WindEnergy Hamburg

DAY ONE

Incorporating WindEurope Summit 2016 27-29 September Hamburg

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Fears for renewables as grid nears gridlock

CHRISTOPHER HOPSON

Europe's power industry has warned that the EU's electricity grid is fast approaching crisis point, with increased congestion putting the ongoing build-out of renewables at risk.

New transmission lines are simply not being built fast enough to incorporate all the extra generation coming on line, so Europe must become smarter at how it manages its electricity, according to a new report by the continent's five leading electricity associations.

The *TSO-DSO Data Management Report* — by Entso-E, Eurelectric, CEDEC, EDSO and GEODE — says that as the grid becomes increasingly reliant on variable renewables and demand-side management, increased information exchange between transmission and distribution system operators (TSOs and DSOs) will become fundamentally important. Without this, the grid will one day be unable to absorb more wind and solar power. The study also calls for the European Commission to introduce legislation as part of the forthcoming energy market design to set out how system operators should co-ordinate and co-operate.

"The power grids are becoming increasingly strained across Europe for various reasons but there are general patterns discernible," Hans ten Berge, secretary-general of European power industry association Eurelectric tells *Recharge*.

"At the grid level, there remains long-standing public opposition to permitting new transmission lines and, over time, the strain on the system has been increasing, with a consequent rise in tariffs and other interventions to maintain stability."

Construction of an electricity pylon for a 380kV power line near Meckenheim, western Germany

Photograph | Ulrich Baumgarten/Getty

Fergal McNamara, Eurelectric's DSO manager, adds: "At the distribution level, there has been a widespread increase in local generation [from wind and solar]. All of this is transforming the role of the DSO and has given rise to new operational challenges and strains on the distribution network.

"Solutions can also be found in more flexibility: that is the demand

Continued on Page 2

Wind could supply 28% of EU power by 2030

BERND RADOWITZ

Wind is expected to meet 24-28% of the EU's electricity generation in 2030, up from 11% last year, WindEurope says in its new report *Making Transition Work*.

But the continent must avoid past policy mistakes and step up its ambitions again if it doesn't want to fall behind other big markets such as the US, China or other emerging nations that are increasingly attracting investment.

"Europe is not giving the leadership on clean energy it once did. Overall levels of ambition have fallen, certainly compared to other parts of the world," says WindEurope chief executive Giles Dickson, adding that with current policies in place, Europe won't remain number one in renewables.

"For Europe to reap the benefits of its first-mover advantage in wind energy and to contribute its fair share to climate change mitigation, it needs three things: adequate policies, innovative technology and an integrated energy system."

The report recommends that the EU raises its 2030 renewable energy target to at least 30% of gross final energy consumption, revise its Renewable Energy Directive and improve legislation on energy market design.

It also calls for technological innovation in turbines to reduce costs, improved management of very high shares of wind in the power system, and the electrification of the heating, cooling and transport sectors to increase green power demand.

After solid growth in the period up to 2013, a slowdown occurred in many European markets, and wind additions on the continent in 2014 and 2015 were highly concentrated in a handful of countries, particularly the UK and Germany, the report says.

Regulatory changes, some of them retroactive (such as in Spain, Romania or the Czech Republic), have unsettled investors, while the lack of an adequate climate and energy framework in most EU member states for the post-2020 period brings additional uncertainty.

Meanwhile, commitments from countries outside Europe have increased fast, with China targeting 200GW of wind by 2020, and India 60GW by 2022.

Tenders in Latin America and Africa have also provided strong incentives for European manufacturers and developers to look abroad, WindEurope says.

The report says that onshore wind costs could fall 26% by 2025, and 41% by 2040, the report states. Offshore wind could reach €80/MWh by 2025 in Europe, but further costs reduction could be possible with the right pipeline of projects after 2020. The offshore cost estimate is likely to be conservative, given recent tenders in the Netherlands and Denmark have already produced a lower price of electricity.

GILES DICKSON INTERVIEW: Page 19

Fundamental data changes needed to protect renewables build-out

From Front Page

or generation side adapting their behaviour to support the system.

"With more customer participation and more decentralised generation, flexibility providers connected to the distribution grid are significantly and continuously increasing. Therefore, the management and exchanges of information and data between TSOs, responsible for balancing supply and demand, and DSOs, responsible for the system's security of supply and quality of service, is fundamental to integrating the new forms of demand and supply."

The report also calls for TSOs to be able to access DSO customer data — directly or indirectly — if they become flexibility providers to the TSO. This will require fundamental changes in the way that data is managed, especially to meet data protection laws. The five electricity associations recommend the standardisation of data across the EU and that the "party or parties responsible for data management should be neutral to all market players."

Photograph | iStock

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Siemens to test new offshore tech

DARIUS SNIECKUS

Siemens will deliver a quartet of new-look offshore wind turbine units made up of 7MW machines mated to gravity jacket foundations, plus built-in high-voltage transformers, cables and switchgear systems, for the recently awarded 28MW Nissum Bredning Vind pilot off Denmark.

The technology being installed at the DKr300m (€40.2m) project in northwest Denmark is expected to show a "significant positive impact" on the levelised cost of energy (LCoE) of offshore wind, according to Siemens

The four Siemens SWT-7.0-154s will be grid-connected using a new 66kV cable and turbine concept that promises lower costs for cabling and reduced transmission losses.

The innovative foundations — a component that traditionally accounts for 20-30% of the capital cost of an offshore wind farm — will be a "major contributor" to the project's LCoE, says Michael Hannibal, chief executive of offshore wind at Siemens.

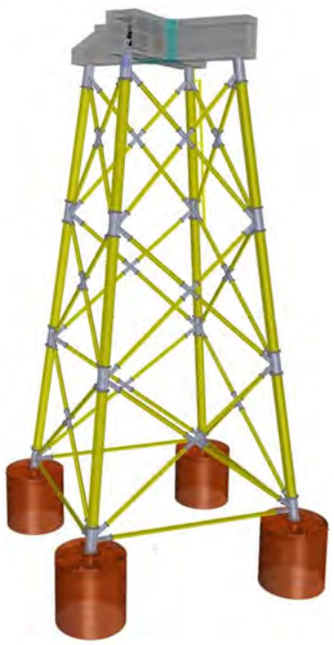

Image | Siemens

Early concept rendering of the next-generation jacket. The Nissum design will have concrete feet and shorter legs

The foundations — a hybridised four-leg steel jacket with concrete feet — are slated to be installed in six metres of water at the project by developers Nissum Bredning Vindmøllelaug and Jysk Energi by March next year, with the turbines to follow in June.

First power from the project, awarded with guaranteed feed-in tariff of DKr 0.7/kWh for the initial ten years and first 50,000 full load hours of operation, is scheduled for July.

The Danish Energy Agency said earlier this year that the technology under test at the site could lead to a reduction of up to 12.5% in capital and operating costs for future offshore wind farms.

MHI Vestas lined up for Icebreaker

KARL-ERIK STROMSTA

MHI Vestas has been named "preferred supplier" for what may be the US's second offshore wind farm, despite Siemens having worked closely with the developer, LEEDCo, for many years.

The decision was made after a careful evaluation of the possible energy production at the 20.7MW Icebreaker project site in Lake Erie, off Cleveland, Ohio, says LEEDCo president Lorry Wagner.

"It came down to [MHI Vestas] being the best performer for our site," he tells *Recharge*.

LEEDCo is in the latter stages of talks to sell the freshwater project to Norway's Fred Olsen Renewables. "We're dotting the i's and crossing the t's of closing that deal," Wagner says. "It's still going to happen."

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Vestas wins first chunk of record 2GW deal

ANDREW LEE

Vestas has confirmed the first firm order to supply the 2GW Wind XI project in the US state of Iowa — officially kicking off the largest single deal in the onshore wind industry's history.

Vestas says it has booked a firm and unconditional order from MidAmerican Energy for 214MW of components for Wind XI under the criteria of the US Production Tax Credit (PTC).

The Danish wind group first announced a conditional deal to supply up to 1,000 V110 turbines to the massive onshore project in June, in what was a huge coup for the company given the previous front-runner status of rival Siemens. The German company had been seen as prime contender to supply the development, given its previous deals with MidAmerican, part of the business empire of billionaire investor Warren Buffett.

One of the largest Vestas-supplied wind farms, the 420MW Macarthur wind farm in southeast Australia

Photograph | Vestas

But Vestas, which is enjoying a golden period in the US wind market, will supply Wind XI from its cluster of plants in Colorado.

MidAmerican secured regulatory approval for Wind XI at the end of August after it requested an expedited approval from regulators so it could capture the full value of the wind PTC. By "safe harbouring" components, the utility can capture the full value of the PTC under the terms of the incentive laid down by the US authorities.

Vestas US & Canada sales and service president Chris Brown said: "With this order, MidAmerican positions itself to secure the full value of the PTC for the Wind XI project, and takes the next step in delivering low-cost, domestic wind energy to its customers.

Wind XI will be built across multiple as-yet-unnamed sites in Iowa, with the first sites to be placed into service in 2017 and the last by 2019.

Vestas said it expects to announce further orders as partial deliveries to the project are made firm and unconditional.

The conditional Wind XI deal included a five-year service agreement with the potential to extend to ten.


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Prysmian to lay world's longest subsea cable

DARIUS SNIECKUS

Manufacture of the sprawling 723km North Sea Link (NSL) transmission line that will connect Norway to Britain for the first time is about to get under way at cable giant Prysmian's factory near Naples, Italy.

The 1.4GW high-voltage direct-current (HVDC) interconnector, being delivered for a joint venture between the UK National Grid and Norwegian transmission system operator Statnett SF, will be the longest subsea line ever laid and a key artery in the construction of a future European supergrid.

"This project's moving ahead is a clear signal that similar offshore projects in Europe have robust business cases and more credibility now and that we are progressing towards an interconnected single market," Raul Gil, chief operating officer of Prysmian Powerlink, tells *Recharge*.

"This is one of the largest, most challenging projects we have ever undertaken. The technology is already proven but the laying of such a long transmission line will be a first. We are confident of completing the NSL without major difficulties."

The first length of the NSL line is in the "initial stage of manufacturing" at Prysmian's Arco Felice factory, adds Gil.

Prysmian, which laid the HVDC Skagerrak link between Norway and Denmark and the HVDC Montenegro-Italy interconnector, will lay the NSL cable in eight trips using its *Giulio Verne* vessel.

Commissioning of the NSL, which will connect converter stations in Kvilldal, Norway, with and Blyth, northeast England, with twin-armoured 525kV single-core cables, is scheduled to be complete by September 2021.

The NSL, first discussed in the early 2000s, will play a central role in Europe's electricity network "reinforcement strategy", which aims to cut energy prices and provide clean energy, while replacing ageing UK power plants.

Prysmian's *Giulio Verne* cable-laying vessel

Photograph | Prysmian

Turbine monitoring just got smarter and simpler

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At hundreds of windfarms worldwide, SKF WindCon is enabling operators to predict the need for turbine maintenance to reduce downtime and better manage their resources. With newly updated SKF @ptitude Observer software, they can also benefit from an expanded range of diagnostic and communication possibilities, making turbine service even more efficient.

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- Trigger acquisition on up to 5 parameters
- Graphical display improvement based on wind turbine load classes
- Time synchronisation with any external server
- Interfacing with other systems based on IEC 61400-25

Dong: UK on pole despite offshore slowdown

DARIUS SNIECKUS

Britain is going to reap the profits of early tendering strategies for its offshore wind development, despite its 2020 build-out targets having slipped by almost half to 10GW in the past five years, says Samuel Leupold, chief executive of Danish developer Dong Energy's offshore wind division.

The UK feed-in tariff system, which led on to the 2013 Contracts for Difference (CfD) scheme, will have a long-term benefit in that it provided "an additional dimension" of competition among potential project sites that will help reduce future costs.

"It is my feeling that there are a lot of developers working on Round 2.5 and 3 projects that are warming up and keenly looking at the next couple of rounds of CfD," says Leupold. "I think the UK will now start to harvest the benefits from being an early mover — factories are being built [by Siemens and MHI Vestas] that can deliver volume to the coming projects and this in turn will have benefits to the UK consumer.

"Now with the next group of projects — our Hornsea projects but also East Anglia zone projects and others — this gives scale to the UK as a market and keeps the industry thinking about how it could bring costs down further."

Dong recently announced it would build a major operations base in Grimsby, east England that would "transform the way wind farms are supported", starting with its 580MW Race Bank project, and then its 1.2GW Hornsea 1 and 1.8GW Hornsea 2 mega-developments from 2020.

Samuel Leupold, chief executive of Dong Energy's offshore wind division

Photograph | Dong Energy

The UK's strategy has differed from that of countries such as the Netherlands and Denmark, in which the government selects the site to be tendered and shoulders the cost of export infrastructure and grid connection. This recently resulted in Dong winning the tender for the 700MW Borssele 1 and 2 projects with a bid of €72.70 per MWh — the first time an offshore wind farm will be built for under €100/MWh.

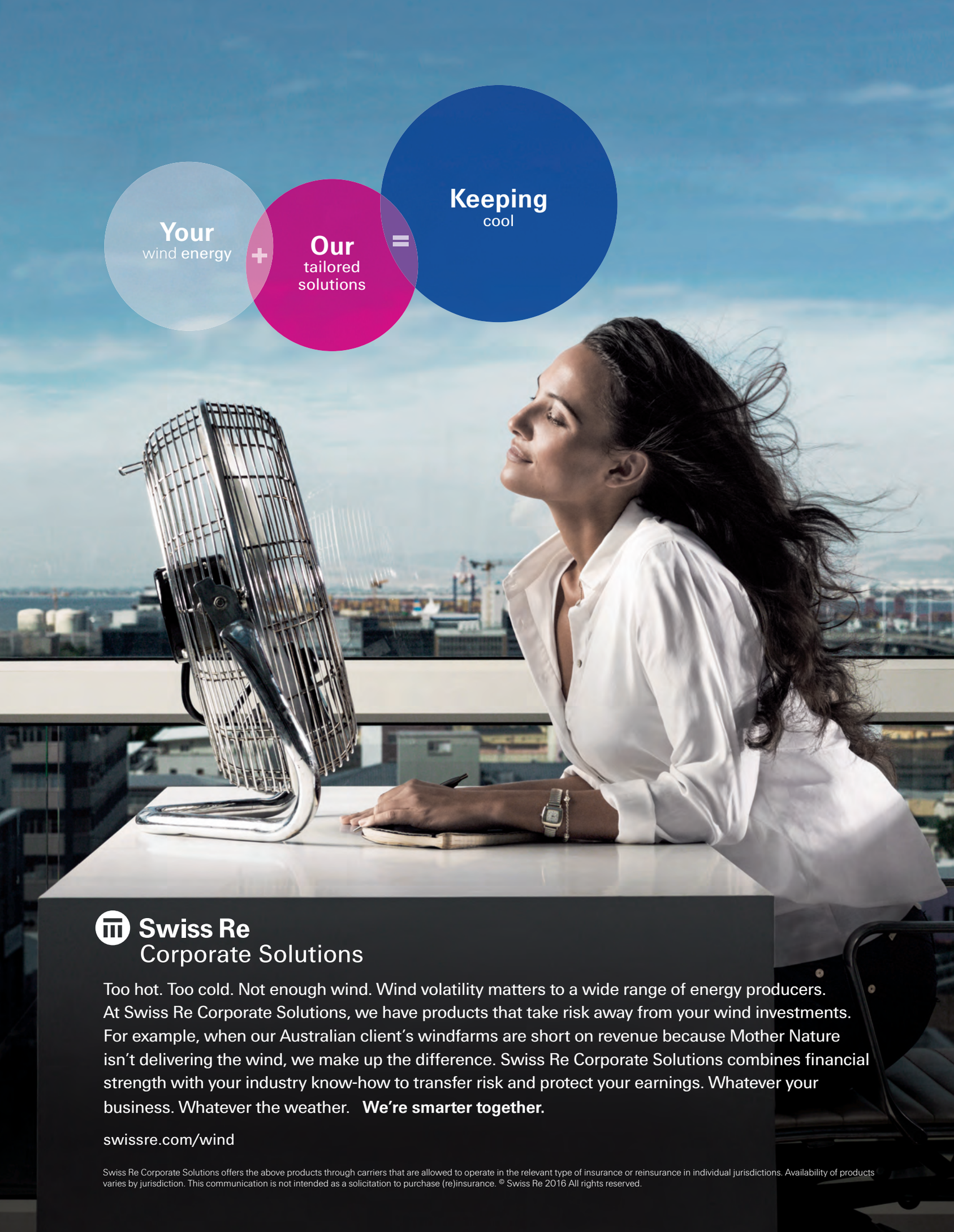
Though Leupold believes the "social cost" of the UK and Dutch models to have "an equivalency", he concedes that "if the government picks the site there is naturally some question as to whether you lose out the site-versus-site competition [that the UK has through its tendering model] which means only the best sites will be competitive".

"With Borssele 1 & 2 there were good reasons why our bid price could be so aggressive," he adds. "By combining the two you got scale — [there were] significant synergies there in structuring the two as one project — and in fact there could be more still if we can combine them with [the not yet tendered] Borssele 3 & 4, which would make almost 1.5GW.

"The Dutch authorities should be commended here too because they have worked the timing of the grid connections in such a way that all four projects can be developed to benefit from these scale advantages."

Dong was a signatory of a joint declaration by 11 developers in June to drive the average levelised cost of energy (LCoE) for offshore wind under €80/MWh by 2025, but he feels this target though "meaningful, is not the end — far from it".

"This LCoE cannot be [the lowest reached] and I think Borssele shows where we are currently as an industry — and indeed reflects what is in developers' "desk drawers" and in the R&D labs. We will go beyond [to a still lower LCoE] and we have to if offshore wind is to become mainstream."



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Photograph | M

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Today: Opening Night

A very special evening is our WindEnergy Hamburg "Opening Night", which will be held in cooperation with WindEurope directly after the close of the expo. The ideal setting for discussions and networking in a relaxed and pleasant atmosphere. There will be short speeches, plenty of music, and drinks and a buffet meal in the historic setting of the Fischauktionshalle Hamburg. Tickets are available for 80€ at all cash desks. Starting at 6 pm., our hydrogen-powered shuttle buses (H2 buses) will take you from the Central Entrance of the fair site direct to the Fischauktionshalle.
Start: 6.30 pm. at Fischauktionshalle

Storage Tour for power storage solutions

Smart storage capabilities are essential for integration of the growing proportion of wind energy in power supply. WindEnergy Hamburg will present a range of storage solutions and systems for grid integration, spread over the nine exhibition halls.

A condensed overview is also given in the Storage Tour, with participation of about 90 exhibitors. Visitors who are specially interested in this subject at the expo can find these companies easily — either online in the exhibitor directory at windenergyhamburg.com, or in the app, or in the Visitor Guide.

Tue 27 September

SPEAKERS' CORNER

GROUND FLOOR BETWEEN HALLS B1 AND B2

10.00 – 10.10
Latest main control technology for wind turbines combines openness and long term availability
Steffen Itzigehl, Sales Manager, Siemens Digital Factory

10.15 – 10.25
Die Zukunft der effizienten Parkregelung und Energiemanagement
Alexander Pfeiffer, Forschung und Entwicklung, Automation; Daniel Schauer, Geschäftsführer, ee Technik GmbH

10.30 – 10.40
SOV Project Operations - From tender process to marine operations
Sebastian Zehmke-Marahrens, Techn. Consultant / BSc. Maritime Economics and Port Management, DOC Deutsche Offshore Consult

10.45 – 10.55
Power Quality und Verrechnungsmessungen gem. der IEC 61400-21 mit Breitbandwandlern – Hier wird richtig abgerechnet!
Roland Bürger, Produktmanager Elektronik/Senorik, Ritz-International

11.00 – 11.10
A lift concept for wind turbines
Thomas Wesselmann, General Manager CSO, Highstep System

11.15 – 11.25
Blattinspektion – innen und außen
Malte Greve und Kai Jäger, REETEC

11.30 – 11.40
Marine Warranty - Distress Purchase or added value?
Dr. R.V. Ahilan, Group Director Renewables Advisory + Energy Technology, LOC Renewable

11.45 – 11.55
Lohnt sich eine investion in die deutsche onshore-windenergie-branche heute noch?
Elin Lüdemann, Senior Manager Energie/ Domenico Blyth, CVM, Project Manager, RSM Deutschland GmbH

12.00 – 12.10
Introducing VisualEyesTM - our new weather monitoring and alerting system
Ruth Hammond, Marketing Manager, Met Office

12.15 – 12.25
SFC Energy Group – Reducing costs for off-grid applications through EFOY Pro fuel cells
Andrea Alboni, Vice President Sales Consumer & Industry, SFC Energy AG

12.30 – 12.40
Improved testing of rotor blades - faster and closer to operational loads
Dietmar Sanberger, IABG mbH

12.45 – 12.55
Predictive Maintenance through Artificial Neural Networks in Breeze
Jonas Corné, CEO, Breeze (Greenbyte AB)

13.00 – 13.10
The next Blade Frontier
Roel Schuring, Vice President Engineering, LM Wind Power

13.15 – 13.25
T-Solid 4IPC - a breakthrough 3-row roller blade bearing for low wind site and offshore turbines
Dr. Henrik Albertsen, Head of Application Engineering, IMO GmbH & Co. KG

13.30 – 13.40
How does talent make a difference in the wind business?
Lamin Faye, Vice President of HR & HSE, Vattenfall Europe Windkraft GmbH

13.45 - 13.55
"Wind-to-Hydrogen": the potential of wind energy in the gas and mobility sectors
Denis Thomas, Renewable Hydrogen, EU Regulatory Affairs & Business Development Manager, HYDROGENICS

14.00 – 14.10
EMS - Dehnungsmessung 4.0
Alper Sevinc, Application Engineer, Leine Linde Systems GmbH

14.15 – 14.25
How to make a difference with partnering in Offshore Wind
Martin Simmelsgaard, Vice President Strategic Projects, Vattenfall Europe Windkraft GmbH

14.30 – 14.40
Case Study - Technology Transfer
Andreas Thieme, Director Business Development & Sales, AMSC Austria GmbH

14.45 – 14.55
Investing in the wind power sector in Izmir
Hakki Gökhan Elüstün, Izmir Development Agency

15.00 – 15.10
Latest successes with permanent magnet technology
Jukka-Pekka Mäkinen, President and CEO, The Switch

15.15 – 15.25
Optimising Blade Asset Management & Analysis
Michael McQueenie, Business Development Manager, Cyberhawk Innovations

15.30 – 15.40
Industrie 4.0: Digitalization in wind turbines
Bernd Zippel, Senior Consultant, Siemens Digital Factory

15.45 – 15.55
Blade service: An introduction into Siemens' blades service program including PowerEdge for leading edge maintenance
Keith Stevenson, Commercial Head of Product Lifecycle Management, Siemens Wind Power

16.00 – 16.10
Time and cost savings by model based controller design
Prof. Günter Heckel, Technical Coordinator MDB Wind, Siemens Digital Factory / Guest Prof. at Shenyang University of Technology

16.15 – 16.25
E.ON Energy Solutions – Services with an Owner's Eye
Katja Bartsch-Wünschel, Director Onshore Europe, E.ON SE

16.30 – 16.40
Airborne Wind Energy - co-operation network and developments
M. Sc. Stefan Wilhelm, Head of Network Management HWN500, VIP Innovation GmbH

16.45 – 16.55
Climate change: The significance of Hindcast Length for Energy Yield Assessment
Peter Holst, Offshore Meteologist, ConWx

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HIGHLIGHTS OF THE DAY — Tuesday 27 September

Klaus Töpfer

He has headed the United Nation Environment Programme (UNEP) for almost a decade. Under his leadership, UNEP started reporting wind resources and domestic developments, which facilitated large-scale investments.

Join the session 'Business meets Policy: wind outside Europe - how far can it go?'
14:30 – 16:00, Room: Hall 1

Jeremy Leggett

Chairman of Solarcentury and one of the world's leading chronicler of the energy transition, has seen disruptions in the making with the global solar boom. Mastering the technological challenges might be as important as triumphing in the political arena to win – what he calls in his bestseller – "the carbon war".

Join the session 'Business meets Policy: disruption on its way?'
17:00 – 18:30, Room: Hall 1

Jeremy Rifkin

He advises the European Union and triggered historic shifts in the world's biggest economies. He wrote the blueprint for the German 'Energiewende' and inspired China to embrace a third industrial revolution in its latest five-year-plan.

"European industry has the scientific, technological, and financial know-how to spearhead the shift to renewable energies."

Find out more during the session 'Business meets Policy: disruption on its way?'
17:00 – 18:30, Room: Hall 1

Win an iPad Mini 4

Visit the WindEurope stand in the east entrance of the expo hall to go in the draw to win one of two iPad Minis!

The two lucky winners will be announced during the **WindEurope Stand Party on Wednesday 28 September.**

Gala Dinner with Fatih Birol

Thursday 29 September 2016, 19:30. Mehr! Theater, Banksstraße 28, 20097 Hamburg.

Join wind energy professionals for an evening of high-level networking, delicious food and a keynote speech from **Dr Fatih Birol**, Executive Director of the International Energy Agency. *Purchase your ticket at the CCH (or HMC) registration areas.*

Enercon 'to install 150 EP4 units in 2017'

BERND RADOWITZ

German wind turbine maker Enercon is powering on with its 4MW platform, and after producing about ten of its new EP4 machines in pre-series this year, expects to enter mass production in 2017.

"We are likely to erect more than 150 EP4 machines in 2017," Enercon spokesman Felix Rehwald tells *Recharge*.

Enercon plans to install a prototype of the largest version of its 4MW turbine, the E-141 EP4, this year in Germany. After that, a comprehensive testing programme will follow.

A commercial success of the EP4 platform is vital if Enercon is to break through what managing director Hans-Dieter Kettwig earlier this year called the "magic threshold" of 4GW in annual installations that the company wants to exceed from 2016 onwards. Last year, global installations of Enercon machines fell to 3.12GW in 2015, down from 3.94GW a year earlier.

Enercon's 4MW EP4 turbine

Photograph | Enercon

Enercon is still the leader in Germany (with a 37% onshore market share in 2015), but in has lost market share to competitors such as Nordex and GE.

The target market for the EP4 platform is Europe initially, with attention also being paid to existing export markets and new markets.

Enercon is cautious as to whether there would be a future mass market for 5MW or 6MW onshore turbines. "For turbines of all capacity classes, the levelised cost of electricity is decisive," says Rehwald.

"From a certain capacity you hit the limits in logistics and installation capability. What the market demands today are machines optimised for installations, transport and logistics."

The McLeans Mountain wind farm in Ontario, Canada

Markus Tacke is chief executive of Siemens Wind Power and renewables division

Want to travel? Get a career in wind

MARKUS TACKE

Siemens' wind turbines are positively viewed by the public as an essentially German product. This view, however, falls well short of the reality with regard to production sites as well as installation locations. Our turbines are in operation in UK offshore wind farms as well as in the mountains above Australia's capital city, Canberra. They are installed in the North American wind belt, and they supply climate friendly electricity to first-nation peoples in the Canadian province of Ontario. However, the impact of our wind turbines actually goes much further than that: they also contribute significantly to the employment market in those countries.

Wind turbine nacelles are manufactured by Siemens in Denmark and in the US, and will soon also be made in Cuxhaven, Germany. The turbine blades come from our factories in Denmark, the USA, Canada, China, and soon also the UK. It is a characteristic trait of major wind power markets that not only the product itself but also production becomes an export commodity. A commitment to sustainable energy supply understandably goes hand-in-hand with a political desire to create value in the regions concerned. Even smaller markets without production facilities enjoy significant benefits. A 2012 study found that around 21,000 new jobs are created in the wind energy sector for every billion euros of investment. For employees of international companies, the international success of wind power is an opportunity and challenge at the same time: the extensive know-how currently being acquired by individual employees at their home locations today may be required at new sites tomorrow. This trend is only just starting to emerge, given that we are still a relatively young industry.

Intercultural skills and foreign languages required

Of Siemens' Wind Power division's current workforce of 13,700 employees, only around 1,000 are based in Germany. The number of colleagues handling our operations in the Americas market for example, is significantly higher at around 1,900, and we have more than 300 employees in Canada alone. This presence helps to ensure close relationships with customers in many countries around the world, including the UK, where we now have nearly 1,800 employees. The company's sites will also evolve in the future to keep pace with dynamic market conditions. Commercial specialists with technical experience and good intercultural skills are not the only employees needed to meet this demand. Engineers capable of working in international teams, who can speak English and other languages, are particularly sought after.

Technical career opportunities around the world

The wind power sector also offers good opportunities for career changers, particularly in the field of service and maintenance. Remote diagnostics and big data analysis, for example, require both mechanical and technical know-how. Technicians working on-site have often been trained in metalworking trades or electronics. With over 17,500 wind turbines in service in around 40 countries worldwide, there is always work to be done. Almost all Siemens projects are handled by teams working across national borders. This contributes to the special appeal of working in the wind power sector.

The wind power industry in general offers a wealth of opportunities for employees to switch locations in order to gain a change in perspective. More than 2,000 colleagues within Siemens are currently on delegation in other countries. Engineering expertise and other skills can thus quite literally be counted among Germany's exports.

Photograph | John Hryniuk

Nordex and Acciona plan joint platforms

BERND RADOWITZ

Germany's Nordex plans to merge its technologies with those of its new partner Acciona Windpower (AWP) to create joint turbine platforms over the medium term, to serve mature and developing wind markets, says Pablo Pulpeiro, chief executive of the Nordex group in Brazil.

"Those new turbines will have two approaches," Pulpeiro tells *Recharge*. "One for emerging markets, where Acciona has a significant presence. And one for northern, more sophisticated markets, where cold weather is really important and noise [reduction] is important."

This year, Nordex completed its takeover of Spain's AWP, which has been very successful in emerging economies such as Brazil. Nordex has catered more towards Northern European markets that sometimes have extreme climate conditions.

Nordex production facilities

Photograph | Nordex

"Our engineering teams are working together now and they are trying to get the best of the two platforms for the other as well," Pulpeiro says. "So we get better turbines for both platforms, taking the good things from Nordex turbines and trying to adapt those into the AWP turbine and the other way around."

The AWP factory in Brazil could handle the production of Nordex nacelles as well, Pulpeiro says, but given the downturn in the country's wind market, the company will for the time being only sell AWP models in Latin America's largest economy.

"If the market returns, we will think about the possibility to bring Nordex turbines [to Brazil]. But you would have to make large investments just for one market, which is Brazil. It's not an easy decision," Pulpeiro explains.

His comment reflects the views of industry experts who have told *Recharge* that Nordex will probably use the AWP brand for sales in emerging markets such as Brazil, Mexico and India, while marketing Nordex as a premium brand for more developed markets.

Rival Siemens is thought to be planning a similar strategy, using Gamesa turbines in emerging markets, once its merger with the Spanish OEM has been cleared by competition authorities.

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European wind 'at risk of losing leading role'

ANDREW LEE

Europe must get its act together or see its hard-won status as a global leader in renewables disappear for good, WindEurope chief executive Giles Dickson tells Recharge.

A lack of policy clarity beyond 2020, a "dysfunctional electricity market that's not fit for purpose" and chronic overcapacity of polluting fossil-fuel plants are just some of the obstacles hindering the growth of renewables, Dickson says. And there are potentially serious consequences for the European wind industry's ability to compete on driving down the cost of energy.

> If Europe's market becomes significantly smaller than China's, they will be able to make faster progress than us down the cost curve

"If our domestic market in Europe becomes significantly smaller than China's, they will be able to make faster progress than us down the cost curve and our competitive position will erode. That worries us," he says.

"China is number one in capacity and new installations. India is number one in ambition and targets. In terms of costs, the cheapest projects have come in Morocco and Latin America." He also notes the "five years of clarity" enjoyed by wind due to the production tax credit extension in the US.

Europe's wind technology is "still the best in the world" he believes, but even here there is all to play for in the next generation of technologies. "Let's look at floating wind. The Japanese are at least as advanced as we are — we need to keep up the pace," he says.

So what is to be done? Dickson wants European states to get their post-2020 renewables policies and targets on the table — only seven have done so far.

He would also like to see better management of the transition from feed-in tariffs, green certificates and the like to more competitive, market-based schemes.

While some processes have so far been shining successes — the Dutch offshore tender system, for example — Dickson identifies others that have "made a mess" of the exercise, including Spain and Poland.

"The direction of travel makes economic sense, but it has to be got right," says Dickson. "You can't bring in an auction scheme that has no pre-qualification like the Spanish did. It's crazy." Unrealistic, underprepared bids that never see the light of day are dangerous, he adds.

WindEurope wants the European Commission to help sort out the problems in the European power market via its new market design proposals.

WindEurope chief executive Giles Dickson

Photograph | Jason Bickley/WindEurope

"The Commission's got to get it right in the next few months," says Dickson, who takes some heart from support in the European Parliament for the industry's call for a 30% renewable share target for 2030 — an increase from the existing 27% goal.

No wonder WindEurope, with the help of Europe's wind power big guns, is spending so much effort getting the message across to Brussels and EU member states.

And with speakers at the WindEurope Summit including EU vice president for energy union Maroš Šefčovic and German energy and economy minister Sigmar Gabriel, Hamburg this week will be a big chance to make the case again.

Funds secured for 158MW Senegal project

KARL-ERIK STROMSTA

Lekela Power, the African renewables platform backed by Ireland's Mainstream Renewable Power and private-equity investor Actis, scored $250m in financing from the US Overseas Private Investment Corporation for the development, construction and operation of a 158MW wind farm in Senegal.

Parc Eolien Taiba N'Diaye, near the western African nation's coast, is expected to enter construction this year, and will boost Senegal's power capacity by 24%.

Lekela fuses Mainstream's development chops in emerging markets with London-based Actis' deep pockets, and has a 1.3GW pipeline of projects in development and construction in Egypt, Ghana, South Africa and Senegal. R

Winergy unloads world's largest turbine gearbox

The gearbox being unloaded last week

Photograph | WindEnergy Hamburg

A specially designed "exhibition model" of the world's largest-ever turbine gearbox, an 8MW Winergy unit, has been put on display at WindEnergy Hamburg.

The 46.7-tonne version of the 86-tonne machine at the heart of Adwen's AD8-180 offshore turbine, has been modified to give a view "inside the gearbox and its bearings", according to the Siemens-owned manufacturer. R

Iberdrola chief executive Igancio Sánchez Galán speaking at the Fene shipyard in front of Navantia's foundations for WIkinger

Lessons from Wikinger will help Iberdrola cut East Anglia costs

CHRISTOPHER HOPSON

Iberdrola is learning valuable lessons from developing its €1.4bn ($1.54bn) Wikinger offshore wind farm in the German Baltic Sea, which it claims will help drive down costs on the 714MW East Anglia development, its next mega-project off Eastern England.

For the Spanish energy giant, the 350MW Wikinger is providing invaluable engineering experience as the first project it is building without a joint venture partner.

> The jackets have been engineered in a way to get economies of scale

"As a wind farm that we are fully funding on our own [Wikinger] is probably one of the largest single projects in the renewables sector," says Iberdrola offshore managing director Jonathan Cole.

"On Wikinger the way in which the jackets have been engineered has been one of the largest jacket design, fabrication and installation jobs in the market — done in a way to try to get economies of scale.

"On East Anglia 1 we are going to be using Siemens 7MW turbines with a 164-metre rotor, and have managed to get down to a three-legged jacket structure, which is even lighter and cheaper. And we are doing other innovative things we have learnt from Wikinger and applying them to East Anglia 1, and evolving the technology as we go."

Cole says Dong Energy's record winning low bid of €72.70 per MWh for Borssele 1 and 2 in the recent Dutch offshore wind tender "shouldn't be surprising as the whole history of offshore wind has been about delivering cost reduction much earlier than predicted".

He adds that it is entirely possible the UK's next contract-for-difference auction round may also produce some "very interesting results" with even lower strike prices than previously recorded.

"It is thanks to industrial-scale projects such as East Anglia 1, which are stimulating a lot of economic and industrial benefits for the UK. Because the UK is going to be the biggest offshore wind sector in the world, we will benefit from cost reduction in the future more than any other country."

Iberdrola has taken delivery of the 29 jacket-type foundations for Wikinger from Spanish naval contractor Navantia's Fene yard in northern Spain.

The conventional four-legged jackets each weigh around 630 tonnes. "One of the most impressive things Navantia has achieved is that it has been able to produce one jacket per week in serial production, a rate nobody has managed before," says Joe Berrisford, Iberdrola's fabrication manager at the Fene yard.

The Wikinger wind farm, 30km off the German island of Rugen in the Baltic Sea, will use 70 Adwen 5MW turbines, and is scheduled to come on line at the end of 2017.

Photograph | Iberdrola

EGP boss: 'Europe needs more policy ambition'

Darius Snieckus asks Enel Green Power chief executive Francesco Venturini about the company's plans in Europe and future hybrid projects

Photography | Enel Green Power

Enel Green Power's (EGP) wind investments have of late largely been made outside Europe. How do you see the European wind power sector evolving in the near-term? Wind still has some untapped potential in Europe and more generally in mature markets. The old wind installed capacity is approaching the end of its economic lifespan and this presents an opportunity to refurbish it or replace it with more advanced and efficient technology at a cheaper price compared to a brand new wind farm. I would like to see a strong push in this direction also from the European Union in the coming directives and regulations.

Wind is doing better than the other renewables technologies, but if we look at the past year we can see that annual capacity additions growth percentages are far from double digits. Furthermore, competition among the other renewables technologies, solar in particular, is increasing and this could be a game changer in in the energy market.

What are the main policy drivers that you see supporting healthy ongoing growth for wind power in Europe? If the EU wants to maintain its global leadership in renewables this would require more policy ambition beyond 2020 and a review of the market design, implementing long-term price signals such as power purchase agreements (PPAs), which have been widely adopted all over the world. I think the European Commission should reconsider the rationale of how the power markets function and I hope that the Energy Union will deliver the right reforms in this respect.

> Unfortunately, the EU is no longer number one in renewables

The EU has fallen behind in policy ambition and investment. Most of the operators and manufacturers' business is now outside the EU and unfortunately, the EU is no longer number one in renewables. As an international manager, this is a natural consequence of where we see the most of the growth potential around the world so it does not make such a difference, but as an European citizen I can tell you that it is quite frustrating.

My personal opinion is that the current structure and functioning of the wholesale market is not

Enel Green Power's 80MW wind/10MW solar Fontes hybrid project in Pernambuco state, Brazil

able to deliver a secure basis for remunerating renewables investments. We have reached a point where operators are dealing with low and sometimes even negative prices, and at best this will just increase their reluctance to develop new projects, or refurbish old renewables plants that are approaching the end of their economic lifespan.

Sustaining new investments just through the short-term energy markets is extremely risky and costly and that is why it is not happening here.

EGP continues to pioneer a hybrid RE model — including the Fontes wind-solar project in Brazil. Should there be greater focus on this sort of model in Europe? Including a greater emphasis on storage technology? We have already launched hybrid plants in Europe. In Italy we brought on line the world's first biomass plant used to heat geothermal steam at the Cornia 2 geothermal power plant in Tuscany. The project will increase both the energy efficiency and the power output of the geothermal cycle.

Again, we are dedicating a lot of effort to storage. This technology should be the next breakthrough once it becomes competitive in some markets. Therefore, we decided to develop some projects and after a preparatory phase, we started testing storage through a few initiatives both in Italy and elsewhere at utility and retail scale. In Italy, we have launched two pilot projects, one in wind and another in solar. The tests being carried out at Potenza Pietragalla involves a 18MW wind plant equipped with a 2MW battery, while in Catania we have integrated a 1MW storage facility into a 10MW solar plant. In both cases, we are assessing the operating behaviour of the integrated systems with a view to modulating production and reducing production deviations. We are also working in other countries to test battery storage in different market/regulatory environments in order to increase our expertise.

Hybrid renewable plants will play an important role in the future of the energy sector. Only companies able to cope with their complexity and extract value out of them will succeed. The future is increasingly in aggregating and orchestrating assets than just developing, building and operating them.

Francesco Venturini

Outside of Europe, on top of the wind-solar hybrid we have installed in Brazil, we would also like to raise your attention to the Stillwater hybrid in the USA, which was one of our very first experiments. By adding a PV solar plant to an existing geothermal binary power facility and by subsequently enhancing that hybrid system with the further addition of solar thermal, Stillwater is the first plant in the world to incorporate all three renewable energy technologies at the same site on an industrial scale.

BlackRock seeks €940m of Innogy shares at IPO

BERND RADOWITZ

US investment firm BlackRock has placed a €940m binding order for shares under the planned initial public offering (IPO) of Innogy, the renewables and grids unit of Germany's RWE, which was valued at €17.8-20bn ahead of the listing.

BlackRock will purchase Innogy shares via a private placement, with the final number of shares allotted to the investment firm depending on the issue price set under the IPO, Innogy said.

Blackrock has already invested in some 2GW of renewable generation capacity in North America and Europe.

Innogy shares are expected to be offered at €32-36 per share, with about 20% of the unit being placed on the stock market. Depending on the final offer price, Innogy could receive gross proceeds from the IPO of €1.8bn-2.0bn and RWE could receive €1.5bn-1.6bn. Proceeds from the capital increase will solely go to Innogy and are earmarked for investments in its core business area.

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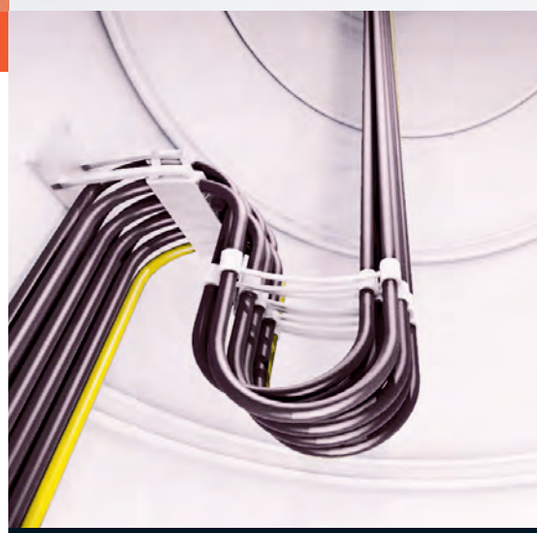

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