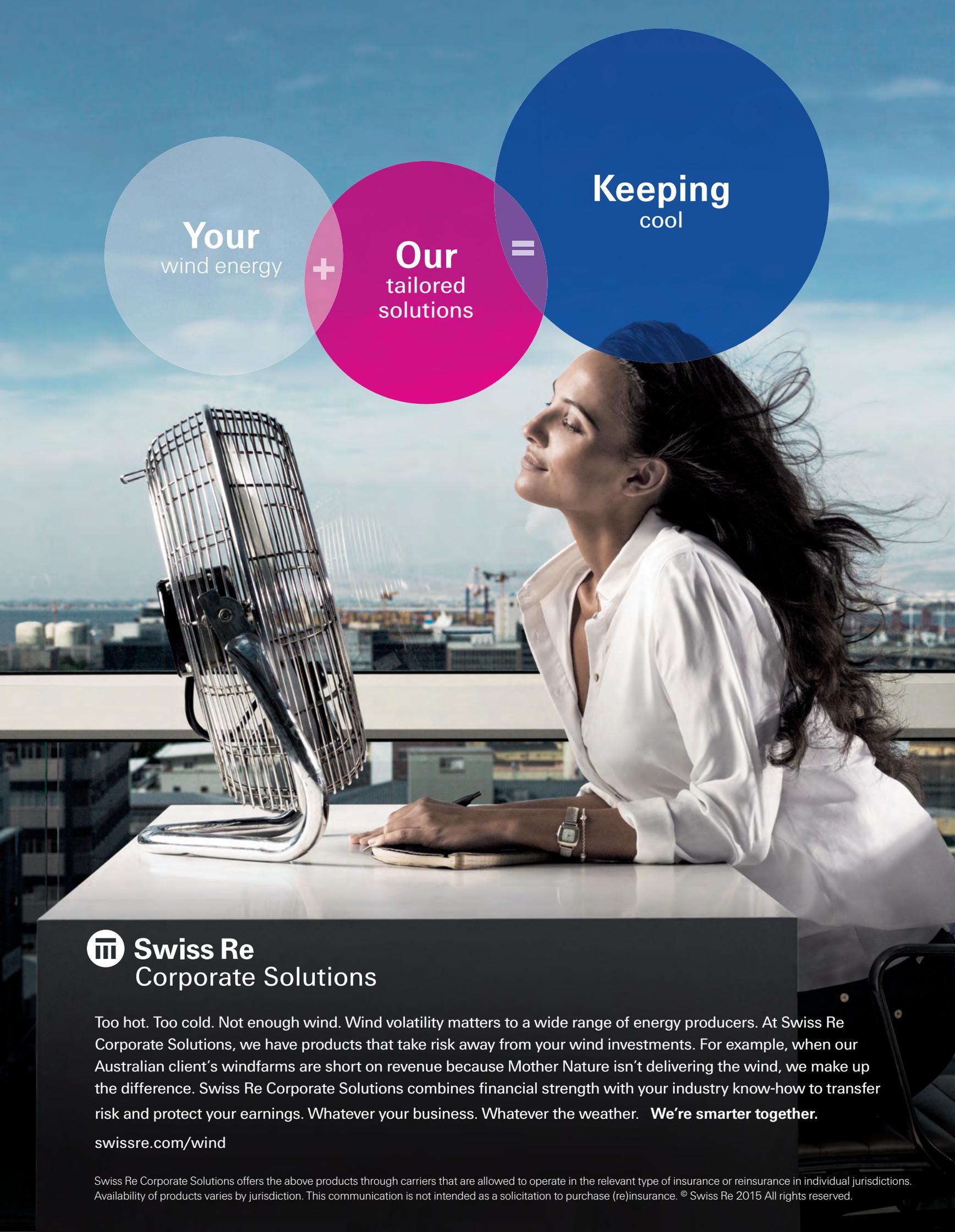
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Thursday 19 Nov

**HAPPENING TODAY**

**Conference sessions: Top picks**

09.00-10.30

**Control & LiDAR**

Room: Montmartre

**Advanced modelling of offshore and stratified flow**

Room: Montparnasse

**New and traditional financial instruments: their dynamics and potential to lower the cost of capital**

Room: Belleville

11.30-13.00

**Doing business in non-European markets**

Room: Montmartre

**Wakes: LiDAR measurements, layout optimisation and modelling uncertainties**

Room: Montparnasse

**Ensuring best and consistent practice in health & safety**

Room: Belleville

**13.30-14.15 Visionary debates**

Lunch area

14.30-16.00

**Innovation in wind turbine drive trains**

Room: Montmartre

**Advanced design and control solutions for grid integration**

Room: Montparnasse

**Financing Europe's wind energy potential: lost stream or land of plenty?**

Room: Belleville

17.00-18.30

**Aerodynamics**

Room: Montmartre

**Condition-based decision support**

Room: Montparnasse

**Managing risk and standardisation**

Room: Belleville

**NEW AT EWEA 2015 ANNUAL EVENT**

**Offshore village**

Gateway to the energy of the future.

A platform to communicate on recent success stories, case studies and ongoing progress in building an efficient supply chain to achieve an improved long-term ROI.

**Career area**

A great platform for participants to be informed about current and future job opportunities within the European wind industry. Discover the current vacancies and opportunities posted by exhibiting companies at EWEA 2015 and by other member organisations of EWEA.



**Not a conference delegate?**

You can still purchase single conference session passes at the registration desks.



**SIDE EVENTS**

Networking opportunities to meet decision makers, the right people relevant to your business, and to secure deals.

**Challenges of the changing legal environment for investors in the wind energy sector in Europe. Markets in focus: France, Germany, Italy, Poland, UK**

09.00-11.30

Espace 2000 D (Level 1); invitation only

Dentons lawyers from five major EU renewables markets will highlight key issues to watch out for when structuring and writing contracts for European wind projects in this new environment

**International collaboration on wind energy research, development, and deployment: Results of the International Energy Agency Wind R&D programme**

09.00-11.30

Espace 2000 C (Level 1); all participants

The session will consist of 4 panels:

Panel 1 - Wind Technology Development

Panel 2 - Wind Characteristics and Integration

Panel 3 - Wind Turbine Testing and Certification

Panel 4 - Social, Environmental, and Economic Aspects of Wind Energy

Each panel member will provide a high-level summary of a current research topic, followed by a facilitated question and answer period.

**French maritime industry committed to offshore wind**

10.30-12.00

Press Conference Room

A presentation of the main innovative developments and French commercial offers in terms of offshore wind (bottom-fixed and floating), to tangibly illustrate the French industries' successes, and reflect the country's ambition to be a leading figure in this revolution, at a global level.

**Baltic Sea region market – the role of wind**

11.30-13.00

Espace 2000 B (Level 1); all participants



The main objectives of this workshop are to promote the concept of a strong regional market with all Baltic Sea Member States, and to discuss what is needed to facilitate the creation of a real power market and integration of wind in the region in a well-balanced manner.

**Funding innovative low-carbon energy demonstration projects: The NER 300 programme**  
14.30–16.00

**Espace 2000 B (Level 1); pre-registered participants only**  
This event will provide an overview of the current state of the NER 300 programme and its future.

**Canada: A Wind-Wind Opportunity**  
14.30–17.00

**Espace 2000 C (Level 1); all participants**  
At this side event, you will hear from Canadian researchers, private companies and academics about opportunities for research and development initiatives, investment in Canadian projects, as well as demonstration projects aimed at the continuous advancement of wind energy innovations and developments in the country.

**Reducing costs in the offshore wind supply chain: two examples from the LEANWIND project**  
15.00–17.30

**Espace 2000 D (Level 1); pre-registered participants only**  
This is the key focus of the EU-funded project LEANWIND, which began in December 2013. This event will highlight two potential areas for cost optimisation examined so far: minimisation of maintenance visits to offshore wind turbines, and a ports and infrastructure suitability assessment.

**Beyond Subsidies — meeting the challenge for small wind distributed energy generation**  
15.30–17.30

**Espace 2000 A (Level 1); invitation only**  
Discuss with the Britwind team and hear about how they are overcoming technical challenges to generate high performance with low cost of energy in small wind turbines, allowing distributed generation to be financially attractive without subsidy.

## MEET THE EXPERTS

Media lounge; all participants

10.45–11.30

**Finance: Who's your asset?**, Ariola Mbistrova, Finance Analyst, EWEA

11.15–14.00

**Trade: Paving the way for your goods**, Pierre Tardieu, Deputy Director for Public Affairs, EWEA

## VISIONARY DEBATE SERIES

Every day from 13.30–14.15  
Lunch area; all participants

EWEA and MHI Vestas Offshore Wind are proud to host a series of inspirational debates tackling some of the world's most challenging issues, moderated by Euronews anchor Chris Burns.

## CHILL OUT

**Poster session and Poster award ceremony**  
10.30–11.30 Poster presentation session  
16.00–17.00 Poster presentations and awards  
Poster area; all participants

**EWEA stand party**  
16.30–17.30

**EWEA stand — M09; all participants**  
Join us and learn more about how EWEA can contribute to your business growth. Enjoy a glass or two as the winning city to host the 2017 Annual Conference and Exhibition will be revealed.

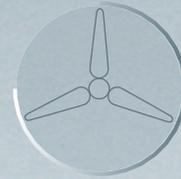
**Acciona Windpower stand party**  
17.30–19.00

**Acciona Windpower stand — D12; all participants**  
After the closing of the third day at EWEA, come to share a glass of wine and a snack at our stand.

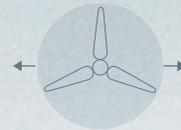
**Gala dinner**  
19.30–23.00

**Musée des Arts Forains, Paris; registered participants only**

**4 MW  
PLATFORM**



**NEW: E-141 EP4**  
Ø 141 m  
IEC IIIa



Ø 126 m  
IEC IIa

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# Report: '35% of UK power from offshore by 2030'

Siemens 6MW turbines at the Westernmost Rough project in the UK North Sea

## ANDREW LEE

The UK's increasingly productive and cost-competitive offshore wind sector is well placed to supply 35% of the nation's power demand by 2030, claims a new industry study.

Britain's offshore wind industry — already the global pacesetter with 5GW in place and on course for about 10GW by the end of the decade — has matured rapidly to the point where it could “readily” build 30GW by 2030, according to the Offshore Wind Vision report, which was released yesterday by the Dong Energy-backed Offshore Wind Works campaign.

The study charts the huge progress made by the industry, which it says has already seen the level of subsidy needed fall by 38% and is on course to be competitive with other new generation sources by the mid-2020s, thanks to technological advances and some of the world's best wind resources off the UK.

The report also flags the

growing contribution of offshore wind to the UK economy, with £9.5bn (\$14.4bn) of investment attracted since 2010 and £90m of government-assisted exports last year.

The industry already supports 13,000 jobs and could boost that to 50,000 skilled posts if it achieves its full potential by 2030.

The report was prepared as part of the UK's first Offshore Wind Week, which is supported by major industry players such as Dong, MHI Vestas, Siemens, ScottishPower Renewables and RWE.

Its release comes at a sensitive time for UK renewables policy, with support under pressure from the Conservative government.

The UK offshore sector is pleading with ministers to give clear direction over policy and ambition into the 2020s, or risk seeing investment momentum fizzle out.

Yesterday also saw the release of a report showing that the industry is on track hit its target of 50% UK content, with 43% of spending across the project lifecycle currently directed locally.

The local-content report was commissioned by the Department of Energy and Climate Change, seabed landlord the Crown Estate and industry

**Britain's offshore wind industry... could 'readily' build 30GW by 2030**

body RenewableUK, and looked at ten offshore wind farms accounting for about 80% of UK capacity.

Benj Sykes, co-chair of the government-industry Offshore Wind Industry Council said: “We expect the amount of UK content to grow as more companies base their operations here.”



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# Japan 'to play key role in Taiwan offshore'

**BRIAN PUBLICOVER**

Taiwan's ambitious offshore wind installation target has garnered the attention of a number of European players — including companies such as Siemens, K2 Management and A2SEA — but Japanese expertise will play a key role in helping Taipei achieve its goal of 4GW by 2020, according to Japan's leading

expert on offshore wind.

"Compared with Japan, Taiwan has good potential," says Takeshi Ishihara, a University of Tokyo researcher and, as a key figure in Japan's Fukushima Forward floating wind consortium, one of Asia's leading experts on offshore wind.

Annual mean wind speeds are higher than ten metres per second in some parts of the Taiwan Strait, among the fastest in the world, he adds.

As a technical advisor to Japanese certification outfit Class NK, Ishihara believes that Japanese expertise in dealing with Asia's notoriously fierce typhoons and earthquakes should play a critical role in shaping the future development of Taiwan's nascent offshore wind industry.

"Taiwan hasn't done any demonstration projects. They



Takeshi Ishihara

want to go the commercial phase directly. So this means that it's better to use the experience in Japan — we know how to do demonstrations, we understand the difficulties."

Yu-Ti Jhan, an official from Taiwan's CR Classification Society, tells *Recharge* that just 16MW — Taiwan's first-ever offshore wind turbines — are tentatively scheduled for grid connection by

the end of 2016. Local developer Swancor Renewable Energy will install those Siemens 4MW machines at its 128MW Formosa 1 site in the Taiwan Strait.

There are two other offshore projects in the country, a 108MW wind farm planned by state-owned utility Taipower — which aims to install the first two 4MW turbines by 2017 — and Taiwan Generator's 108MW Fuhai project. ☐

Photography | iStock | Michio Jones

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Turbines in Berg, Lower Austria, a state that is now 100% powered by renewables

# Sun setting on Austria's rapid expansion

## BERND RADOWITZ

Following four years of break-neck growth in wind power, the Austrian market is set to slow down dramatically as lower wholesale power prices mean the capped support scheme will only be able to pay for smaller volumes, the Austrian wind energy association IG Windkraft warns.

"To be able to secure the wind power expansion in the long run and maintain its full economic and job potential, an amendment of the Green Power Law is imperative," says IG Windkraft managing director Stefan Moidl.

The group says that Austria is still expected to add 300MW of fresh wind capacity, placing it among the countries with the highest wind expansion *per capita* in Europe.

That follows an expansion of 411MW last year, and around

300MW in both 2012 and 2013. The rapid build-up was made possible by a 2012 reform of the country's Green Electricity Law, which established more stable feed-in tariffs (FITs) for wind farms, and adopted more ambitious targets for green power

**// We can't keep up this high level [of installations] with the current legislation**

beyond the country's vast hydro potential.

"We can't keep up this high level [of wind installations] with the current legislation," IG Windkraft spokesman Martin Fliegenschnee-Jaksch tells *Recharge*.

Taking into account pre-registered wind projects, the group expects the annual volume

to halve to about 150MW from 2016 to 2018.

The expected drop comes as FITs are capped at about €50m a year, on a first-come-first-served basis.

As support finances the gap between wholesale power prices and FIT rates, the lower electricity prices on the power exchange in Leipzig (that also determines prices in Austria) mean there will be less money available.

As an increasing amount of power from renewable energy in Germany is flooding the wholesale market at a cost of almost zero, the cost for the next cheapest energy — lignite or coal on most days — determines the wholesale price. For 2016, forward-traded baseload power was settled at a rock-bottom €32

per MWh, according to utility RWE.

Last week, it was proudly announced that Lower Austria



Stefan Moidl

will be the second of the country's nine states to meet 100% of its electricity needs from renewable.

But such success stories may become rarer unless Vienna reforms its legislation. ☐

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Five Minutes with...

# HANS-DIETER KETTZWIG

**Hans-Dieter Kettwig** has been managing director of German turbine maker Enercon since 1997. For the past three years, he has also been chairman of the board of management of the Aloys Wobben Trust, which controls Enercon.

Kettwig, 57, was born in Emden, northwest Germany, and has an MBA from the Emden University of Applied Sciences. In early 1988, he joined Enercon, where he was put in charge of all commercial matters. He is married, with three children.

Enercon's managing director explains to **Leigh Collins** why European onshore is the German OEM's natural market

**A lot of OEMs are scrambling to build 7MW+ turbines, but only for offshore, yet Enercon is building them only onshore. Why?** Ten to 15 years ago, we had the idea that we needed to create a turbine for the power utilities so that they understand wind is not just a playground, with 1-2MW turbines, that it can generate large-scale industrial power. So we started with a 6MW machine and then scaled it up to 7.5MW. But the basis of our company is the 2MW, 3MW machines. In one year, we produce 1,700 of these machines, and of the 7.5MW turbine, we produce 20, 23. So the basis of the whole company is the 2MW platform.

**Why do you have no plans to start selling them for offshore?** Oh,

it's a philosophy. We are not afraid of offshore. We are a family-driven company. So they decided that we go onshore with 150% [effort]. For ten to 12 years, we go to Brazil, we go to Turkey, to Canada, to many, many countries for big risk.

And then we decided, with our engineering [team], that if we now take the next step and go offshore, we would have to create a completely new team, with health and safety, with experts in marine science and so on. So we said no, we will concentrate on the onshore market because there's a lot of space and grid inside

countries, and at that time, we also decided to make higher towers, to 140 [metres], and then we go to the south area of Germany and France and so on. That for us is the philosophy. Offshore can make other companies big.

**But you could sell more big turbines offshore...** No, I don't think so.

**Other companies are selling them.** They are selling, but from the commercial viewpoint, okay, you have the turnover and so on, but you must have the storage space, you must have the stock, you have only a half-year to install the turbines [at an offshore project], and then you have infrastructure, then you have the transmission — or no transmission in Germany as it was; you know the story. And so that is, for our company, too much risk. So we say no. I think it's also better for us for the future because there is a lot of potential onshore — now the story starts in Germany and France and Portugal to repower some areas, also for Spain there's a big chance for repowering in the next two years.

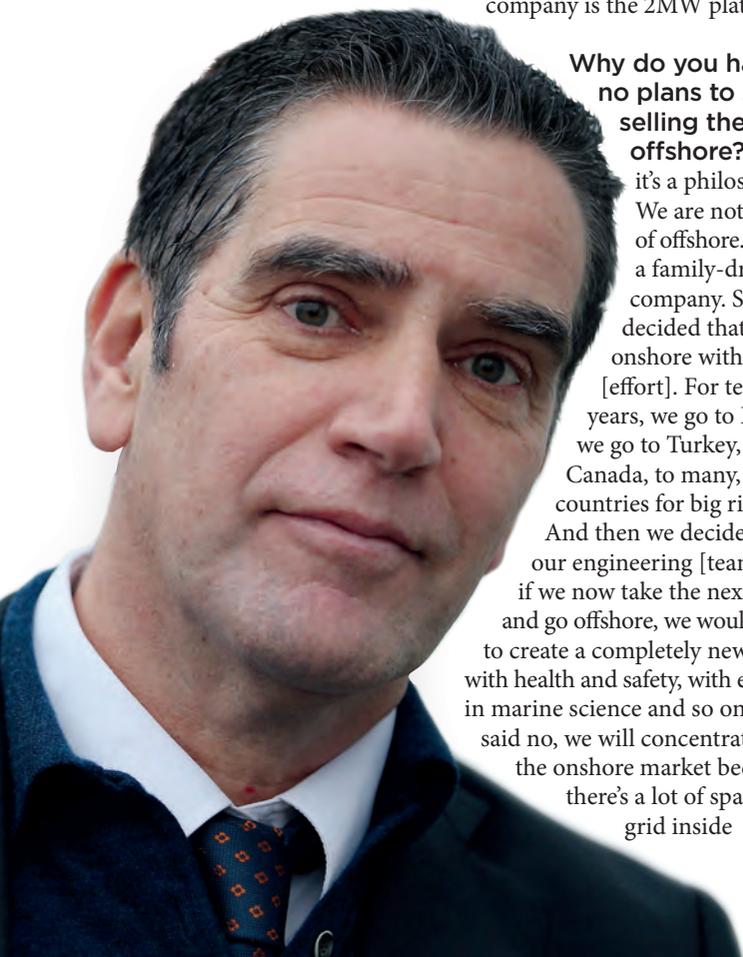
**Enercon's turbines are high-quality but a little more expensive than competitors' machines. If Germany is going towards a tendering system, is that going to be a big problem for you?** No. That is not the

reason we are fighting [the tender plans]. Germany has installed 40,000MW, mostly in the north. Most of these are 10MW [wind farms]. The growth of the German wind industry comes from the farmers, from the people [co-operatives], piece by piece. Now the dream from the government is to make a big tender to install 2,500MW, with slots like 600MW. The time has gone in Germany — you cannot install that size of wind farm, you'll find no places. Our thinking is if Germany installed

last year 4,500MW, this year 4,000MW, next year 4,000MW and then 3,500MW [in 2017], then the tender starts with 2,500MW... The government is dreaming about a cheaper per-kWh price; we think the price will increase. The space is not there... if you go to Brazil or to Egypt or wherever, you have big sites with big spaces with no people and you have two or three investors, like utilities. But in Germany the story is different: you have a lot of small private companies investing in green energy. So we've had discussions with the politicians, but if we cannot change their minds — I don't think we will, but we are fighting for that — then it will be okay for us. Then we go to Plan B. From a company perspective we do not have a problem with the tender. But we feel that the government is making a mistake. Do they think that it will be cheaper and cheaper? No, you have the kWh price, then you have a lot of regulatory costs on top — taxes, grid costs and so on, and that will not be cheaper from the tender.

**Why is the 90MW Zuidwester in the Netherlands, launched this month, important for you?**

It's important because it's one of our biggest projects worldwide onshore and it's special for this area. It's not only utility but it's also with the local farmers [who own the neighbouring 144MW sister project, Westermeerwind, which also uses Enercon's 7.5MW turbines]. We are installing the world's biggest [onshore] machine, at 7.5MW, so it is a special project for Enercon. Also, we make the roads, we make the foundations, we lay the cables, we do a lot of infrastructure work, and so our people are well involved in this whole project... We are two and a half hours from Aurich [Enercon's headquarters], and our concrete tower factory is in Emden [200km away]. We bring all the concrete segments by boat. It's all special and we've learned a lot. ☐



Photograph | Getty

# Where do we meet in 2017?

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## Photos of the day

1) Happy delegates at the CG beer reception;  
2) breakdancing at The Switch stand; 3) Marubeni's Tomofumi Fukuda, project director of the Fukushima Forward floating wind farm in Japan speaks, at the floating wind power debate hosted by *Recharge*;  
4) François Sterin, director of global infrastructure at Google, at the 'Wind energy turning blue chip companies green' session; 5) A badge exhorting delegates to vote for the venue of EWEA 2017

Photography | Jason Bickley/EWEA



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