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Vind • CONFERENCE & EXHIBITION 2019 2-4 APRIL BILBAO

WindEurope: EU states' renewable-energy plans 'won't deliver 32% target'

ANDREW LEE

ational Energy and Climate Plans (NECPs) drawn up by EU member states are "badly lacking in policy detail" and will leave the bloc short of its 2030 renewables target, WindEurope has warned.

Draft NECPs submitted to Brussels are rated "insufficient" or "poor" for every EU nation in an analysis released by the industry body yesterday.

All member states have to submit draft plans and then turn them into firm strategies that can help deliver the EU's aim of an overall 32% share of renewable energy by the end of the next decade.

WindEurope said some member states are promising high volumes

of renewables deployment — but none has a detailed policy agenda to achieve the goals, "which means the pledges are not meaningful".

Key issues not addressed include schedules of renewables auctions, measures to simplify and speed up permitting, and strategies to deal with renewables capacity reaching the end of its working life — the situation facing an estimated 60GW of wind power by 2030.

Increasing penetration of renewables in heating and transport is another gaping hole, and not one nation has a plan to simplify corporate renewable PPAs — an "explicit mandate" of the EU's latest Renewable Energy Directive, said WindEurope.

"National governments need to fill



these big gaps," said WindEurope chief executive Giles Dickson. "When are the renewables auctions happening? How much are you auctioning? How are you going to make it easier to get permits for wind farms?

"It's clear answers to these sorts of questions that encourages the renewables industries to invest, and means we can plan ahead and further reduce costs. And we'll invest in those countries that have the clearest plans. So it pays for governments to get them right."

European energy ministers met in Romania yesterday to discuss the draft plans, which have to be turned into finalised versions by the end of this year.

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King Felipe VI: 'feel proud, but not content'



King Felipe VI of Spain was taken on a tour of the stands at the WindEurope exhibition yesterday, flanked by a large entourage, including the Spanish ecological transition minister Teresa Ribera and an army of security personnel. He had earlier given the keynote speech at the official inauguration of the event, where he talked about the 'very alarming' challenge of climate change, telling participants to 'feel proud of [their] achievements, however not content... we should not stop pushing even further'.

Portugal plans auctions to add 3GW of wind power by 2030

BERND RADOWITZ

ortugal will stage auctions to add about 3GW of wind by 2030, environment and energy transition minister João Pedro Matos Fernandes told the WindEurope conference yesterday.

The new additions will include onshore and offshore capacity, and bring the country's total wind base to 8-9GW, he said.

"The auction mechanisms will ensure rapid deployment of investments while maximising the benefits for consumers," added Matos Fernandes, who gave no further details of the plan.

Portugal had 5.4GW of onshore wind in place by the end of 2018, according to WindEurope data.

The nation also wants to boost its existing 570MW of solar to 7-8GW by 2030, Fernandes said. A 1.35GW solar auction is planned in a few months, with a second, 700MW PV round earmarked for January next year.

"Wind and solar are the most cost-efficient technologies [and] will be [the] priority" in the



country's efforts to double its installed renewables capacity by 2030, said Fernandes, adding that hybrid wind-and-PV plants could also play a role.

"These technologies have the advantage of complementing each other, providing a greater stability to the system, which can be expanded by providing storage capacity in order to increase the dispatchability of these kind of systems."

Lisbon plans to hold tenders for storage capacity "to ensure security of supply in a system with a very high percentage of intermittent renewables," the minister said.

Portugal in 2016 committed to ambitious 2050 clean-energy goals, including 100% renewable power.

Wind has been an important element of Portugal's industrial base since a cluster with production facilities for rotor blades, towers and generators began operating in 2007, representing investments of \notin 250m (\$214m) and creating 1,500 jobs. The construction of wind farms has since spurred another \notin 1.7bn of spending, the minister said. \square

Poland scraps retroactive wind cut ahead of 2.5GW auction

BERND RADOWITZ

Poland's wind industry has fought off plans for retroactive cuts to onshore support and is set for a 2.5GW auction this summer — the largest planned in Europe this year, *Recharge* has learned.

The latest government draft amendment to Poland's renewable energy act no longer includes plans floated last month for a retroactive cap on revenues from alreadyoperating wind farms, the Polish Wind Energy Association (PWEA) president Janusz Gajowiecki revealed to *Recharge* on the sidelines of the WindEurope conference yesterday.

"That has been cancelled. The wind industry has won this battle," Gajowiecki said.

Polish renewable-energy policy has been on a rollercoaster since far-right populists from the Law and Justice Party (PiS) won elections in 2015 and brought Poland's thriving wind sector to a near-standstill with a damaging turbine distance rule enacted the following year.

Although the distance rule remains, the government softened to onshore wind late last year with a highly successful 1GW tender, which saw average winning bids reaching a competitive 196 zloty (\in 46) per MWh.

The government intends to hold a second, 2.5GW onshore wind tender as early as July, although the PWEA believes a more realistic timeframe for the auction would be September.

The Polish government is also proceeding with plans for a dedicated offshore wind act, but has not set a date for its passage.

If the offshore legislation and a support mechanism were to be enacted this year, first power from wind farms in the Baltic Sea could feed into the Polish grid as early as in 2022, Gajowiecki added.

The Polish government also plans to auction 700MW in PV capacity. ⊡

3

ANDREW LEE

ajor UK renewables players are confident stockpiling will help them ride out any immediate border chaos resulting from a no-deal Brexit, the WindEurope conference heard yesterday.

Executives from turbine maker Siemens Gamesa and developer ScottishPower Renewables both said they have put measures in place after identifying crossborder logjams as the biggest short-term risk of a no-deal scenario — possibly as soon as 12 April because of political paralysis in the UK's parliament.

"The biggest risk is getting goods in and out of the country, getting them through customs, getting them through ports," said Clark MacFarlane, UK managing director for Siemens Gamesa, which brings in key components for its offshore-wind-turbine plant in Hull, northeast England.

"We as an organisation have put extra stock in the UK in order to put a mitigation on that."

Hazel Gulliver, director of policy and regulation at ScottishPower Renewables, which is developing major wind projects both on- and offshore, said the company's procurement strategy had been adjusted as part of its Brexit planning.

"Where's the biggest problem likely to be? At the border," said



Wind giants stockpile components to protect against a no-deal Brexit

Gulliver. "We implemented our own mitigation measures to make sure that what we did need was in the UK in the first three months of this year."

Uncertainty over the outcome of Brexit has not dampened enthusiasm for Britain's next Contracts for Difference (CfD) support auctions, Karl John, a renewable energy specialist for the UK Department of International Trade, told a panel on Brexit at the conference.

John said the offshore wind sector — which the UK government sees as a "jewel in the crown" of its energy policy — was "very, very buoyant", with interest in the May CfD round running well ahead of the pipeline on offer.

"I don't think we're seeing any attrition," said John, who stressed that the growth of the UK offshore wind sector is underpinned by the country's ambitious climate and emissions goals.

Open trade 'is vital to keep wind LCOE down', says TPI boss

BERND RADOWITZ

To continue to reap the benefits of cost reduction through a global supply chain, the wind industry must push for open trade policies, says Steve Lockard, chief executive of blade maker TPI Composites.

The wind sector will continue to bring down the levelised cost of energy (LCOE) through technological innovations such as larger turbine rotors, taller towers, and the use of more advanced materials or modular blades that ease transport, the event ambassador told the WindEurope conference yesterday. But for "deeply entrenched global supply chains... [and] world-class cost on a true global basis", trade policies must allow the wind industry "to continue to operate in that same world-class scale on levelised cost", explained Lockard, who is also the chairman of the American Wind Energy Association (AWEA).

Late last year, AWEA said import tariffs on Chinese equipment — threatened by US President Donald Trump — combined with already implemented tariffs on imported steel and aluminium could increase the LCOE at new wind farms by up to 10%. The trade conflict has already prompted companies to change their global sourcing strategies or at least plan to do so.

German-Spanish wind OEM



Nordex last year said it plans to tilt its supply chain away from China to avoid US import duties and is analysing the use of concrete or hybrid concrete-steel towers in the US in response to possibly higher turbine costs through steel tariffs. Similarly, GE Renewable Energy said in October that it was evaluating its global supply chain as it gets a significant volume of components from China.

On a more positive note, Lockard added that "most costeffective wind" power now beats the marginal cost of existing coal plants in the US and globally.

"That is a huge milestone," he said. ₪

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ANDREW LEE

orway will focus future onshore wind development on its central and southern regions, with most of the windier north ruled out because of poor grid access and the need to avoid conflict with indigenous reindeer herders who have accused the nation of human rights violations.

The Norwegian Water Resources and Energy Directorate (NVE) has proposed 13 areas deemed most suitable for new wind power, almost all in the southern half of the Nordic country.

"Despite the fact that many areas in northern Norway have the best production conditions for wind power, we propose to highlight most areas in southern Norway," said NVE. "This is because we have placed great emphasis on the consideration of Sami reindeer husbandry and limited network capacity in northern Norway."

Recharge reported earlier this year how Norway was the subject of a complaint to the UN Committee on the Elimination of Racial Discrimination over its approval of part of the 1GW Fosen wind complex.

Indigenous Sami reindeer herders claim wind development impacts crucial grazing grounds for their animals, disrupting a centuries-old element of their culture.

NVE said the 13 areas it has



Reindeer and grids mean Norway must face south for wind growth

identified balance "technical and economic considerations, and environmental and social interests". Although it would be possible to apply for a licence outside the designated zones if the plan is accepted by Norway's energy ministry, it would be more difficult to obtain one.

At the end of 2021, Norway will

leave the green certificate scheme it jointly operates with Sweden, leaving wind development to compete on price alone in a system that is already well-served with renewable power from the country's vast hydro fleet.

Norwegian grid operator Statnett said last year that despite having less windy conditions than

the north, southern Norway still has the potential for "significant" subsidy-free wind projects.

Hordaland, a county in southern Norway, is already the planned location for the 1.5GW Hordavind project, which would be Europe's largest single-phase wind farm if advanced by developer Norsk Vind Energi. 🖬

Corporate renewables enters new era as Lego buys PV developer

LEIGH COLLINS

The owner of the Lego Group is taking corporate renewables to the next level after acquiring a majority stake in the US arm of German solar developer Enerparc.

Kirkbi — the private investment and holding company owned by the family of Lego founder Kris Kristiansen — has been at the forefront of the global corporate renewables boom, investing in offshore wind projects as early as 2012, while the Lego Group

has been 100% powered by green energy since 2017.

Enerparc's American affiliate, Enerparc Inc, currently operates more than 100MW of PV plants in the US, and describes itself as a specialist in developing, engineering, building and operating utility-scale solar farms.

The size of the stake and the price Kirkbi paid for it has not been disclosed, but the companies say that Enerparc Inc's current management team will retain a minority stake in the business.



"The significant majority stake in Enerparc Inc gives Kirkbi a unique opportunity to take ownership in a company that has established an operational, commercial and scalable platform to bring solar power to many more Americans," said Thomas Lau Schleicher,

chief investment officer at Kirkbi. The company took a 32% stake in Germany's 312MW Borkum Riffgrund 1 offshore wind farm in 2012 for around €490m, and a 25% share in the UK's 258MW Burbo Bank Extension in 2016 for about €440m. 🗈

AFP/Getty



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HIGHLIGHTS OF THE DAY

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→ Individual session tickets are available at the registration desk!

Programme overview

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HIGH-LEVEL & PLENARIES	OPERATIONS & ENVIRONMENTAL DI MAINTENANCE IMPACTS, SOCIAL ACCEPTANCE & SPATIAL PLANNING	IGITALISATION FINANCE GRID & MARKET HEALTH & POLICY & INTEGRATION SAFETY AND MARKETS SKILLS	RESOURCE SUPPLY CHAIN TURBINE FLOATING WIND ASSESSMENT & LOGISTICS TECHNOLOGY
	09:00 - 10:00	System integration: the next frontier for wind energy?	Level 4 Auditorium 1
	10:00 - 10:45	Poster viewing	Level 3 Poster area
	10:30 - 11:00	Health & Safety programme kick-off	Safety, Skills & Training Zone, Exhibition Hall 3
	10:45 - 12:15	Global markets	Level 4 Auditorium 1
		Addressing the integration challenge: in the market and in the grid	Level 4 Auditorium 2
		Wind turbine and wind farm control	Level 3 Luxua 1
		Resource assessment - part 1	Level 3 Luxua 2
	11:15 - 12:00	The challenges of global training	Safety, Skills & Training Zone, Exhibition Hall 3
	12:00 - 12:45	How can training providers respond to the changing profile of technicians?	Safety, Skills & Training Zone, Exhibition Hall 3
	12:00 - 14:00	Lunch	Exhibition Hall 3
	13:30 - 16:00	GWO Stakeholder Forum	Safety, Skills & Training Zone, Exhibition Hall 3
	14:00 - 15:15	Financing offshore wind in an auction environment	Level 4 Auditorium 1
	14:00 - 15:30	Electrification of the heating sector - Coupling power and heating networks	Level 4 Auditorium 2
		Blades	Level 3 Luxua 1
		Resource assessment - part 2	Level 3 Luxua 2
	15:15 - 16:15	Poster viewing	Level 3 Poster area
	16:15 - 17:30	Finance and off-taker structures in a merchant world	Level 4 Auditorium 1
	16:15 - 17:45	Towards 100% renewables: market and system operation practices	Level 4 Auditorium 2
		Next-generation components for wind turbines	Level 3 Luxua 1
		Resource assessment - part 3	Level 3 Luxua 2

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HIGHLIGHTS OF THE DAY

WEDNESDAY 3 APRIL

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Social events



Spanish wine at AEE stand

12:00 AEE stand 1-E20

Join AEE for a taste of Spanish wine and Iberian ham while chatting about the Spanish wind industry.



Vortex stand party

Vortex stand 1-E44

16:00

Vortex will be hosting an Iberian ham tasting session accompanied by craft beer and table football!



Global Wind Organisation stand party

17:00

Safety, Skills and Training Zone Hall 3

Join Global Wind Organisation for a taste of the industry standard.



Gala Dinner

20:30 - 23:30

Guggenheim Museum, Bilbao The gala dinner is now sold out!

See the programme online: windeurope.org/confex2019/networking/#social-events

Side events

	09:00 - 12:15	Stakeholder workshop on Park Layout and Site Investigation	Level 5	Room 6
	09:00 - 13:00	LIFES50+ Final Event	Level 5	Room 4
	13:00 - 15:00	Navarra networking event	Level 1	Atrium 1
	13:30 - 15:00	Invest in Vietnam Workshop	Level 5	Room 7
	14:00 - 17:45	EPSRC Supergen Wind Hub	Level 5	Room 2
	14:00 - 18:00	Wind energy in Africa – Perspective for Mozambique, Kenya and Nigeria	Level 5	Room 5
	15:45 - 18:00	Impacts of auctions on wind energy financing	Level 5	Room 4
	15:00 - 18:00	A new chapter for wind in Poland	Level 5	Room 1.B

See the programme online:

windeurope.org/confex2019/networking/#side-events

Exhibition halls

HALL 1

Thought Leaders Forum

9:30-16:30

Offshore wind potential and sustainability



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See the programme online: windeurope.org/thoughtleaders

HALL 3

Safety, Skills & Training Zone

10:30-16:00

Health and Safety Programme

See the programme online: windeurope.org/trainingzone



In association

Saitec lands EU funds for 10MW+ floating wind design

DARIUS SNIECKUS

panish engineering consultancy Saitec Offshore has secured almost €2m from the European Commission (EC) to build a part-scale version of an innovative concrete floating wind turbine design that promises to have a "levelised cost of energy like onshore wind" when built at its full 10MW-plus size.

The EC funding, awarded under the Horizon 2020 scheme, will be put towards building a deploying a 1:6 prototype of its SATH (Swinging Around Twin Hull) design for a 24-month offshore testing programme to de-risk a 2MW demonstrator, known as DemoSATH, in Q3 2020.

"Through this project we want to de-risk the DemoSATH demonstrator and get a unit in the water, test assemblies and various concrete mixtures [for the hull] but also to accelerate the commercialisation process of the 10MW-plus model, as a way of tackling the past and the future at the same time," Saitec chief technology officer David Carrascosa tells *Recharge*.

"We are analysing three potential sites [for the part-scale SATH] at the moment," he adds. "We expect to make a decision [by June] for this stepping stone."

The flagship is slated to be commissioned in October, with Saitec currently in discussions with several turbine OEMs, though it is not yet disclosing a preferred supplier.

"This [EC] funding, of course, has an impact on our commercial activity we are involved in," says Carrascosa, pointing to the company's current tendering to deliver SATH foundations for 12MW turbines "on several sites in Europe and Asia".



The SATH design is based on a joined pair of cylindrical prestressed concrete hulls anchored to the seabed via a single-point mooring system that allows the unit to swing like a weathervane to face the wind. The concept has previously been put through an extensive part-scale testing campaign in wave tanks at the University of Cantabria's Instituto de Hidráulica Ambiental.

Recharge launches 2019 global floating wind prize

ANDREW LEE

Recharge, the global renewable energy news and intelligence platform, has unveiled the contenders for its second annual floating wind power award.

To be announced on the eve of FOWT19 in Montpellier, France on 23 April, the *Recharge Floating Wind Power Player of the Year* award will recognise a pioneer, innovator or influencer in the fast-emerging energy sector.

"When discussing the rapid progress of the global energy transition, there are few better examples than floating wind, which, when we launched *Recharge* in 2009, literally amounted to a single turbine moored off Norway, the Hywind Demo," said *Recharge* editor-inchief Darius Snieckus, who is convening FOWT19, where close to 1,000 delegates are expected.

"Today we have commercialscale projects being advanced off Europe, Asia and the US, next-generation designs moving towards testing, and even the World Bank aiming to underwrite projects in emerging markets such as Brazil, South Africa and elsewhere.

"And Ireland now has its flagship prototype project under way, while Greece is considering a first industrial-scale development."

Expectations that the global floating wind fleet could expand to as much as 15GW by 2030 could well be under-ambitious, Snieckus added. "The speed of



development we continue to see in the sector is awe-inspiring. And we are now seeing first projects where floating wind is being deployed in other sectors, including offshore oil & gas."

Last year, Finn Gunnar Nielsen, who led the R&D team at energy giant Statoil (now Equinor) that designed the Hywind Demo, was awarded the inaugural prize at a ceremony in Marseille, France. Recharge is now running an online poll, where readers can vote on a shortlist of candidates. This year's finalists include turbine designer and inventor Henrik Stiesdal; the US National Renewable Energy Laboratory's, principal offshore engineer Walter Musial; Ideol boss Paul de la Guérivière, and Yoshinori Ueda of the Japan Wind Power Association. □



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AN INVESTMENT IN KNOWLEDGE ALWAYS PAYS THE BEST INTEREST

Benjamin Franklin

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Batteries and offshore wind lead renewables price plummet

DARIUS SNIECKUS

enewable technologies' levelised cost of energy (LCOE) is continuing to fall, with battery storage and offshore wind showing the greatest improvements in competitiveness said Bloomberg NEF (BNEF).

The benchmark LCOE for lithium-ion (Li-ion) batteries has dropped 35% to \$187/MWh since the first half of 2018, while offshore wind's fell by 24% to under \$100/MWh over the same period, the analyst said.

Onshore wind and PV have also continued to lower their LCOEs, tumbling by 10% and 18%, respectively, to \$50/MWh and \$57/MWh compared to a year ago.

"Looking back over this decade, there have been staggering improvements in the cost-competitiveness of these low-carbon options, thanks to technology innovation, economies of scale, stiff price competition and manufacturing experience," said Elena Giannakopoulou, head of energy economics at BNEF. "Our analysis shows that the LCOE per MWh for onshore wind, PV and offshore wind have fallen by 49%, 84% and 56% respectively since 2010. Li-ion battery storage has dropped by 76% since 2012, based on recent project costs and historical battery-pack prices."

She noted the "most striking finding" in the BNEF report is the cost improvements in Li-ion

PV and onshore wind have won the race to be the cheapest sources of new 'bulk generation' in most countries

> batteries, which are "opening up new opportunities for them to balance a renewables-heavy generation mix".

Batteries co-located with PV or wind projects are "starting to compete in many markets and without subsidy" with coal- and gas-fired generation for dispatchable power that can be delivered on demand, said Giannakopoulou.

Tifenn Brandily, energy economics analyst at BNEF, added: "PV and onshore wind have won the race to be the cheapest sources of new 'bulk generation' in most countries, but the encroachment of clean technologies is now going well beyond that, threatening the balancing role that gas-fired plant operators, in particular, have been hoping to play."

Offshore wind has been

AVE helped by the scale-up of turbine technology and auction-style tenders for new capacity to create "sharp reductions" in capital costs that translate into an LCOE that has been slashed from over \$220/MWh five years ago to well under \$100/MWh today.

"The low prices promised by offshore wind tenders throughout Europe are now materialising, with several high-profile projects reaching financial close in recent months," said Giannakopoulou. "Its cost decline in the last six months is the sharpest we have seen for any technology."

SGRE to equip world's largest offshore wind farm in a lake

BERND RADOWITZ

Developer Windpark Fryslân has awarded a conditional contract to build a 383MW nearshore wind farm in the Netherlands that would be the largest yet to be constructed on a lake.

The deal for the project on the Ijsselmeer artificial lake went to Zuiderzeewind, a consortium of installer Van Oord and wind turbine OEM Siemens Gamesa Renewable Energy (SGRE).

SGRE had already been named preferred supplier for the €500m (\$564m) Fryslân project, which is supported by the Dutch province of Friesland. A final investment decision is expected to be taken in the third quarter of this year.

The contract signed in Amsterdam foresees the installation of 89 of SGRE's 4.3MW SWT-DD-130 turbines.

Construction is slated to start this year, with the wind farm expected to be fully operational by 2021.

The Fryslân project is independent of the Netherlands' ambitious national offshore wind programme, and instead part of the province of Friesland's own renewable-energy target of 530MW by 2020.

Van Oord is responsible for the design, manufacture and installation of foundations and cables, and will deliver the equipment to install the Siemens Gamesa turbines. 🖬







DARIUS SNIECKUS

ore than 300 US companies led by Google, Facebook, GM and Walmart have launched an expanded Renewable Energy Buyers Alliance (Reba), with the aim of bringing more than 60GW of new clean-energy production on line by 2025.

Originally founded in 2014 as a partnership between nongovernmental organisations the Rocky Mountain Institute, World Wildlife Fund, World Resources Institute, and Business for Social Responsibility, Reba now represents a group of corporate renewable energy buyers with annual revenues of \$1trn and 48TWh of electricity consumption, more than 1% of the country's annual total. "Every enterprise — whether

it's a bakery, a big-box retailer, or a data centre — should have an easy and direct path to buy clean energy. Ultimately, sourcing clean energy should be as simple as clicking a button," said Reba chairman Michael Terrell, head of energy market strategy at Google, which is now 100%

renewables-powered. Rob Threlkeld, global manager of sustainable energy at GM, added that the onus was on commercial

and industrial power consumers to buy renewables-sourced electricity on environmental grounds, pointing to the more than two billion tonnes of greenhouse gases generated by the sector last year.

"Mitigating these emissions is part of the reason why over 70% of Fortune 100 companies have set greenhouse gas emissions reduction targets or renewableenergy purchasing goals," he said.

"Reba's [re]launch demonstrates that large energy buyers from across every sector are committed

Every enterprise — whether it's a bakery, a big-box retailer, or a data centre — should have an easy and direct path to buy clean energy

> to doing their part to solve this problem."

GM announced last month it would buy wind power to green its facilities in Michigan, joining rival Ford in bringing renewables to the heartland of the US auto industry.

Reba's inaugural chief executive,

Miranda Ballentine, who recently wrote a column for Recharge on the second wave of US corporate renewables buyers, added: "Never before has such a diverse group of organisations, from every industry, come together to form

> an association with a single, marketfocused, missiondriven vision of a zero-carbon energy future."

US corporate wind and solar energy deals in 2018 set a single calendar-

year record at 6.43GW, doubling the previous high of 3.22GW in 2015, fueled by high-volume transactions from the likes of Facebook, AT&T, Walmart, ExxonMobil and Microsoft, according to the Business Renewables Center. 🖬

14

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Annual Floating Wind Power Player of the Year Award



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