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Domestic supply chain key to future growth

Building a US offshore wind supply chain is more critical than ever as the industry looks to bring online as many gigawatts as possible in the coming years, IPF 2023 will hear. **p2**

Floating wind industry needs new investment

Fresh investment and new thinking are required in the supply chain to ensure the US can deliver its floating offshore wind targets, IPF 2023 will hear. **p3**

The forum to forge supply chain links

IPF host Business Network for Offshore Wind's CEO Liz Burdock says its mission is to facilitate industry collaboration as sector works towards clean energy future. **p5**

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Cyberattacks pose rising threat

US offshore wind developers have been warned to guard against cyberattacks on assets as geopolitical tensions rise around the world. **p7**

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US offshore to thrive despite cost pressure

The US offshore wind industry can navigate the "unprecedented" economic headwinds buffeting the sector to deliver gigawatt-scale ambitions and a domestic supply chain this decade, IPF 2023 will hear.

Challenges facing the nascent market will come under the spotlight when 20 sector and government leaders take to the stage in Baltimore on Wednesday, at the main plenary session.

Jeff Grybowski, chief executive of developer US Wind and industry veteran, is among a panel that will discuss how the economic situation is threatening commercial-scale progress as rising costs and tightening supply chains are pushing developers, manufacturers, and suppliers to the brink.

Grybowski told reNEWS he believes policymakers understand that business shocks of the past year have put real pressure on the industry, and he remains upbeat about its prospects.

"All the developers have been working hard to explain to our partners in state and federal government the unique challenges that



CONFIDENT: Orsted chief David Hardy

Photo: Orsted

we face today with a very constrained supply chain. I am confident those partners will work with us to find solutions that will allow the industry to move forward," he said.

US Wind is "working every day to be more efficient and creative" on its projects, he added. "We are stepping back in a number of areas of project development and construction planning to rethink our previous assumptions. And that is working for us; we are finding ways to lower costs."

Orsted Americas chief executive David Hardy will speak on a later panel discussion during the plenary session regarding how the Inflation Reduction Act has the potential to drive the sector to new heights.

The Danish company is already in construction on its 132MW South Fork, which Hardy said is on schedule to be fully operational this year.

He remains confident despite booking a \$365m impairment on the 924MW Sunrise Wind project due to inflation, rising interest rates and higher prices in the supply chain.

"We remain committed to our projects and recently submitted bids for new ones in New York and Rhode Island, so we are confident we can deliver projects and expand our pipeline," Hardy said.

"Orsted, and the industry, continue to have discussions with policymakers to address the unprecedented and unexpected economic factors impacting the country's early offshore wind projects.

"We have seen incredible growth in the industry in the last few years. This week at IPF is a testament to the many businesses and jobs that offshore wind supports, and the tremendous opportunities that the future of the industry holds," he added.

"Together, we can serve as one strong voice to advocate for policies and solutions that support our local investments, create jobs and most effectively deliver on state and federal environmental and clean energy goals," said Hardy.

WEDNESDAY'S HIGHLIGHTS

Open for business

Business Network for Offshore Wind chief executive Liz Burdock is among the opening speakers at IPF 2023 in Baltimore, with a speech entitled: Think Big: Envisioning the 110GW Market to Encourage Macro-Breakthroughs.

0850, L4 Ballroom 3+4

Inflation busting

Industry leaders, including NYSERDA chief executive Doreen Harris and Aker Solutions renewables executive vice president Stephen Bull, discuss how to build a domestic supply chain during an inflationary period.

0900, L4 Ballroom 3+4

Inventive incentives

Passage of the Inflation Reduction Act will drive demand for offshore wind to new heights. GE Renewable Energy chief executive Jan Kjaersgaard and RWE US offshore director Sam Eaton will be among a panel that will address the topic.

0945, L4 Ballroom 3+4

Oceanfront property

Finding appropriate port facilities for offshore wind can be challenging, especially when available properties have been contaminated by previous operations. Panellists will review the engineering techniques required for the redevelopment process.

1100-1200, Track 08

Shaken, not stirred

Enjoy IPF's STIR – Socialise, Talk, Interact Reception – after a busy day. Drinks and light appetizers will be available.

1700-1900, L1 Exhibit Hall



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Domestic supply chain key to future growth

Building a US offshore wind supply chain is more critical than ever as the industry looks to bring online as many gigawatts as possible in the coming years, IPF 2023 will hear.

Burns & McDonnell offshore wind director Tony Appleton told reNEWS the issue is key to ensure the country can avoid any international constraints.

"This will help to make the US sector more independent, as well as ensuring the use of US labor and standards; ultimately, potentially leading to the US supply chain becoming a global exporter," he said ahead of the event.

Appleton will be speaking as part of the main plenary session on Wednesday on the 'Cutting Through the Head Winds: Building a

Domestic Supply Chain During Inflationary Times' panel.

Greg Matzat, offshore wind market director at COWI, a bronze sponsor at this week's IPF, said the most pertinent challenge for the floating sector is also building local supply chains and finding and constructing sufficient foundation fabrication, assembly and turbine integration port facilities.

He noted that on average the US would need to deliver approximately one 20MW turbine and its accompanying floating foundation every four days from the beginning of 2028 to the end of 2035 to hit the government's 15GW floater target.

It would be preferable if ports can accommodate the construction of any three of the major foundation

types – tension leg, spar and semi-submersible – as well as variations of each. This will require flexible port facility designs, he said.

Port upgrades will run into the hundreds of millions of dollars, a major investment that will need to be funded collaboratively from federal, state and private pots.

While there is work ongoing to develop facilities on both the east and west coasts, the US still needs several more sites and billions more dollars in investment if it is to be in the running to become the world leader in floating offshore wind.

■ Tony Appleton will also be part of the 'Investing in the Industry: Bidding Credits for Offshore Wind Lease Area Auctions' workshop, which will take place on Wednesday afternoon.

Pipeline of challenges in Gulf of Mexico

Developing offshore wind in the Gulf of Mexico will be a challenge due to several issues unique to the region, according to experts.

Cheryl Stahl, senior principal consultant for renewables at ABS Group, a platinum sponsor of IPF 2023, believes engineers will need to modify hardware designs.

The Gulf's relatively weak wind activity will be at odds with the potential intensity of the hurricane season, during which high winds will trigger turbine shutdowns.

As a result, the area needs units that are both typhoon-certified and optimised for

low average wind speeds, a combination that is not yet available.

In addition, engineers will need to develop foundations that are compatible with the near-shore Gulf's soft seabed, she said.

Engineers will need new designs that can provide reliable support despite the unusual surface geology.

Finally, they will need to develop methods to locate, monitor, and avoid oil wells and pipelines, according to Stahl.

In addition to its active oil and gas operations, the Gulf of Mexico has roughly 18,000

miles of decommissioned pipelines.

The Bureau of Ocean Energy Management awaits feedback on three potential lease zones, which could be auctioned later this year.

"While the proposal represents an important step toward embracing renewables for North America, seeing the projects through will have unique challenges," Stahl said.

"However, the renewable sector, in particular the offshore wind industry, is focused on problem-solving, and I have no doubt they will succeed in ushering in a more sustainable future."

New Global Offshore Wind Report

Make the most informed decisions in US Offshore Wind with access to a comprehensive full wind pipeline market analysis, data intelligence and industry insight compiled by our teams of experts.

Access the report



Wednesday Highlights



Massive monopiles

US tenders are specifying the largest monopiles ever seen in the global offshore industry. Panellists, including *Wood Thilsted* man Christian LeBlanc, will discuss how to tackle this new challenge through using an integrated approach and innovative methods for design.

1100-1200, Room 342

Seafood for thought

Join a briefing luncheon led by the *Clarksons Renewables* team and other industry leaders who will deliver a series of presentations about the global offshore wind vessel market and highlight some of the bottlenecks facing the industry.

1200-1330, Room 321-323

Gone fishin'

Panellists will share experiences and methods used to protect and improve the marine environment.

1430-1530, Room 342

The cable guys

This workshop will explore the technical and commercial drivers that will propel the industry to switch from 66kV to 132kV array cables, with contributions from *Aker Solutions*, *Siemens Energy* and *Nexans*.

1615-1715, Room 341

Get into the swing of things

Connect with industry colleagues for a fun night of food, drinks, and perfecting your golf swing!

Topgolf Baltimore, 2000-2300



TGS

4C Offshore

Floating wind industry needs new investment

Fresh investment and new thinking are required in the supply chain to ensure the US can deliver its floating offshore wind targets, IPF 2023 will hear.

Aaron Smith, chief commercial officer of foundation-designer Principle Power, will call for more backing to develop domestic companies.

Smith, who is speaking on a range of panels at the Baltimore showcase, told reNEWS now is the time to accelerate investments to enable the build-out of a home-grown sustainable supply chain.

The Principle Power man will share lessons learned from deploying the company's WindFloat foundations at several small commercial projects in Europe.

In addition, he will discuss real life operations and maintenance experience that can enable the US to move

directly to commercial-sized projects and scale up the supply chain with confidence.

Delegates will also hear that the race to develop bigger, more powerful turbines may hold back the US sector.

The industry needs predictability over power as the country looks to fully establish itself as a global wind power, according to the University of Maine's Advanced Structures and Composites Center director Habib Dagher (pictured), a leading figure in the sector.

"There is thinking that bigger is better, because you have fewer structures and less to maintain," he told reNEWS ahead of his attendance at IPF.

"But chasing bigger turbines does not allow us to make a lot of them."



When new designs appear on the horizon, serial production of current models becomes more difficult as investment is postponed in the wait for more powerful turbines to enter the market, Dagher continued.

"And there is a cascading effect because the bigger the turbine is, the bigger the cranes you need to lift them.

"You do not just have the turbine supplier chasing bigger turbines, but the entire supply chain behind them chasing bigger gear and port facilities to put them in the water," he said.

The federal government has set a goal of deploying 15GW of floating wind capacity and bringing costs down to \$45 per megawatt-hour by 2035.

"We are not going to (reduce costs) without stopping as an industry and industrialising the turbines that we have," said Dagher.

Revived grid legislation is key to offshore expansion

Revived legislation could eliminate key barriers and streamline approval for the interregional transmission lines necessary to harness offshore wind power.

The SITE Act, originally on the books before stalling in 2021, was reintroduced last week to the Senate by Democrats Sheldon Whitehouse and Mike Quigley.

It aims to amend the Federal Power Act to help expand the US's transmission infrastructure and create a new, single-agency transmission siting authority at the Federal Energy Regulatory Commission for high-voltage, interstate lines.

American Council on Renewable Energy executive vice-president of policy and programs Jose Zayas said: "These lines are often the most difficult to get approved due to the coordination required between multiple states, federal agencies, and landowners.

"Interregional transmission lines are critical to effectively and efficiently move electricity from our nation's richest resources areas to our large population centres with high electricity demand."

The US needs to more than double its historical rate of developing new grid to deliver plans to drastically increase renewables deployment.

Offshore wind in particular needs transmission infrastructure to transfer electricity from coastal regions inland, according to experts.

The issue will be discussed this week at IPF 2023 during several sessions, including one on adapting effective grid strategies for offshore wind, due to take place on Wednesday.

Chief executive of Belgian TSO Markus Laukamp and Equinor transmission strategy and policy lead Carrie Cullen Hitt are among the speakers.

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The forum to forge supply chain links

I am excited to welcome attendees, new and old, to our home city of Baltimore – Charm City – for the 2023 International Offshore Wind Partnering Forum (IPF).

Ours is the largest offshore wind conference in the Americas, and this year will also kick-off the Network's 10 Year Anniversary celebrations.

IPF continues to be the place where the entire supply chain can congregate to build partnerships and strike new business deals.

I am looking forward to hearing from industry leaders and government officials to discuss key issues we must tackle to ensure the steady growth of offshore wind and a domestic supply chain in the US.

This year's Forum is poised to be our best yet, with government officials including US Department of Interior Secretary Deb Haaland, White House Climate Advisor Ali Zaidi and Maryland Governor Wes Moore, who will speak on the importance of offshore



Business Network for Offshore Wind mission is to facilitate industry collaboration as sector works towards clean energy future, says CEO Liz Burdock (left)

wind to achieving long-term US climate goals.

Since our 2022 conference the US sector has made remarkable progress, thanks to the federal government, state governments, and industry all pushing forward.

The passage of the Inflation Reduction Act solidified the nation's commitment to offshore wind, providing a 30% tax credit for projects that gives developers long-term certainty to plan around, and a new manufacturing tax credit to incentivise supply chain investments.

The first commercial offshore wind projects – Vineyard Wind and South Fork – have begun construction, and the federal government held its first lease sales on the west coast, auctioning off up to 4.6GW of capacity.

Still, more needs to be done to ensure that the US is prepared to meet both federal and state level offshore wind production goals totalling 77.4GW.

This increased demand is great for the industry but, as it stands, the US lacks the capacity and capabilities. Only two wind turbine installation vessels designed for the American market are currently under construction, and research shows five would be needed for the US to meet its goals.

As other countries dramatically continue raising their targets, the international supply chain will be unable to fully support US demand. Therefore, it is critical that the US bolster installation and manufacturing capacity for turbine components.

These challenges can only be addressed by strengthening the offshore wind supply chain, which is what we aim to accomplish at IPF.

Companies must create strong relationships with their peers, not only to create business opportunities but also to share knowledge so that mistakes are not repeated. The problems we face are not caused, and nor can they be solved, by individual enterprises.

At IPF we will tackle workforce development, port development and vessel requirements, transmission advancement, regional collaboration, and more, as we work towards the common goal of a clean energy future.

Offshore wind presents a once-in-a-generation

opportunity for the US. This sector has the potential to provide well-paying jobs, revitalise manufacturing in coastal cities, increase the nation's security through a domestic power generation and manufacturing base, and provide all Americans with clean, affordable electricity.

This year's conference is the largest to date, with nearly 4000 attendees. As you participate in our plenary presentations, workshops, and other programmes, keep one word in mind: collaboration.

Use your time at IPF to build relationships with as many people as possible, even if the business prospects are not immediately clear. You never know who you will have an opportunity to work with in the months and years ahead.

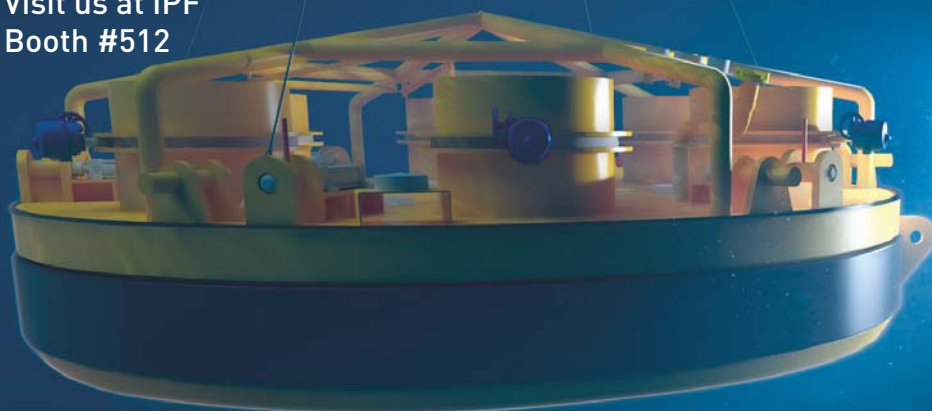
I invite you to join me at IPF to pause and see the great work we have done together, and lay the groundwork for a future we can all be proud of. ■

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THE INTERVIEW reNEWS



Setting the scene for IPF 2023, senior industry figures talk to reNEWS about vital issues shaping the sector. Today it is the turn of US Wind chief executive **Jeff Grybowski** (left)

Q What is your main message at IPF 2023?

A The US offshore wind industry is poised to take off in the next few years, but we need policy makers to show the same level of long-term commitment and pragmatism that developers have. We must ensure that the massive potential of the Inflation Reduction Act is fully achieved through regulatory implementation that actually works for offshore wind. We need permitting agencies to show urgency in their decision making. We need state governments and local utilities to be flexible and help the industry adjust to changing economic conditions.

Q How concerned are you that global cost pressures may slow the expansion of US offshore wind, given the warnings from several developers?

A I think that policy makers now understand that the economic shocks of the last year have put real pressure on our industry. All the developers have been working hard to explain to our partners in state and federal government the unique challenges that we face today with a very constrained supply chain. I am confident that our

state and federal partners will work with us to find solutions that will allow the industry to move forward.

Q How is US Wind dealing with cost pressures on its pipeline of near-term projects, and will it result in delays or cancellations of wind farms?

A We are working every day to be more efficient and more creative. We are stepping back in a number of areas of project development and construction planning to rethink our previous assumptions. And that is working for us, we are finding ways to lower costs.

Q What must be done to allow US projects with previously-agreed power purchase agreement contracts deal with the cost pressures they are facing?

A Every project is in a different position, but generally speaking we are all looking for our partners to work with us creatively. Some projects might need extra time, others might need to adjust their project plans, and all of that has to be done collaboratively with those who represent the ratepayers.

Q How has the IRA Act changed things for US offshore wind developers?

A The new tax credit provisions could be a very material benefit for the build-out of offshore wind at a big scale in the US. Whether they will really help depends on how that statutory language is interpreted and applied by the Treasury department. There is real complexity in the application of these tax credits, and that is especially true in a brand-new industry where we are all trying to do this for the first time together. The offshore wind sector needs a set of tax credit rules that will allow the entire industry to take full advantage of these new incentives. That will require Treasury to understand the unique challenges of our incomplete supply chain in the US today.

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Cyberattacks pose rising threat

Sector urged to raise cultural awareness including upskilling workforce in cybersecurity processes, writes **Michael Behr**

US offshore wind developers have been warned to guard against cyberattacks on assets as geopolitical tensions rise around the world.

The issue will come under the spotlight at IPF 2023 when a session on 'Managing Operational Technology (OT) Cybersecurity for Offshore Substations' takes place on Wednesday.

According to experts, as digitisation reaches all industries the threat posed by cyberattacks is growing, and the energy sector presents a tempting target for hackers.

The effects of disabling critical infrastructure mean that downtime is not an option, motivating operators to pay ransoms quickly.

In a University of Tulsa study, researchers picked open an unsupervised turbine's door in under a minute, connected to an unsecured server and accessed IP addresses for all turbines in the network.

Ahead of the US event this week, Cybersecurity strategist Jordan Schroeder told reNEWS how US offshore wind companies can ensure their operations are cybersecure.

"The challenge offshore wind has is that each turbine is essentially standalone, presenting its own attack surface and its own opportunity for cybersecurity weaknesses," Schroeder said.

"If you look at Shodan (a search engine for internet-connected devices), you can find wind turbines just connected to the internet with login prompts available."

The novelty of offshore wind and cybersecurity presents both a challenge and an opportunity.

"All of the infrastructure and equipment that supports offshore wind is relatively new, so they have the benefit of using more modern approaches to cybersecurity," Schroeder continued.

"But in general, industrial cybersecurity is a relatively

new problem." With the increased digitisation and interconnection between different sites, products and industrial contexts, there is no underlying secure platform protecting it.

"That means that you have got really old approaches to cybersecurity based on an industrial concept, not an IT concept. So a lot of renewable energy providers are catching up to where they need to be in order to be secure," he said.

There are several ways that the sector can develop a more effective approach to cybersecurity.

"Firstly, there are emerging standards and regulations in place to improve cybersecurity and to develop new capabilities," Schroeder noted. "Operators can take on that challenge, not as a compliance requirement but as the organisation's value to be as secure as possible."

"Step two is to reach out to those with expertise in OT

security to assess where they are and figure out a roadmap to close the gaps." However, with OT cybersecurity facing a major skills gap, hiring people can be a struggle.

"The third thing is to develop and invest in the people they have in order to upskill them in cybersecurity. That not only provides the skill set they need in-house, but it also boosts that internal culture that cyber risk is important," he continued.

With social engineering representing such a popular attack vector, cybersecurity cannot be treated as a technical discipline.

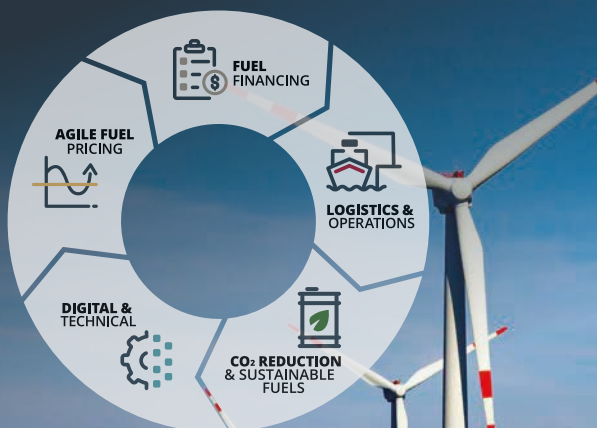
"Offer training to anybody who wants to take it within the organisation, even if it is not directly job-related."

"Getting that ball rolling and as many people upskilled as possible in this area will have a knock-on effect and raise the cultural expectation that cybersecurity is something that needs to be tackled," Schroeder said. ■

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