DAY THREE

EWEA OFFSHORE COPENHAGEN 2015

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E.ON's Michael Lewis at the *Recharge* Thought Leaders Roundtable yesterday

Offshore failing to trumpet success stories

CHRISTOPHER HOPSON
BERND RADOWITZ

THE offshore wind industry is doing a bad job of communicating its successes and benefits, senior executives agreed at EWEA Offshore 2015 yesterday.

Michael Lewis, managing director of E.ON climate and renewables, speaking at the *Recharge* Thought Leaders Roundtable, asked whether the industry is doing enough to promote what it has achieved.

"I have been coming to EWEA events for years, but it's always the same debate about grids, innovation and costs," Lewis said. "When I look at the UK's London Array [inaugurated in mid-2013] and compare it to projects we are doing today, the levelised cost of energy has come down enormously. We have made huge strides on costs, and this is real, and we can demonstrate it. Compared to new nuclear in the UK, we are already very competitive.

"Wind is some of the best projects we have invested in, so what we need to do as an industry is to communicate how well we have done and what we have achieved."

Michael Hannibal, Siemens' chief executive for offshore, says communication is a central task for the industry.

"We are not too late. I am not one for talking negatively about others, but if you mention nuclear, then Hinkley Point C comes to mind," he said, referring to the 3.2GW, £24.5bn (€34.7bn) nuclear power station planned in southwest England. Austria is already threatening to mount a legal challenge over subsidies to the plant.

"I think you are looking at a project with a 35-year subsidy, starting at €130 per MWh, indexed from today, which will produce in the mid-2020s," Hannibal added. "That is a huge subsidy given to someone. It may be safe for investors in this nuclear plant, but it's not safe for the environment and it's not safe for people. Nothing has been set aside for decommissioning this plant, and it has no insurance."

EWEA chief executive Thomas Becker told a breakfast briefing that it is "quite amazing" that the wind industry is still heavily scrutinised by those applying state aid rules, while approval has been given to Hinkley.

"It's the UK taxpayer who is going to end up picking up the nuclear bill. So coming to the wind industry and saying we are overly subsidised is a bit peculiar," he said.

Photograph | Jason Bickley/EWEA

Siemens Wind chief executive for offshore, Michael Hannibal (centre), with Veja Mate owner Lord Laidlaw of Rothiemay (right), and Albert Jochens, chief financial, of Veja Mate Offshore Project

> We will mount the whole transmission asset to the turbine

New technology 'will remove the need for offshore substations'

Tim Dawidowsky

BERND RADOWITZ

SIEMENS has unveiled technology that will make expensive offshore substations redundant and could slash grid access costs by up to 40%, the company revealed at EWEA Offshore 2015 yesterday.

Instead, the alternating-current (AC) transformer equipment will be bolted on to the outside of the wind turbine tower.

"We try to get rid of all these steel structures, and the platform itself," said Tim Dawidowsky, chief executive of transmission solutions at Siemens' energy management division, during a press conference.

"We will mount the whole transmission asset to the turbine. We can do it on a separate foundation, or on the turbine itself... We have simplified the whole system down to the minimum."

Each "offshore transformer module", as Siemens calls the new technology, that is attached to a wind turbine is nominally rated at 250MW. Several devices can be linked together to provide the required transmission capacity even for large wind parks.

Siemens says that the new technology is an important lever for reaching the goal of reducing the cost of offshore wind power to below €100 per MWh by 2020.

"We will achieve a 30-40% cost reduction [as part of the grid-access costs] compared to conventional systems," Dawidowsky said.

Costs will also be reduced as the technology removes the need for expensive heavy-lift vessels and a 20% shorter installation time.

Siemens gets nod for 400MW Veja Mate

BERND RADOWITZ

SIEMENS has been named preferred supplier by Scottish investment firm Highland Group Holding for the €1.9bn, 400MW Veja Mate offshore wind project in the German North Sea.

Special purpose company Veja Mate Offshore Project and Siemens signed an agreement on the delivery, installation and commissioning of 67 of Siemens' SWT-6.0-154 direct-drive machines. The deal also covers the installation of foundations, cables and substations, as well as a 15-year service and maintenance contract.

Highland Group sees offshore wind farms as a new asset class with the potential "to be profitable and build demand in the future," said Lord Laidlaw of Rothiemay, the owner of the investment firm, at the signing of the deal with Siemens at EWEA Offshore 2015 yesterday. Highland is very confident it can make a final investment decision on the project in June and wants to include two further investors in Veja Mate, Lord Laidlaw told *Recharge*.

The project will be 115km off the German coast, close to the 400MW Bard 1 offshore wind farm.

Turbine installation is scheduled for March 2017, with the project due to be commissioned the same year, according to the grid-connection plan.

Highland Group also owns the 210MW Deutsche Bucht project in the German North Sea, but Lord Laidlaw added that project is "on the backburner" for the time being as preference is now given to Veja Mate in order to be eligible for German feed-in tariffs at current rates before they drop slightly in 2018.

The investment company bought both offshore projects from bankrupted German developer Windreich.

Photograph | Jason Bickley/EWEA | Siemens

Horns Rev 3 low bid price 'not a precedent'

BERND RADOWITZ

THE low price of energy achieved at Denmark's tender for Horns Rev 3 is something of a one-off and does not have implications for projects in other countries, EWEA Offshore 2015 heard yesterday.

Last month, Vattenfall won the tender to build the 400MW Horns Rev 3 — which the Danish Energy Agency says will be Europe's cheapest offshore project so far, with a bid price of DKr0.77 per kWh, or about €103 per MWh.

Smart planning and regulation, and a government that listened to the industry during the tender process and adapted some parameters to reduce risks resulted in the "surprising" strike price, Jakob Lau Holst, chief operating officer of the Danish Wind Industry Association, told a breakfast discussion. "It is very fine and great," he said, but "it is not easy to compare [to other European offshore projects] because the grid connection is not part of the investment by Vattenfall — that is carried on by [transmission system operator (TSO)] Energienet.dk".

Grid access accounts for 20-25% of the overall cost of an offshore wind farm of a "reasonable size", Patrick Weber, head of grid access at Siemens' energy-management division, told *Recharge* at the event.

In Germany, for example, offshore grid access is provided by transmission system operators, but paid for via a relatively high feed-in tariff, which also covers other elements such as turbines, cables, substations and O&M costs.

In Denmark, the TSO not only provides grid access outside the tender-based support scheme, it also bears financial responsibility for losses of revenue stream if there is a fault on the transmission line, Lau Holst added, which takes further pressure off the developer or operator.

Photograph | Siemens

Siemens turbines at Horns Rev 2

Danes on track for 50% wind

DARIUS SNIECKUS

DENMARK is on track to get 50% of its electricity from wind by the end of the decade and to be "free of fossil fuels" by 2050, underpinned by a stable, long-term offshore tendering process, energy minister Rasmus Helveg Petersen told *Recharge* yesterday.

Following the award last month of the 400MW Horns Rev 3 to Swedish developer Vattenfall, which won with a bid price of €103 per MWh, the Danish government plans to open the 600MW Kriegers Flak to bids in the spring, followed by a near-shore tender of 350MW.

"Denmark has the longest experience of offshore tenders in the world and we have developed a very efficient process — and with it a [wind] industry with a proven track record covering the full value chain," Petersen said.

"We do our homework, we do a thorough offshore planning process and environmental impact assessment, and, may I add, we learn from our mistakes."

Petersen attributed the success of the tendering process to "convenience and transparency", with the Danish Energy Authority shepherding the process as "a one-stop shop".

The winning bid for Horns Rev 3, he noted, is 32% less than the 2008 Anholt tender, making it the country's cheapest offshore development.

"This shows how far offshore wind has come in the past five years," Petersen added. "We got the results we planned for; I would have been sorely disappointed if we had not been able to drive down prices from the levels we saw on Anholt."

He sees the benefit of his government's "strategic intent" carrying the renewables transition to its "logical end" — zero dependence on oil and gas.

"The 40% [of wind power in the grid] is bound to be surpassed this year and will pass the 50% mark by 2020, if not before."

Petersen believes the current tendering strategy would not be knocked off course by a change of government after the election this year, though he admitted there is a "danger of a split in current energy policy" between his Social Liberal Party and the conservative opposition.

"Even if my government were to fall at the next election... a new government will actually find it quite hard to counter what has been promised, what has been planned," he said. "They would, I believe, continue our policy."

Danish energy minister Rasmus Helveg Petersen

Photograph | Jason Bickley/EWEA

Seastar gets cracking on cost-cutting

DARIUS SNIECKUS

NORTH Sea offshore wind alliance Seastar was officially launched at EWEA Offshore 2015 yesterday. The alliance, which has founding members from the UK, Germany, Denmark and the Netherlands, aims to bring together initiatives from the four countries at a European level, taking cost-reduction, knowledge-management and grid-integration objectives "beyond the national boundaries that the initiatives are often limited to".

To kick-start its activities, Seastar will begin a programme of work that introduces best practice initiatives from the UK Offshore Wind Programme Board's Cost Reduction Monitoring Framework; German and Dutch cost-reduction programmes; and grid-integration work from Denmark.

Seastar aims to help spearhead grid connection of at least 30GW of projects in UK, Danish and German waters by 2025.

"Offshore wind will be one of the leading low-carbon technologies that will deliver energy security, clean power and economic value to the EU over the next decade," says Seastar chairman Adam Bruce.

"The offshore wind industry has shown that by combining to tackle barriers to deployment and best practice, it can reduce costs and accelerate innovation. The Seastar alliance has come together to harness this activity across Europe's northern seas."

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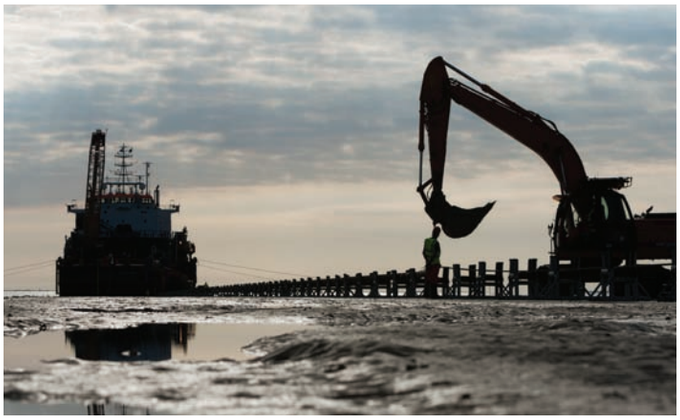
Industry projects to cut cable-laying risks

DARIUS SNIECKUS

TWO high-impact industry projects have been launched in the UK to cut the number of cable-related incidents during laying operations at offshore wind farms — hitches that have led to pay-outs totalling £75m (€103.4m) by insurers in recent years.

A primer on cable burial risk management has been published by the Carbon Trust to answer some of the "significant cost overruns and schedule delays" seen during construction of Britain's first wave of offshore wind farms, 80% of which reported cable-laying problems that undercut project economics.

"The Cable Burial Risk Assessment [CBRA] is a tool to evaluate the real external threat to cables based on actual site conditions," states Carbon Trust project manager Dimitris Kostopoulos, "and provides developers with the possibility of assessing the cable protection level once the operation is performed and over time by updating site survey data in real time.



Photograph | VBMS

"It aims to give the industry a new mindset... [taking] into consideration shipping activity in the area, fishing zones, water depths, soil type and cable route."

The CBRA guidance is expected to lead to "less stringent requirements" for in-field cable burial, opening the door to savings in cable length and reduced cable handling during installation.

Cable laying at an offshore wind farm is site-specific, so cost reduction is hard to quantify, but the effect on a project's economics "will not be marginal".

On a similar front, the UK's Offshore Renewable Energy (ORE) Catapult is spearheading a scheme to streamline the exchange of geological data collected at wind projects to cut the risk and cost linked to laying inter-array cables.

The scheme is canvassing views from a group of major developers and cable contractors to highlight "any gaps in expectation with regard to the exchange of information", with an eye on sharpening the quality of data available to installers.

"The key to every project is to ensure geological data is used to its fullest capacity throughout the development process," says ORE Catapult head of knowledge management Keith Harrison.

Information will range from "what data is being used, how it is accessed and the associated issues with developers and installer interacting and sharing data, through to techniques used in survey and deployment".

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HAPPENING TODAY

Conference sessions: Top picks

Science & research: Controlling offshore
09:30-11:00 (Room A10)
Science and research, innovation and floating turbines. This session has it all! Learn about controls of offshore wind turbines, control of floating platforms and load mitigation from bright minds in the offshore wind industry.

Overall optimised layout design for lowest LCoE
11:45-13:15 (Room A11)
Wind farm layouts have traditionally been based substantially upon energy optimisation, within restrictions imposed by third-party stakeholders. With bigger and more complex sites, the effect of layout design on LCoE, through capex and opex costs, as well as yield calculations, is greater, and therefore more assessment is warranted. Learn about the current state-of-the-art layout-optimisation methods and their value.

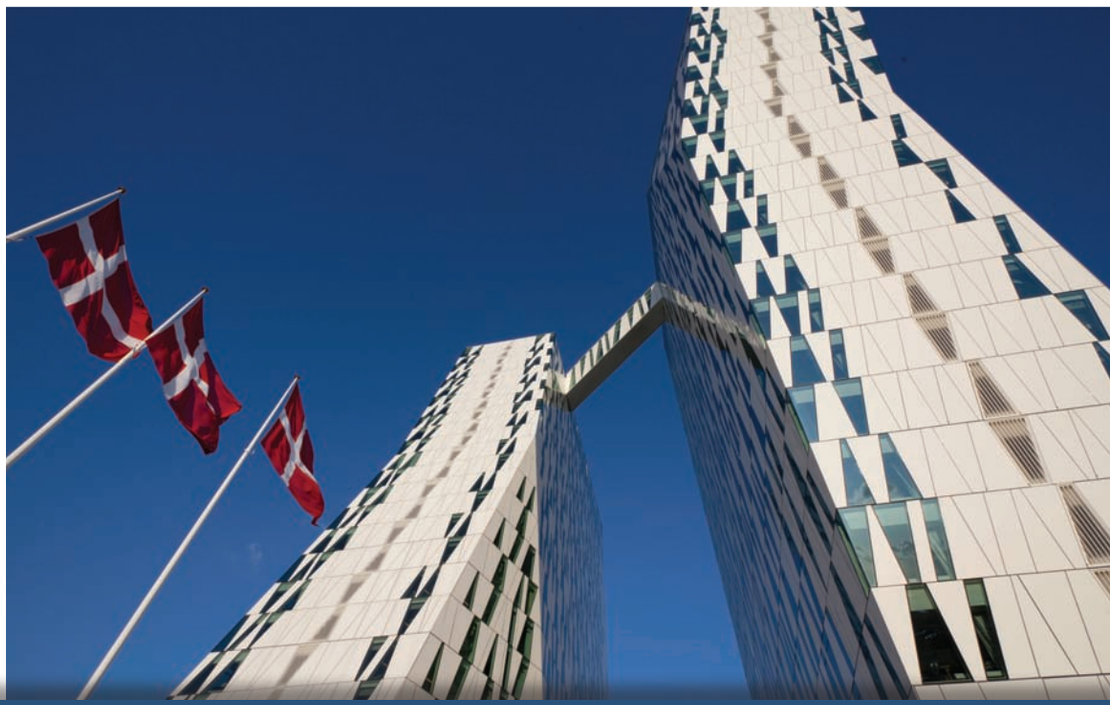
Not a conference delegate?

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

SIDE EVENTS

Kick-starting development in the Baltic Sea
9:00–11:30 (Meeting Room 20)
Join the Baltic Sea Offshore Wind Forum as they discuss opportunities and barriers to development

Integrated North Sea offshore grid solutions
11:00–12:30 (Bella Sky Hotel, meeting room 178)
Hear about the costs and benefits of linking up North Sea countries in an offshore energy grid



OUR FAVOURITE PLACES TO HANG OUT

Visit the Speakers' Corner in Hall A
Hear first-hand from companies on their latest activities, innovations, product highlights, projects and more.

Catch up on your reading in the Media Lounge in Hall E
Grab a coffee and choose from a selection of industry magazines to find out about the latest news and developments.

Relax at the Relaxation Area in Hall C
After some intense days of business and networking, don't forget to book in a head massage to revitalise.

DON'T MISS

EWEA 2015 Annual Event
In November, the EWEA 2015 Annual Event will take place in Paris, two weeks before world leaders meet to discuss climate negotiations at the UN Summit in the French capital. With the exhibition selling fast and a terrific platform for both the offshore and onshore wind industries to show their strength, this event promises to be the highlight for the sector in 2015. Make sure you book 17–20 November in your calendar.

Find out more at www.ewea.org/annual2015

Japan's offshore vessel dilemma

Pioneering Japanese floating wind project Fukushima Forward

Photograph | Irwin Wong

BRIAN PUBLICOVER

The most serious problem facing Japan's offshore wind industry is a shortage of installation vessels, says a senior renewables figure.

Japan needs to buy or build more installation and maintenance vessels to drive the growth of its offshore industry — but the sector's slow development means opportunities may remain limited in the short term, according to Senichi Sasaki, deputy general manager of the renewables department at national certification body ClassNK.

Japan has not accumulated a fleet of vessels that could be used to install offshore turbines because it has never had a sizeable oil and gas industry.

Unfortunately, the lack of vessels is a chicken-and-egg problem. The country's marine construction firms will generally not invest in new hardware until a significant pipeline of orders materialises... but developers may delay their offshore wind plans until they have access to a domestic fleet of appropriate vessels. There really need to be prospects for offshore installations every year. That is the driver for cost reductions," says DNV GL Japan manager Yukinobu Uchida, estimating that annual installations of 30-40 turbines might be enough to spur the acquisition of more vessels.

At the moment, only a handful of local companies appear eager to invest in installation vessels. "It's expensive," Sasaki admits.

A handful of near-shore projects now under development may start driving demand for more installation ships.

Japanese telecoms giant SoftBank and construction firm Komatsuzaki plan to start installing 20 5MW turbines off the eastern port of Kashima in Ibaraki prefecture this fiscal year.

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siemens.com/wind

Four naval frigates, built by Navantia, accompany the American aircraft carrier USS Theodore Roosevelt in the Persian Gulf

Photograph | Navantia

Naval yard building first offshore jackets

DARIUS SNIECKUS

SPANISH shipbuilder Navantia will this May start fabricating turbine jackets and substation foundation and topsides for developer Iberdrola's €1.4bn Wikinger project in the Baltic Sea.

The naval yard, which has divided construction duties for the job between its Fene and Cadiz yards, will work with compatriot Windar Renovables to supply the jackets for the 350MW wind farm, Germany's deepest water project. The foundations will support 70 5MW turbines from Gamesa-Areva joint venture Adwen in water depths of 37=43 metres.

"This is a very important order for Navantia," says Abel Mendez Diaz, the company's wind business commercial manager.

"It will be a fresh start for us in this sector. We have great expectations around the offshore wind market, and it is paramount that we complete this project well.

"We are competing for many other projects now too and the results from Wikinger will be looked at very closely by our clients."

The jackets are a conventional quattropod design from Cowi-IMS with refinements to the braces, legs and transition pieces that will trim the weight of the structures to 600-650 tonnes. They are slated to be ready by summer 2016.

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Alla Weinstein at the Recharge Thought Leaders Roundtable, alongside Siemens Wind's Michael Hannibal *centre*, and DNV GL's Johan Sandberg

Weinstein's vision of a floating future

LEIGH COLLINS
KARL-ERIK STROMSTA

"WE'RE not competing with fixed foundations, we're just creating the future. And that future's not that far away," the outgoing chief executive of floating wind pioneer Principle Power told the *Recharge* Thought Leaders Roundtable at EWEA Offshore 2015.

The offshore industry "needs to meet that magic number" of 100 per MWh, Alla Weinstein told an invited audience of 40 senior executives yesterday. "It's £100, €100 or it's $100. It doesn't matter which currency you're going to take, the target is the same in every market," she said.

"By doing what we did, which is eliminating a lot of infrastructure costs, eliminating a lot of offshore work, we should be able to get there.

"In addition to that, we are opening new markets... you can actually find sites that are closer to population centres and you're talking about deeper waters."

Weinstein pointed out that in several markets around the world interested in offshore wind, fixed foundations are not an option.

"The west coast of the US has no sites where you can install fixed foundations, it's all going to be floating. And by 2025, the west coast... will be looking to add about 6-9GW of installed capacity."

Joao Metelo

In Asia, she explained, the opportunities for floating wind are greater than for fixed foundations.

"Japan is looking to do installations to demonstrate that the levelised cost of energy of offshore wind can be a lot lower than what they experienced at Fukushima [the 2MW Fukushima Forward pilot project off northeast Japan]... they really want to get to something more reasonable.

"It's interesting that countries like Taiwan and South Korea, who are looking to install offshore wind, realise that they cannot do fixed foundations. Those countries will naturally have to go into the floating arena, because of their physical conditions.

"We see that the future for floating offshore wind is exactly that, it is the future, and that's exactly what we're creating."

Weinstein's successor, Joao Metelo, confirmed that Principle is seeing "huge appetite" in Japan for WindFloat, its floating turbine concept, and expects to be selling its technology on a competitive basis around the world by 2018.

Last month's appointment of Metelo, formerly chief financial officer of EDP Renewables, speaks to the more commercially minded phase the US company is entering.

"We're moving past the process of proving the technology from a technical and performance standpoint, to a place where we need to prove it from an economic and financial standpoint," Metelo told *Recharge*.

A WindFloat prototype fitted with a 2MW Vestas turbine has been operating 5km off the coast of Portugal since 2011.

The next step is getting two commercial-scale arrays up and running over the next three years: a 30MW project off Oregon, on the US Pacific coast — which Metelo described as Principle's "number-one focus" in the short term — and another off Portugal.

Once those two arrays are in place, the financial community will be able to see that WindFloat, with its semi-submersible floating foundations, is a "paradigm shift" for the industry, Metelo said.

"By 2017, 2018, we'll be in a position to... compete directly with existing [foundation] technology such as jackets.

"In Japan, we're seeing huge appetite. Floating can be a game-changer for the offshore wind market in Japan and the power business generally."

Photograph | Jason Bickley/EWEA

Photos of the day

1) Events assistant Smita Pati on the EWEA stand; 2) *Left to right*: Claudia Martens, vice-president, supply chain, for Adwen; EWEA director of public affairs Ivan Pineda; Jan Kjaersgaard, managing director of Bladt Industries; and Jonathan Cole, Iberdrola's offshore managing director, at yesterday's plenary session; 3) EWEA spokesman Oliver Joy enjoying yesterday's boat trip to the Middelgrunden offshore wind farm; 4) Latvian minister for economics, Dana Reizniece-Ozola, makes a keynote speech; 5) Lars Hedemann of Siemens makes a point during a session on unconventional paths in offshore wind technology

Photography | Jason Bickley | David Plas | Petr Novak | EWEA