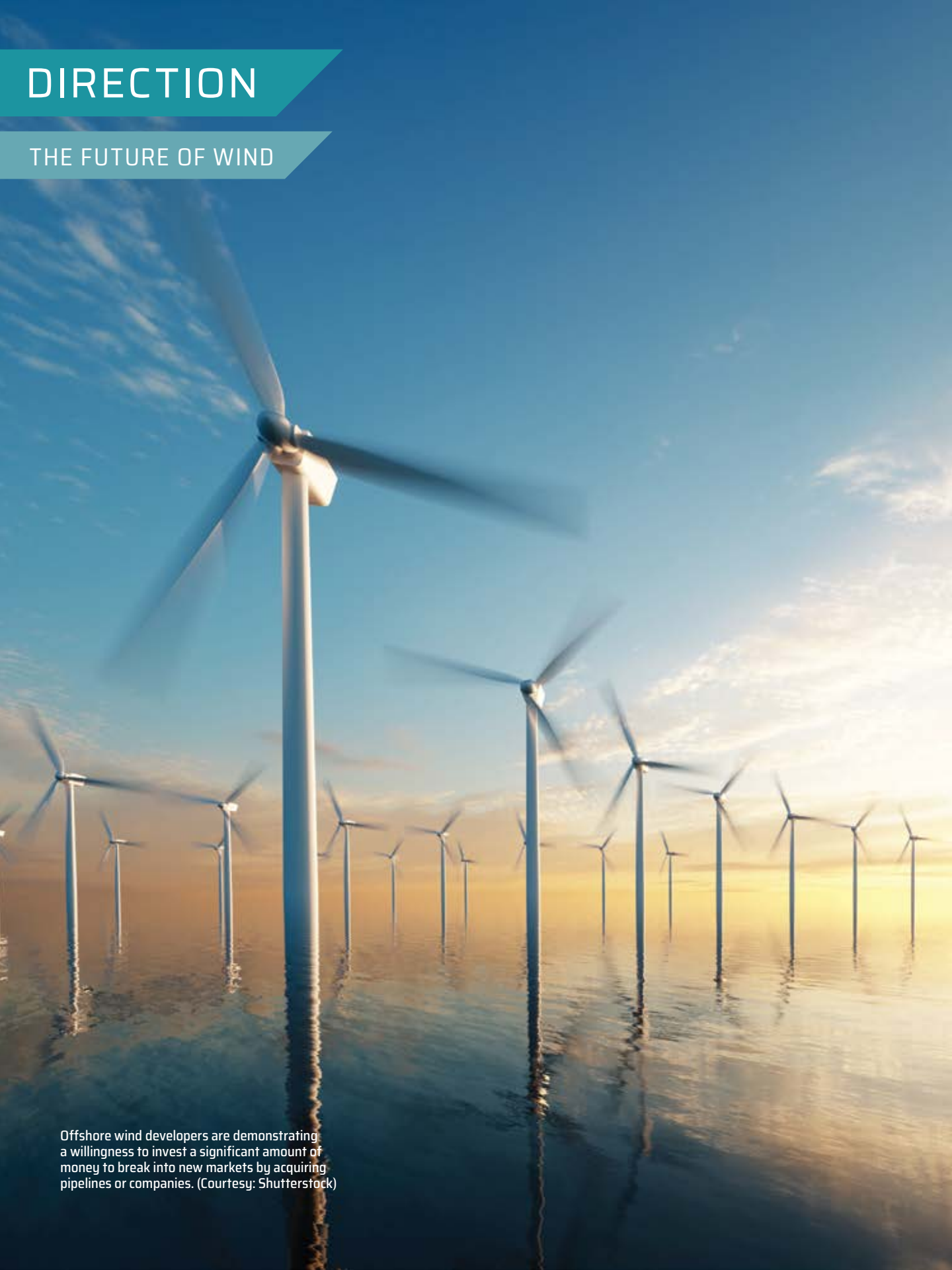


# DIRECTION

## THE FUTURE OF WIND

A photograph of an offshore wind farm at sunset. The sky is a gradient of blue and orange, with the sun low on the horizon. The water is calm, reflecting the sky and the wind turbines. The turbines are white with three blades each, and they are arranged in a grid pattern across the water. The foreground turbine is the largest and most prominent, with its blades slightly blurred from motion. The background turbines are smaller and recede into the distance.

Offshore wind developers are demonstrating a willingness to invest a significant amount of money to break into new markets by acquiring pipelines or companies. (Courtesy: Shutterstock)

# A global 261 GW wind portfolio hints at offshore wind evolution

“The growing 261 GW offshore wind portfolio is a clear testament to the prospects of offshore wind across the globe,” said Soeren Lassen, offshore wind analyst at Wood Mackenzie and author of a new report on offshore wind asset ownership, development and transactions and added that “the big are going to get bigger.”

With growth and ongoing consolidation as the backdrop, three other key trends are shaping offshore wind asset development and ownership.

First, leading European players are pursuing higher returns by breaking into emerging markets while Chinese companies command a large and growing domestic pipeline.

Second, the pool of offshore wind investors is being reshaped and expanded.

Third, the data reveals the rise of bidding consortiums in tenders and alliances among offshore companies.

Ambitious European companies are looking to emerging markets for partnerships and acquisition of pipelines and even companies to position themselves for future growth. Consequently, there was a spike in offshore asset transactions in 2018 of 19.5 GW – 69 percent of which came from emerging markets, such as the United States, Taiwan, Poland, and Ireland.

Emerging markets with maturing regulatory frameworks are the most appealing, though activity can begin well before the ink has dried on the page. Offshore wind developers are demonstrating a willingness to invest a significant amount of money to break into new markets, both by acquiring pipelines or companies. Both are on the table in some cases, as with Ørsted’s acquisition of U.S. offshore wind company Deepwater Wind.

While European players dominate the pursuit of new wind opportunities in the offshore wind industry globally, only one European company has secured a pipeline in China. Chinese state-owned companies have a corner

on the huge domestic 84-GW Chinese pipeline. The level of market consolidation is such that three out of the five largest offshore wind development portfolios are developed by Chinese companies.

Second, the pool of investors expands as institutional investors, APAC conglomerates, and oil and gas majors are increasingly flocking to offshore assets. The growing investment appetite is fueled by a better understanding of construction and development risks from institutional investors combined with oil and gas majors and APAC conglomerates’ eagerness to break into the offshore wind industry. This trend is also apparent in U.S. lease auctions, where both Shell and Equinor have secured capacity in two of the past three auctions.

The final set of trends in offshore wind ownership is the rise of tenders as well as the rise of alliances and bidding consortiums.

As the majority of demand moves into tenders and competition increases, analysts are seeing an increasing use of bidding consortiums in these tenders. In fact, almost 90 percent of companies participating in tenders in 2019 are expected to participate through bidding consortiums.

Moreover, alliances are increasingly being used by developers to break into, or fortify their position, in new markets – in 2018 alone, 15 alliances were formed.

**MORE INFO** [www.woodmac.com](http://www.woodmac.com)

## AWEA: Tax credit extension will drive U.S. offshore wind

The American Wind Energy Association (AWEA) issued a recent statement in support of two bills introduced in the U.S. Senate, which would both extend the federal Investment Tax Credit (ITC) for offshore wind energy. The legislation comes at a critical time for

offshore wind in America, as energy developers prepare to start construction on the first wave of large-scale projects.

AWEA supports two bills that would achieve tax policy parity for offshore wind. The Offshore Wind Incentives for New Development Act introduced by Senators Ed Markey (D-MA), Sheldon Whitehouse (D-RI), and Rep. Jim Langevin (D-RI), as well as the Incentivizing Offshore Wind Power Act introduced by Senators Tom Carper (D-DE) and Susan Collins (R-ME) would extend the ITC at 30 percent of the project’s total value for six years and eight years respectively. The biggest difference between the bills relates to how they are positioned in the tax code.

Promoting investment in offshore wind will strengthen and diversify American energy production. With world-class resource potential off the East Coast, West Coast, and in the Great Lakes, offshore wind is well-suited to meet consumer demand for large amounts of reliable clean energy near America’s largest population centers.

There’s also a huge opportunity for U.S. supply chain businesses, including those with experience in offshore oil and gas, to construct and service



Promoting investment in offshore wind will strengthen and diversify American energy production, AWEA says. (Courtesy: AWEA/ Daniel Turner)

offshore wind farms. According to the University of Delaware's Special Initiative on Offshore Wind, building 18.6 GW of offshore wind capacity by 2030 would create a nearly \$70 billion opportunity for businesses in the industry supply chain. And investing in offshore wind at scale will help revitalize coastal infrastructure and create thousands of high-skilled, well-paying careers for Americans.

**MORE INFO** [awea.org](http://awea.org)

## U.S. offshore CEOs call for supply hubs to beat competition

The U.S. offshore sector must create regional East Coast supply chains and public-private initiatives that accelerate training and port investments to ensure long-term competitiveness, leading developers told the U.S. Offshore Wind 2019 Conference.

New Jersey's recent decision to select Ørsted's giant 1.1 GW Ocean Wind project for its first large-scale facility highlights the rapid growth taking place in the U.S. offshore wind sector.

The 800 MW Vineyard Wind 1 and 2 project in Massachusetts will dominate installation activity in 2020-22, but deployment will rapidly spread to other states. By 2023, annual U.S. offshore installations are forecast to hike to 1.8 GW and remain between 1.2 GW and 2.2 GW between 2024 and 2030, according to BloombergNEF.

European offshore wind specialists have flocked to the emerging U.S. offshore wind market, partnering with U.S. firms to gain a competitive edge.

European project learnings have sliced prices and boosted demand for U.S. projects. Contracted U.S. offshore wind capacity is forecast to rise to about 4 GW by the end of 2019, the University of Delaware said in a recent report. A further 5.5 GW of new capacity is expected to be procured in 2020-2022, followed by 6.4 GW in 2022-2025, it said.

Growing demand from state authorities and utilities is supporting the development of a U.S. offshore wind



U.S. East Coast developers want to use multi-state supply networks to optimize growing project portfolios. (Courtesy: New Energy Update/Sanderstock)

supply chain but challenges remain, leading developers told the conference in Boston on June 10.

To become competitive, the U.S. offshore wind sector must take a wider regional approach to supply chain build-out and work with U.S. institutions to create hiring and port infrastructure solutions, developers said.

The Vineyard Wind project, co-owned by Avangrid Renewables and Copenhagen Infrastructure Partners represents the U.S.' first large-scale offshore wind project and is made up of two 400 MW units.

In July 2018, the project partners secured 20-year power purchase agreements (PPAs) with Massachusetts electric distribution companies (EDCs) at starting prices of \$74/MWh for unit 1 and \$65/MWh for unit 2. Taking into account tax credits and additional revenue streams, the levelized revenue of energy (LROE) for the entire project is estimated at \$98/MWh, competitive with some European projects despite the lack of local infrastructure, the U.S. National Renewable Energy Laboratory (NREL) said in a report.

The Vineyard Wind project will install 9.5 MW MHI Vestas turbines, the largest capacity turbines currently available on the market. Turbine capac-

ities are continuing to rise as developers seek to boost revenue and reduce the levelized cost of energy (LCOE).

MHI Vestas recently opened its first U.S. office in Boston, and the company is planning to hire about 40 technical staff in the U.S. ahead of turbine installation in 2021, Philippe Kavafyan, CEO, MHI Vestas, told the conference.

"We are gearing up," Kavafyan said. "The first challenge is to ramp up and bring up to speed with the right training, the technicians we will need to drive the construction phase, and the services phase of this project."

Training will be conducted at European projects this year, he said.

The strong U.S. labor market is creating hiring challenges, and offshore operators will need to work with colleges, unions, and state and federal governments to implement efficient training programs, said John Hartnett, CEO of Mayflower Wind, a joint venture by Shell and EDP Renewables.

"Finding staff for our companies in the front-end development and execution phases is extremely challenging — there is competition within the industry as well as competition across all industries," Hartnett said. ↘

**MORE INFO** [www.newenergyupdate.com](http://www.newenergyupdate.com)