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Staff top challenge for new US sector

The US offshore wind industry is primed to deliver on its multi-gigawatt promise despite confidence being knocked by permitting delays, IPF20 Livestream heard.

Philippe Kavafyan, CEO of turbine manufacturer MHI Vestas, told delegates on Thursday the necessary elements are there for the sector to succeed.

Consenting delays, caused by the Bureau of Ocean Energy Management's decision last year to undertake a cumulative study of all proposed east coast projects, have "calmed down" excitement.

However, Kavafyan is confident deployment will take off. "We are bullish about the US market," the boss said in an interview at this summer's final Livestream event.

"There is a 25GW pipeline to consider the US as a real market. The pipeline is not in question. It is big enough."

The Frenchman meanwhile said securing enough workers is a key task for developers. "Our challenge will be about people, people and people."

Everyone in the industry is likely to collaborate, including turbine suppliers, in order to be able to access people with the required skills.

"It is all about transferring the knowledge and people. The key element we should all have in mind is how we develop talent."

This should include having an inclusive and diverse workforce, he said. "I think having a graduate program is a necessity."

Kavafyan said MHI Vestas has recruited people in the US who are now receiving training in Europe. "I think this is the right way to prepare for the future," he added.

Furthermore, the entire value chain will need to be involved if US developers decide to use the next generation of turbines, he argued. This would be necessary to ensure consumers do not incur higher costs. "This is key to the success of the next step."

For the present, the turbine company CEO said Covid-19 impacts on offshore wind have been minimal.

"We have demonstrated we are quite resilient. We have been able to continue installing and constructing wind farms.

"We believe the offshore wind story is going to be part of the economic recovery. I think offshore wind is going to be at the center of discussions."

BULLISH: Business Network for Offshore Wind CEO Liz Burdock and MHI Vestas chief Philippe Kavafyan Screengrab: reNEWS

HOME ADVANTAGE *(clockwise from top left)*: Martin Hansen of Siemens Gamesa, Orsted's Grant van Wyngaarden, Matt Sellers of Kiewit and sourcing manager Senthil Baskaran Screengrab: Business Network for Offshore Wind

Equinor puts floating wind on its project menu

Equinor is looking at floating wind projects as part of its expansion in the US, IPF20 Livestream heard. p2

Secondary steel key to Orsted's local content

Orsted is aiming to deliver significant local content levels across its near 3GW US offshore wind portfolio by bringing tier two and three suppliers into the fray. p3

2021 promising to be the year of offshore wind

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Heavy-lift activities in clear but Jones Act fog remains

US lawmakers look set to ditch a proposed expansion of the Jones Act to cover heavy-lift operations at offshore wind projects, the August series of IPF20 Livestream has heard. p6

TRENDING ON reNEWS.BIZ

Vineyard and Mayflower Wind agree staging port leases

Vineyard and Mayflower Wind have signed lease agreements to use the New Bedford Marine Commerce Terminal as their primary staging and deployment base.
Click here

Orsted secures blessing to deploy Haliade-X at Skipjack

The Maryland Public Service Commission has approved Orsted's turbine selection for its Skipjack wind farm off the coast of Delaware.
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Consortium unveils NY offshore wind port upgrade

A New York consortium has unveiled plans for an offshore wind hub at the Port of Cortlandt. It is one of 11 projects competing for up to $200m in grants and loan funding to develop critical infrastructure to help deliver the state's 9GW offshore wind target by 2035.
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Mayflower taps OWC for engineering support

Mayflower Wind has signed a framework agreement with offshore wind engineering consultancy OWC to provide engineering support to the developer's 1.6GW project off Martha's Vineyard and Nantucket.
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Equinor puts floating wind on the menu

Equinor is looking at floating wind projects as part of its expansion in the US, IPF20 Livestream heard.

The Norwegian developer's New England market lead Elisabeth Treseder told delegates the company is awaiting further detail of future Bureau of Ocean Energy Management leases, which some predict will offer up sites farther from the coast.

"Floating offshore wind is part of our business strategy," she said. "I think we have some very exciting developments in California and Maine.

"They are areas that would be suitable for floating technology.

"We are waiting eagerly to see what the next steps will be from BOEM."

In the meantime, Equinor is continuing to develop its Beacon Wind project off the coast of New England. The Stril Explorer vessel started geophysical and benthic surveys last week.

Equinor said it is anticipating the site will be able to generate up to 2GW once operational. The developer plans to begin permitting in 2022.

Treseder said: "We view Beacon Wind as one of the projects that will be a key contributor to our global targets."

She added the company is looking for partners to address gaps in expertise and training "to ensure we have the workforce ready when we are ready to begin construction".

Equinor also has additional capacity that has yet to be developed within its Empire Wind lease in addition to the 816MW commissioned by New York in the state's first solicitation.

Lessons aplenty building the Coastal Virginia demo

Orsted is completing final cable burial and commissioning at Dominion Energy's 12MW Coastal Virginia Offshore Wind demonstration project *(pictured)*.

The developer, which hopes to launch full operations this autumn, said constructing the two-turbine wind farm has provided several lessons the industry can take forward,

"It's the first in US federal waters, which means the project used a different permitting process to the existing 30MW Block Island wind farm," said Orsted US chief operating officer David Hardy.

"This will help with the short-term challenge of getting the first utility-scale projects through the permitting process and into the construction phase."

Orsted said the demo, which features two Siemens Gamesa 6MW turbines on monopole-and-transition-piece foundations, also allowed the developer to test construction impacts in a controlled manner.

North America chief executive Thomas Brostrom said the company deliberately installed one foundation using a double bubble curtain and the other with a single screen. "This allowed us to get valuable data about the effectiveness of noise mitigation measures."

Photo: Dominion Energy

Training leg-up for union members

Labor union International Brotherhood of Electrical Workers has partnered with UK cable manufacturer JDR to create a training center in Massachusetts.

The $800,000 facility will offer the opportunity for members to train as offshore wind turbine technicians along with apprenticeship programs for new graduates, according to IBEW membership development lead Joe Casey.

"We want to open similar centers in Rhode Island and New Jersey and are looking to work with other supply chain companies on similar programs," he said.

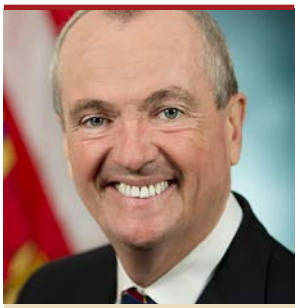
Shared grid 'essential' off east coast

A shared transmission network will be necessary in the long term for east coast states to achieve their renewable energy goals, according to New Jersey Board of Public Utilities president Joseph L Fiordaliso.

The state's second offshore wind solicitation will contain a requirement for the successful bidder to be open to joining a shared system in future, Fiordaliso said.

Massachusetts Clean Energy Center CEO Stephen Pike said all stakeholders will have to start working together soon in order to be able to meet market targets.

"If we want to go to a shared system we need to start planning now," Pike continued.



New Jersey Governor going all in for industry

New Jersey Governor Phil Murphy *(above)* is aiming to make his state the US hub for offshore wind.

Initiatives such as the New Jersey Wind Institute, which will coordinate offshore wind innovation in the state, demonstrate its commitment to the industry, he told IPF20 Livestream.

"We recognise that immediate action is needed to lay the groundwork for workforce development in this new sector.

"We have earmarked more than $4m to launch challenges and programs that will establish best-in-class wind organisation and wind turbine technician training programs right here in New Jersey," he said.

Murphy added that the New Jersey Wind Port project "would be the cornerstone of our economic recovery and our offshore industry".

"This project represents a once in a generation economic injection for our state with the potential to increase our GDP by over $500m each year."

Photo: NJ govt.

Secondary steel key to Orsted's local content

Orsted is aiming to deliver significant local content levels across its near 3GW US offshore wind portfolio by bringing tier two and three suppliers into the fray.

The Danish developer has already begun screening companies to supply components for turbine foundations including internal platforms, boat landings, anodes, cranes and ladders.

"These secondary steel components punch far above their weight when it comes to economic benefits, supply chain opportunities and job creation," senior supply chain development manager Grant van Wyngaarden told IPF20 Livestream.

Senthil Baskaran, a sourcing manager, told delegates secondary steel includes components made in concrete and other metals. Between 15% and 25% of the total spend on foundations goes on these parts, he added. "Secondary steel involves between 2500 and 3000 labour hours per foundation and it also encompasses companies working in multiple trades. It is at the centre of our local content strategy and is the first step in building a full-scale supply chain for offshore wind in the US."

Local content in the US context is defined as dollars spent and jobs created at a state level, said Baskaran.

Orsted is auditing different companies to supply five of its upcoming projects, which are all due online by 2024, comprising the 704MW Ocean Wind off Connecticut and Rhode Island, the 132MW South Fork and 880MW Sunrise Wind off New York, the 1.1GW Ocean Wind off New Jersey and the 120MW Skipjack off Maryland.

Baskaran said there are still several gaps in the US supply chain when it comes to delivering secondary steel for foundations. "One of the biggest is the lack of companies that are set up to do serial fabrication of parts.

"There are several very capable companies with lots of capacity but we need outfits that have historically built single-use parts to make hundreds of identical components," he explained.

US companies also lack familiarity with technical regulations from the European Standards Organisation and European Committee for Standardisation, which are used extensively across the offshore wind industry.

"Developers tend to use contract templates from the International Federation of Consulting Engineers, which are not commonly used in the US and can create confusion," he added.

NREL tracking skill-set needs for US workers

The National Renewable Energy Laboratory is working on a blueprint to ensure there are enough workers to fill the 88,300 posts the American Wind Energy Association estimates the offshore wind industry could create by 2030.

NREL said its 'Coordinated National Offshore Wind Workforce Roadmap' will provide a breakdown of what roles are likely to be needed and when.

"We all know the industry is poised for massive growth but it's a complex employment picture," NREL senior project leader Chloe Constant told delegates.

"There are over 100 positions associated with building a wind farm, with roles ranging from lawyers to welders."

Constant said the industry needs to collaborate on ways of tapping into the abundant experience in fields like manufacturing, construction, maritime industries and onshore wind.

"We need to transition existing skills into the sector, but developing a workforce is rendered more difficult by uncertainty around the exact size and timing of the US development pipeline," she added.

Recent industry feedback has already highlighted priority areas where native expertise is lacking.

"Critical wind jobs in the near-term include foundation design, offshore wind turbine technicians and civil engineers for port design," she said.

Constant did not reveal when the roadmap will be published but the document will also provide an inventory of existing US training facilities, courses and offshore wind standards.

She said the industry needs to settle on a training standard for workers going out to projects in US waters.

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2021 year of offshore wind

Liz Burdock *(left)*, chief executive of IPF20 host the Business Network for Offshore Wind, charts sector's impressive progress even with Covid-19

Offshore wind is the energy industry of the future. Its potential is limitless. Ever-advancing technology as well as partnerships and government support indicate that the US in particular has just cracked the surface of a booming blue economy.

Offshore wind has proven incredibly resilient to the ongoing economic crisis created by Covid-19, both in the US and globally. Offshore wind projects worldwide saw a record $35bn in final investment decisions so far this year, which offsets the declines observed in global investment in biomass, onshore and solar projects during the same period.

That's not to say 2020 has been smooth sailing. When the world economy shuttered in March, the industry in unison wondered would governments, particularly in the US, pause commitments and divert resources from offshore wind? The answer was a resounding no.

Through their policies, state leaders show they recognize that Covid-19 is a vital battle but climate change is a war we cannot put off.

Overall, US states have committed to more than 29GW of offshore wind. Earlier this month, the US entered the floating offshore wind race when Diamond Offshore Wind and RWE Renewables invested $100m in the University of Maine Aqua Ventus demo. By August 2021, the national offshore wind development pipeline will be over 15GW.

Meanwhile, the Coastal Virginia Offshore Wind project has stayed on schedule and on budget. An important triumph to note is that in early August CVOW withstood tropical storm Isaias with no issues, a positive indicator for turbines installed off the Mid-Atlantic coast. Elsewhere, seven US offshore wind projects have reached a critical milestone in the long permitting process with the submission of construction and operations plans to the Department of the Interior's Bureau of Ocean Energy Management. It is vital these projects receive approval to begin construction because it will unleash private investment into the US offshore wind market, creating jobs and supporting the economy.

BUSINESS NETWORK for OFFSHORE WIND

Timely permitting decisions are also key to the US securing manufacturing commitments, establishing its position as a global player in the offshore wind market, and reinvigorating our economy.

The industry and policymakers must meanwhile grapple with the tough conversations on floating wind, green hydrogen and green ports. For example, the design and construction of ports must anticipate future offshore wind technology changes. As individual turbine capacity increases, a port's design requirements from crane tonnage, soil load-bearing capacity to required pier length will change.

Another vital question the US must tackle is grid and transmission. One study forecasts an increase in transmission investment from $7bn to $10bn a year in the 2020s to as much as $40bn a year between 2030 and 2050 to satisfy new electric loads and to accommodate the changing generation mix. For every $1bn in investment, 13,000 new jobs are created.

Globally, more than 80GW of offshore wind will be operating by 2025. This striking statistic illustrates the pace and rapid expansion of the sector. We are confident 2021 will be the year of offshore wind and projects will see a permitting green light. All the market forces are pointing to a breakthrough in the US.

Although we may have to still work from home, and we are still not able to physically meet at industry events, we have adapted, we are resilient, and our industry is resilient. Great opportunities do not come along every day; recognize and seize them with every chance you get.

Offshore wind is a great opportunity. The Business Network for Offshore Wind is here to help you. We are here to connect you. We look forward to this new energy future. ■

IN BRIEF

■ The US Department of Energy is exploring the potential for large-scale green hydrogen production as part of the H2@Scale R&D programme.

DoE senior advisor Eric L Miller said the government project is examining production and storage technologies along with integration options for the gas.

Early studies on linking offshore wind and green hydrogen have underlined the technology's economic promise.

"Research shows transmitting the gas over long distances could cost around 10 times less than for the equivalent electricity, which is a really big economic benefit," Miller added.

■ The National Renewable Energy Laboratory is hoping to publish updated recommended practices for offshore wind regulatory compliance in 2021.

NREL offshore wind manager Walt Musial said the new guidance will "clarify regulatory requirements for developers, increase efficiency in the regulatory process and ultimately make offshore wind safer".

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Heavy-lift activities in clear but Jones Act fog remains

US lawmakers look set to ditch a proposed expansion of the Jones Act to cover heavy-lift operations at offshore wind projects, the August series of IPF20 Livestream has heard.

Congress was mulling extending the law that restricts overseas vessels from operating in US ports to turbine and foundation installation units working offshore.

"The changes would have forced any foreign vessels to secure a waiver before carrying out lifting operations but they appear to have been dropped," Charlie Papavizas, maritime partner at law firm Winston & Strawn, told delegates on 6 August.

Papavizas said policymakers still need to make Jones Act legislation more transparent. The current model of using foreign crane ships and US feeder vessels for turbine and foundation installation is "do-able" but questions remain for contractors and developers.

Jan De Nul jack-up Vole au Vent installed turbines at the 12MW Coastal Virginia demonstration project earlier this year after transporting the hardware from the port of Halifax, Nova Scotia, Canada.

"It is not clear to what extent existing legislation allows the installation vessel to unload containers, tools, people and other expendables onto the worksite and reload them back onto the vessel," he said.

Jones Act legislation does not prevent foreign-flagged cable-lay vessels from installing out of US ports but it will affect the way cable contractors bury and trench their wires, said Papavizas.

"The law says dredging must be carried out by US vessels and it has been determined that ploughing operations for cable installation are considered dredging." Contractors could be forced to find alternative ways of trenching and burying cable if the Act is not changed before the first projects start construction.

New proposals to modify the law to give clarity for the offshore wind sector have been advanced by US Senators Bill Cassidy and Sheldon Whitehouse.

"Developers need to make their voices heard and show support for this legislation. Even so, with Covid-19 ongoing and a general election due in November, it is unlikely anything is going to change before next year."

Orsted AUV dives in to assess risks to whales

Orsted has deployed an autonomous underwater vehicle for a two-year data gathering campaign to help developers understand how wind farms will impact endangered whales.

Researchers this month started operating a Slocum Glider AUV at the 1.1GW Ocean Wind project site *(pictured)*.

The company's US environmental manager Laura Morse told IPF20 Livestream the research project will help address "a range of developer and stakeholder needs about ecosystem monitoring".

A key concern is the way offshore wind development will affect North Atlantic right whales off the north-eastern seaboard. Morse said successive glider deployments will carry out passive acoustic monitoring of the whales and gather oceanographic data, also detecting tagged fish that swim through the area off New Jersey.

"The Slocum Glider is battery powered and can carry out missions between 30 and 40 days long," she said. "We have also installed two ocean buoys to help gather further information."

Orsted is conducting the research as part of the ECO-PAM R&D program alongside US academic and research institutions.

Morse said the initiatives show "incredible advancements" in technology can help boost developers' efforts to support wildlife conservation as they build out their portfolios.


Photo: Orsted

Technology can also smooth the consenting path by providing hard evidence of the collision risk turbines pose to birds, according to Julia Robinson Willmot, principal scientist at environmental consultancy Normandeau Associates

"We need a system that can study a US wind farm for a couple of years to better understand collision risks," she told delegates. Willmot said measuring campaigns to find more empirical data are underway.

VHF receivers have been installed on one of five GE Haliade 6MW turbines at Orsted's 30MW Block Island wind farm to count tagged birds.

Dominion Energy has meanwhile added bird strike detection systems to both Siemens Gamesa 6MW turbines at its 12MW Coastal Virginia pilot project.