

EWEA 2013

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DAY THREE

EU interconnection? Not so fast

KARL-ERIK STROMSTA
VIENNA

The EU should pump the brakes in its drive towards more liberalised, interconnected power markets, insists the chief executive of Polish utility ENEA — a view that will not sit well with many in the renewables industry.

Before the EU ends up with “one central [electricity] dispatch in Brussels”, says Artur Różycki, governments must have a more nuanced conversation with their electorates about the potential costs of more interconnection and innovations such as smart meters.

“Otherwise,” he warns, “we might come to the conclusion in ten years that this was maybe not

Continued: Page 2

RECHARGE
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DON'T GET ME STARTED: Artur Różycki takes part in a roundtable discussion at yesterday's Boom and Bust High-Level Panel

Photograph | Alexandra Buxbaum/EWEA

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GE favours an organic alternative to consolidation

BEN BACKWELL
VIENNA

GE is happy to rely on organic growth amid consolidation in the wind turbine sector, its vice-president for renewables tells *Recharge*.

"When you think of consolidation, you think of a buyer and a seller," Vic Abate says, "But I ask myself: 'What can't I do organically?'"

Abate points to GE Renewable Energy's ability to leverage the wider resources of the US industrial giant, such as its power business, its aircraft engine business and its global research centres, to develop new technological solutions.

He questions the logic of buying more turbine assembly capacity in the current market, which he described as one of

"rampant capacity", and warns of a danger that acquisitions could mean buying out-of-date industrial technology.

Commenting on the state of the turbine market, Abate said fears over the financial viability of some suppliers are becoming of increasing concern to customers.

"We are talking about 20-year infrastructure assets, and customers are asking: 'Is this company still going to be around when [at the moment] the turbine is only part of the way through its life?'"

On the competitive threat posed by Asian turbine makers, GE officials say they do not expect these to have a major impact outside of China until the second half of the decade.

Chinese companies still face major challenges in terms of competing with Western suppliers



GIANT BACKING: Vic Abate at the launch of the *Recharge* Thought Leaders Club at EWEA 2013 yesterday

in more complex areas of turbine technology such as pitch control, and in achieving competitive levels of availability and durability.

"It's one thing to close a deal, but it's another thing to deliver 20,000 units at 98% availability, with safety and with customers satisfied over the lifetime of the turbine," says Abate.

GE is involved in several initiatives to lower costs and reduce the intermittency of wind power, including its "industrial internet" project — a wind turbine including battery storage that allows operators to exactly predict output 15 minutes into the future — and a fabric-based rotor blade. ☐

Rethinking interconnection

From front page

a good idea." Różycki's comments, made at EWEA 2013, will be seen as controversial by many in the wind business.

Expanding interconnection between EU countries is widely viewed as an integral step on the path towards increasing the penetration of wind in the European grid, by widening market access, smoothing out the variability of production and encouraging the trading of green electricity between member states as they race to meet their binding 2020 targets.

Poland's large utilities are heavily reliant on coal, and its government has been resistant to many EU policies that would benefit renewables.

State-owned ENEA, Poland's third-largest utility, has invested in wind assets, but it sees the rapid expansion of renewables as "a kind of problem" for the network side of its business, Różycki says.

He also slams the impact of smaller, independent wind developers, which he accuses of forcing larger, more stable players out of Poland by demanding grid access and then sometimes failing to finish their projects. ☐

Europe's structural problem

CHRISTOPHER HOPSON
VIENNA

The European Commission's failure to promote its structural fund to developers is hampering wind power in Eastern Europe, EWEA 2013 heard yesterday.

At the launch of the EWEA report *Eastern Winds: Emerging European Wind Power Markets*, Jacopo Moccia, the association's head of policy analysis, said the lack of knowledge of how to tap EU funding was a real problem in emerging markets. "If you go and talk to developers in many Eastern European countries,

they seem to be unaware that structural funds even exist."

Richard König from Austria's Raiffeisen Centrobank said one of the biggest difficulties in Eastern Europe is that pension and infrastructure funds require long-term predictability and a low risk of regulatory change.

Speakers also warned against introducing "counterproductive" local-content rules. "If politicians want the most economic form of energy, they should not be imposing local-content requirements on the industry," said Iñigo Sabater Eizaguirre from Vestas.

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Banks stop financing onshore wind in France

Industry body says Paris must act on FIT to prevent a wave of redundancies

RUN FOR THE HILLS: A wind farm in Murat-sur-Vèbre, southern France. *Below:* Nicolas Wolff

KARL-ERIK STROMSTA
VIENNA

Banks have “completely stopped financing” French onshore wind projects, industry sources say, putting the country’s 2020 renewables target even further out of reach.

The picture for onshore wind is growing bleaker by the day, as the industry waits for the government to decide whether to launch a new feed-in tariff (FIT) for wind — to replace the existing FIT, which has since last year been bogged down in the European Court of Justice (ECJ).

The government recently confirmed it is “studying” the possibility of launching a new FIT to replace the existing one.

But uncertainty over whether, or when, it might do so has made it impossible to finance projects, resulting in a sharp slowdown, says Nicolas

Wolff, general manager of Vestas France and president of trade body France Énergie Éolienne (FEE).

FEE says the government must show its hand by the end of the first quarter, or the industry will be hit by a wave of job losses in the second half of 2013.

France installed 750MW of onshore wind last year, down 15% on 2011 and 35% on 2010. The country must install about 1.3GW annually to meet its 2020 target.

France was already widely expected to miss its 2020 renewables target, let down by both its onshore and offshore sectors. It now appears France will have just 2GW of offshore wind in place by the end of the decade, against a 6GW target, and just 14GW of onshore wind compared to the official 19GW target, says FEE.

Many observers believe the existing FIT will be struck down because the French government did not properly report it as a form of state aid to the European Commission. The ECJ’s ruling is not expected until November. ☐

Nordex: 2013 will be a big year for us in Germany

BERND RADOWITZ
VIENNA

Nordex is optimistic that it can massively increase its share in a growing German market, chief executive Jürgen Zeschky tells *Recharge*.

In 2013, “we’ll be closer to 10% [of market share] than to 3%, that’s for sure,” Zeschky says.

Nordex installed 86MW in 2012 — a 3.5% share of the 2.4GW of wind added in the country last year.

In 2011, Nordex accounted for 3.9% of installations in Germany, according to the German Wind Energy Institute, Dewi, which is yet to release figures for 2012.

Nordex’s order intakes from 2012 show a significant increase in Germany, says Zeschky.

The reason for the expected boost is “very high demand” for its N117/2400 turbines, particularly from southern German locations with light winds.

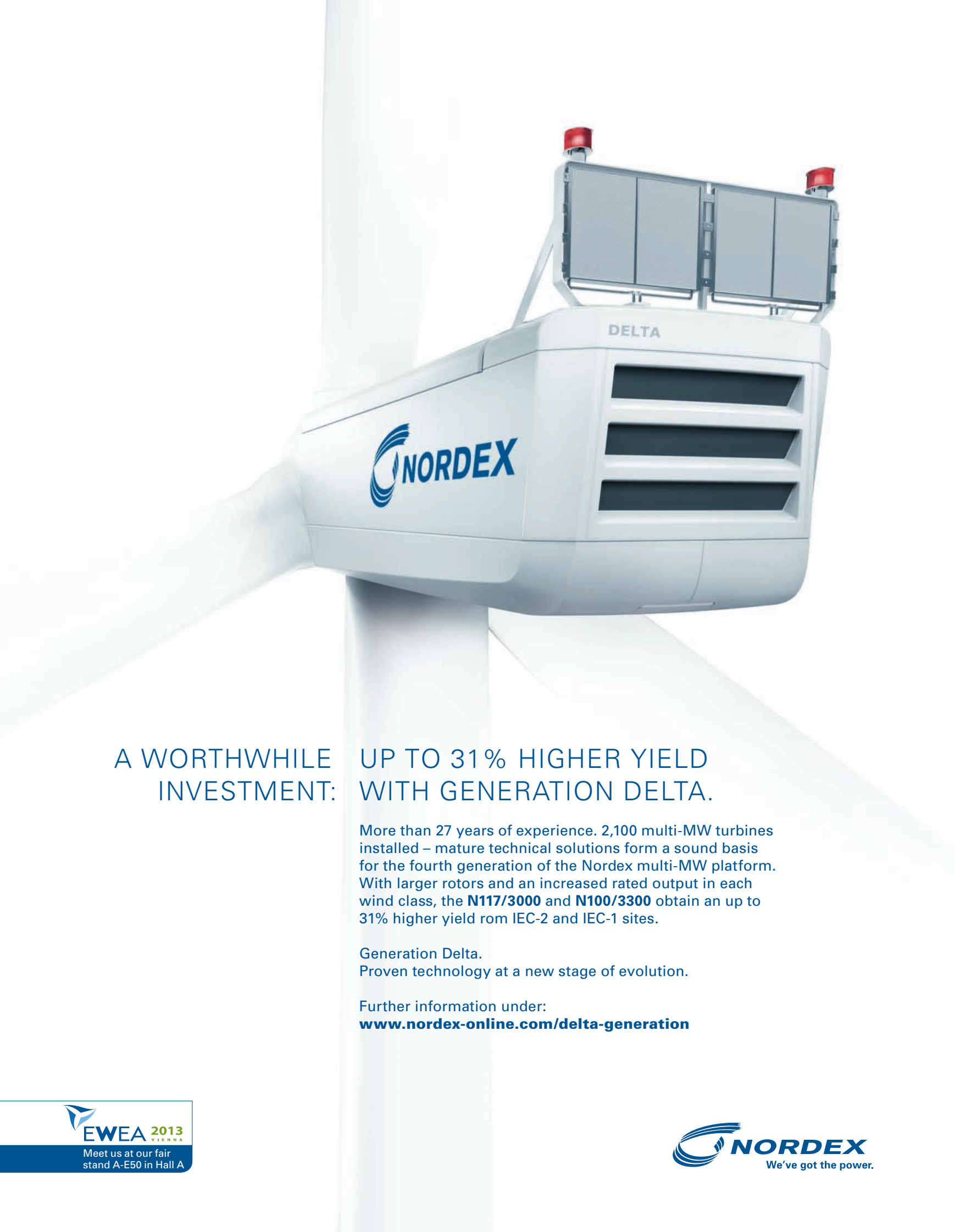
Series production of Enercon concrete towers in Austria

BERND RADOWITZ

Enercon has started series production at its new concrete tower factory in Zurndorf in Burgenland, eastern Austria, close to the Hungarian and Slovakian borders.

The plant has a weekly output of 45 tower segments for its 3MW E-101 turbines, and in future will produce 24 tower segments a day for projects in Austria, Hungary, Romania, Croatia, Poland and southern Germany.

Enercon’s market share in Austria is 50%, the company says.



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Avalanche of Norwegian projects expected

Series of large onshore wind farms will come on line from 2015 thanks to green scheme

OPEN FOR BUSINESS: The Havøygavlen wind farm in northern Norway

KARL-ERIK STROMSTA

A flow of large onshore wind farms will start coming on line across Norway from 2015, claims the Norwegian Wind Energy Association (Norwea) — sooner than the time frame forecast by the country's power-market regulator.

So far, the impact of the launch of a joint green-certificate (GC) scheme between Norway and Sweden at the beginning of 2012 has been minimal, admits Norwea managing director Øyvind Isachsen (pictured).

Depressed GC prices — largely the result of a sustained period of rain last year that contributed to cheaper-than-normal hydro electricity in Scandinavia — have not helped.

But Isachsen says there is no need for alarm, as Norway's power sector is "just starting to understand how the system functions".

"It's important to give the Norwegian power utilities a little time to figure out how to build wind parks, how to finance them," he tells *Recharge*. "They're used to operating 100-year-old hydro plants, and now they're being asked to operate in the wind market, where turbines last for 20 or 25 years."

Norway's existing wind base is

tiny — less than 600MW at the beginning of last year — having been choked off in the past by the country's vast hydroelectric base and lack of government enthusiasm.

But that is about to change dramatically. Under the GC scheme, Norway and Sweden, which already share a power market, must jointly produce 26.4 terawatt hours of more



clean electricity in 2020 than they otherwise would have, enough to create the necessary market pull, Isachsen says.

Experts claim Norway's grid could take as much as 7GW of wind by 2025, with the country's huge hydro reserve acting as back-up.

Even compared to hydro, wind boasts many advantages in Norway. Aside from having what Isachsen describes as "the

best wind resource in Europe", many of Norway's best sites remain undeveloped, in contrast to mature markets like Denmark and Germany.

And while only state-owned utilities can operate in Norway's large hydro sector, independent developers are allowed to build and own wind farms.

Early interest among developers is encouraging, including from foreign players. Last year, E.ON inked a deal with state-owned land management group Statskog to build as much as 600MW of onshore wind in Norway by 2017.

Meanwhile, the Swedish arm of RES recently bought a 500MW pipeline from a small Norwegian developer, and home-grown developers such as Fred Olsen Renewables are also pursuing projects.

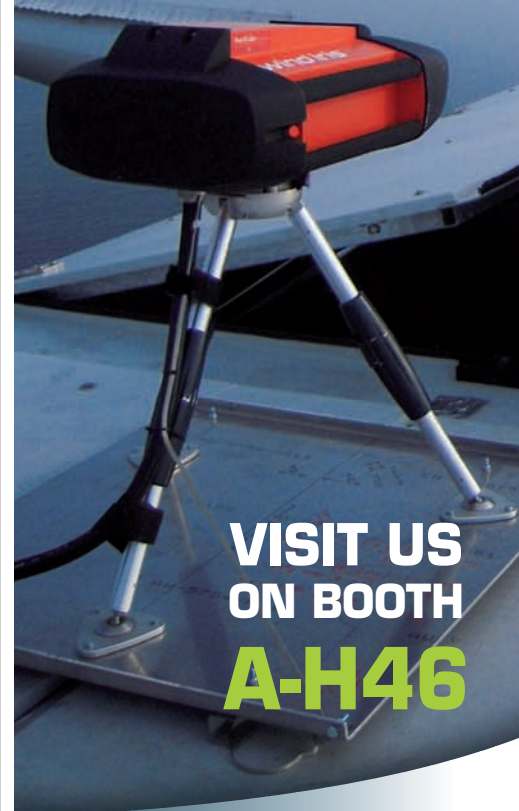
Inevitably, there will be objections to certain projects, but, in general, the public would prefer wind farms to new hydro schemes, Isachsen says.

"Of course there will be protesters, people who don't want to see more power production of any kind in Norway."

But the sheer emptiness of Norway works in the industry's favour. "Our country is nine or ten times larger than Denmark but with the same amount of people," he says. ☐

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Above: Last year's CEO panel, right: delegates at the Austrian stand reception

Happening today

CEO panel: Tough Times — Strategies of Wind Turbine Manufacturers

11:00 - 12:30 (Room Strauss 2-3)

What does the future hold for turbine manufacturers in Europe? With the financial crisis still impacting the wind industry, are we likely to see further consolidation among European manufacturers? Or do niche markets still exist, and are they enough to sustain smaller manufacturers?

This session will bring together the CEOs of Europe's leading turbine manufacturers to discuss their views on the challenges that lie ahead and their strategies for overcoming them. Will the industry see more outsourcing, as companies focus on their core competencies? Or will we see a move towards insourcing, as companies diversify their range of activities? How will this affect the rest of the supply chain, and the industry at large? Join us to hear the answers to these questions and to put your own questions to some of the industry's leading figures.

Conference session tickets: There is still a chance to attend even if you are not a conference delegate. Participants can purchase up to two conference session tickets per person at the registration desks.

Austrian stand reception

16:30 - 18:00 (Stands B-E40, B-F40)

The Austrian Wind Energy Association (IG Windkraft) welcomes all EWEA 2013 participants to Vienna and invites you to their stand reception at the Austrian Pavilion. Meet Austrian companies and experts, and receive information about the local wind industry whilst enjoying some regional drinks and snacks.

Conference dinner

19:30 - 23:00, The Hofburg, Heldenplatz

This exclusive seated dinner will be the most popular evening of EWEA 2013. Not only will you be able to meet professionals from the wind industry over an excellent meal, but you will also enjoy unforgettable entertainment.

This year's dinner will be held in the historic Hofburg. Built as part of the city's medieval fortifications, the Hofburg is the Habsburgs' former imperial residence.

Due to its unique architecture and history, the Hofburg is the perfect setting for the EWEA 2013 conference dinner.

This event is open to ticket holders only. If you have not already purchased a ticket, you can enquire at the registration desks.



Careers Day Restaurant-Club Brasserie, 1st floor

In its *Green Growth* report, EWEA forecasts that over the next 20 years, both direct and indirect employment will accelerate as a result of the expansion of wind energy in emerging markets and offshore (between 2.5 and three times more labour-intensive than onshore wind).

Despite this positive longer-term trend, EWEA's members stated in the 2012 membership survey that recruitment and retention of qualified staff is a challenge.

For employers, recruiters and job seekers, whatever your profession in the wind industry, the Careers Day has a lot to offer. Organised in collaboration with Greenfish recruitment agency, the Careers Day features presentations addressing recruitment challenges, market trends and training needs, as well as a matchmaking event and advisory services.

Come to the Careers Day if:

- Recruitment issues concern you and you would like to contribute to the debate;
- You are working in human resources and are looking for recruitment solutions;
- You are looking for a job in the wind sector;
- You are not actively looking to change jobs but would like to know more about market trends and training opportunities;
- You work in a university and can offer study programmes for students interested in the wind sector.

Careers Day Programme:

- 10:00 - 10:30 "10 most wanted profiles" survey presented by Greenfish
- 10:30 - 10:45 Career opportunities at Leosphere and Avent Lidar Technology
- 10:45 - 11:00 SgurrEnergy Career opportunities
- 11:00 - 11:15 WSB Neue Energien GmbH: Your career in a family-owned company
- 11:15 - 11:30 Q&A
- 11:30 - 11:45 Coffee break
- 11:45 - 12:15 Training opportunities, needs and recommendations in the European wind sector
- 12:15 - 12:30 European Academy of Wind Energy
- 12:30 - 13:00 The "Women in Wind" network

The Careers Day presentations are free of charge, however, you must be registered to attend. To register, visit: <http://www.ewea.org/annual2013/whats-on/careers-day/presentations/registration/>

Don't miss tomorrow

Certification 11:00 - 12:30 (Room Schubert)

Certification is very important to provide assurance to all entities involved in wind projects: wind park operators, banks, government agencies, etc. Featuring insights from industry experts, this session covers most aspects looked at in the certification process. Two presentations will cover details that must be looked at in the design and certification process. The first will consider the verification of grouted joints and will share experiences and recommendations. The second examines the analysis of structural components, specifically for the connections of blade and hub. The hundreds of harmonised standards for wind turbines under the Low Voltage Directive are covered in a third presentation. Finally, examinations of new guidelines for offshore wind turbines and farms, and an extension of offshore wind guidelines for floating foundations, complete the session.



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Statoil's \$100m plans to build a floating turbine demonstrator array off the US East Coast have cleared a major hurdle, with the Maine Public Utilities Commission (PUC) giving its blessing to a revised project blueprint.

The pilot, in a 57sq-km site 19km offshore in 140-158 metres of water, will be built around a quartet of second-generation Hywind spar-type hulls outfitted with 3MW turbines.

"On the commercial side, this is one of the biggest obstacles [overcome]," Statoil project manager Kristin Aamodt tells *Recharge*. "It is a real achievement.

"This project will show that these turbines can be deployed in a [wind] park setting, that you can reduce cost significantly from the one-off demo unit. It will point the direction towards a future cost of energy that is competitive [with fossil-fuel-powered generation].

"This is an important step toward the commercialisation of large [floating wind farms]."

A proposal submitted by the Norwegian utility in October was rejected "largely on supply-chain grounds", according to Aamodt.

The reworked plan pledges to look to state contractors for any commercial wind farm that Statoil develops by 2025. It also promises an electricity generation rate of \$0.27 per kWh — \$0.02 lower than in the original proposal — as part of the terms for the project's



IMPORTANT STEP:
Kristin Aamodt

Hywind overcomes its Maine hurdle

power-purchase agreement with utility Central Maine Power.

"The PUC was concerned with making sure that the Maine supply chain sees a benefit from this project — that they get the knowledge to build on for any big future [floater] projects in the region," Aamodt says. "We have managed to give them some assurances on this front."

The green light clears the way for a final investment decision next year, with the pilot project potentially coming on line by 2016.

The next-generation Hywind,

ballasted with water and gravel to balance in depths of more than 200 metres, secured by a three-point mooring spread, has undergone fine-tuning, including having the hull's draft trimmed to a more compact, lighter "site-optimised" design that stretches 76 metres below the surface.

"Increasing the turbine size while decreasing the draft will make the Hywind 2 much more cost-efficient than the demo unit," adds Aamodt.

The original prototype, installed in 198 metres of water

off the southwest coast of Norway in 2009, has performed above expectations, with a capacity factor better than 50%.

Operating in winds of up to 40 metres per second and waves as high as 19 metres, the floater has flowed 26GWh to date, a yield Statoil calculates to be 30-40% higher than a "typical land turbine" and 10-20% higher than conventional monopile-mounted offshore machines.

Plans for pilot installations off Japan and Scotland "are still options we are developing in parallel", Aamodt adds. ☐

Photograph | Ole Jørgen Bratland/Statoil

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The \$5.5bn question: where's the joined-up thinking?

A meshed grid should be a priority for the UK offshore wind industry — so why isn't anything being done, asks **Karl-Erik Stromsta**

A joined-up, “meshed” grid is one of the most obvious ways to bring down the cost of the UK's offshore wind programme, yet there is no agreement on how — or even whether — it will ever happen.

There is little argument against the idea of such a grid, which would flow electricity from multiple projects and zones to shore in concert, says Moray Thomson, a partner at the MacRoberts law firm specialising in energy and planning.

Such an approach would lower capital costs and reduce environmental impacts, while minimising the need for upgrades to the onshore grid — often one of the toughest aspects of a project to bring through to consent. It would also facilitate the development of a North Sea supergrid in the years ahead.

The UK government estimates that greater co-ordination could reduce the cost of connecting offshore generation by £3.5bn (\$5.55bn) by 2020, to say nothing of the benefits in the

years beyond, when the whole of Europe's electricity system opens up.

Yet with Round 3 projects only a few years from starting construction, little is happening. The market regulator, Ofgem, developers and the government all point fingers at one another — and to some extent all three are justified.

It's not surprising, or even a bad thing, that meshed grids were not built for the Round 1 and 2 wind farms now in operation, with projects instead linked to the grid via point-to-point or “radial” connections.

Many existing projects are relatively small and remote, and were built when the full scope of the country's offshore ambitions was not yet clear, notes Grant McKay, UK marketing and sales manager for grid components at ABB. “The majority of schemes built to date weren't necessarily suitable candidates for co-operation,” he says.

The problem is future projects, many of which are clustered



FAIR SHARE:
Siemens' Matthew Knight, right, with David McVeigh of Northern Ireland marine manufacturer Harland and Wolff, in front of the substation for the Gwynt y Môr wind farm off the Welsh coast



CABLE GUYS:
Laying the export cables from London Array, off southeast England

— an arrangement that has led to painful delays.

In contrast, British developers can build their own connections and transfer ownership to a third party later. As a result, grid delays have been far less of an issue for the UK industry.

The disadvantage of this system is there is no incentive for individual developers to build a more expensive grid now that might accommodate a rival developer's project in future, even if the benefits for the industry as a whole are clear.

In some cases, developers are making "anticipatory investments" in offshore grids that may not be fully utilised for years — but only when that future utilisation will come from their own projects, says Matthew Knight, Round 3 business development director for Siemens Energy. "Even that is not a decision people take lightly," Knight says. "It means twice as many lenders, twice as many complications, and it's ultimately twice as difficult to reach a final investment decision. "You're asking one particular party to take a risk upfront, but

the benefits accrue to the whole industry — or to UK ratepayers at the end of the day [via lower electricity prices].

"It's a much harder sell for developers when you're splitting the benefits around."

Some observers believe the Crown Estate, owner of the UK seabed and licensor of Round 3 zones, should twist developers' arms to make them co-operate. Others acknowledge that it has

encourage greater co-operation. But industry sources say the speed at which such deliberations are moving is out of sync with broader industry development.

Duncan Stone, head of offshore electricity networks at the Department of Energy and Climate Change, acknowledges that under the current system, any co-ordination ultimately boils down to "private, commercial agreements". The government is fundamentally more comfortable with that approach than some more "socialised" arrangement.

That doesn't completely rule out a meshed grid in UK waters.

"From what I understand, there are actually plans and possibilities for co-ordination at some Round 3 projects," Stone says. "But I do think there's a real question as to whether there is one body with sufficient holistic powers of planning and foresight — and even powers [to force developers], if necessary — to stick up for [the national interest]." □

The Crown Estate has little leverage under the existing system

already tried hard to bring various parties together, to little avail.

At the end of the day, the Crown Estate has little leverage because under the existing system, developers can simply walk away from projects if they become uncomfortable with the economics — a nightmare scenario for UK energy policy.

Ofgem is reviewing the arrangements for installing offshore transmission, to

geographically, or at least are likely to flow electricity onshore along the same coastlines, especially on the eastern coast.

In Germany, developers are forced to rely on transmission system operators to build offshore grids in time for the commissioning of their projects

Photography | Kelvin Boyes/Press Eye | Mark Turner/London Array



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Hardware technology may not sound like the sexiest track at EWEA 2013, but the sessions under the guiding hand of Jan van der Tempel will deal with the nuts and bolts of the wind industry.

Without investment in these “real-life products”, the EU’s wind sector will find it difficult to compete with the rest of the world, believes Van der Tempel. He is chief executive of Ampelmann — a spin-off of the Delft University of Technology in the Netherlands that operates motion-compensation gangways for accessing offshore structures.

The past decade has seen countless changes in wind technology, not least in the size of the turbines. The industry has to keep innovating, but it also needs to stop for a moment and consider how it can become more cost-effective. “There is an absolute need for R&D, for talking, but just as — or even more — important is the need for industry to implement concrete solutions,” Van der Tempel says.

The sessions in the Hardware track will discuss “a mix of brilliant ideas that have been thoroughly measured, tested, can be implemented by industry and can improve cost-effectiveness”.

One area in which practical improvements are readily achievable is gearboxes and drivetrains. “Lots has been going on in this field in recent years,” he notes.

Choosing the right drivetrain concept is critical for reducing the cost of energy. Moreover, the need for quality is imperative, since the drivetrain represents only 4% of the cost of energy for an installed offshore turbine, while operations and maintenance costs for this technology comprise 34%.

Ideas to make blades larger, lighter and more cost-effective are the basis of another session, with Van der Tempel promising “potential solutions for design issues that have been challenging the blade community for quite a while”. These include ways to have integrated design and testing methodologies; solutions for split blades; and tackling erosion.



RAISING THE STANDARD:
There must be no let-up in the push for innovation

Experts are going back to basics

The Hardware track will examine the nuts and bolts of the industry’s drive for excellence, reports **Philippa Jones**

A third session will look at electrical systems and discuss how the industry is facing up to problems related to converting turbine shaft torque to power on the grid. Participants will learn about advances in offshore generators and power electronics, new grid-code testing methods and high-voltage transformer technology.

One session that Van der Tempel is “very happy” to see on the programme is the one on certification. “Someone can have a brilliant idea, but ultimately it will need to be certified,” he comments, welcoming the session’s “broad mixture of people”, from research, industry and certification bodies.


European experts dominate this track, partly because it is an EU conference, but also because “there is lots of technological development in Europe”. He believes this is vital if the EU is to compete, notably with China, where production costs are much lower.

“To really sell products, the EU has not only to be cost-effective, but has to deliver innovative and quality products that have more reliable structures than their counterparts elsewhere in the world and can offer service packages that make wind more attractive than other types of energy production,” he concludes.

No small task. ☐



Hardware track chair **Jan van der Tempel** is chief executive of Ampelmann and head of the offshore wind group at Delft University of Technology, where he is part of a team that is working on an alternative to the grouting used to connect turbines to their offshore foundations



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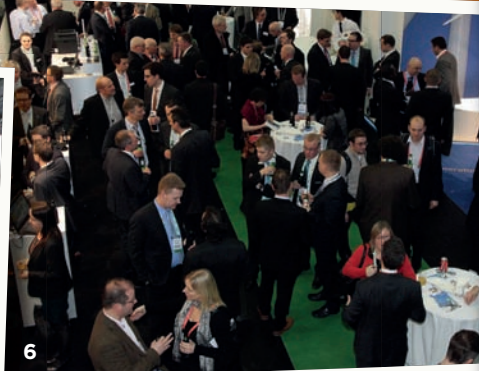
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Photos of the day

1. (left to right) Recharge advertising director for EMEA, Rex Reksnis; Steve Sawyer, secretary-general of the Global Wind Energy Council; Vic Abate, vice-president of renewables at GE Energy; Henrik Stiesdal, chief technology officer at Siemens Wind, and Recharge commercial director Angelo Iannelli at the Recharge Thought Leaders reception; 2. Stiesdal speaks to the reception; 3. Opening Boom or Bust panel session; 4. Attendees watch a demonstration in 3D; 5. Strong man Martin Wildauer shows his strength; 6. EWEA 2013 beer reception; 7. Julian Scola, EWEA's communications director, at yesterday's Eastern Winds press conference; 8. EWEA 2013 charity run

Photography: EWEA/Jason Bickley/Alexandra Buxbaum/Michael Buxbaum