

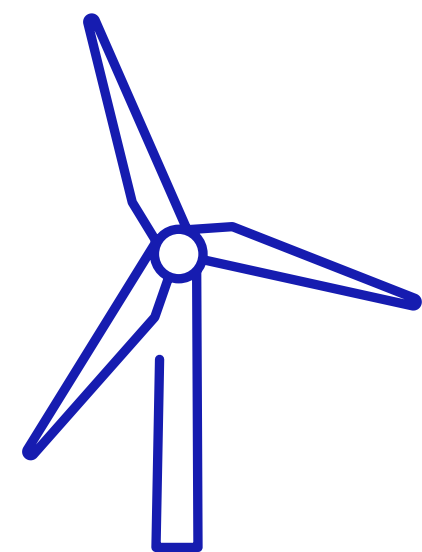


CROWLEY Insights

Paving the Way for U.S. Offshore Wind Energy

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Powering up for the offshore wind revolution



By 2030
55,000
jobs could be created by
the offshore wind build-out

The tax incentives in the Inflation Reduction Act are at last kickstarting the development of wind farms at sea that can generate cheap, green power. But a vast infrastructure buildout will be needed to meet the ambitious target of generating 30 gigawatts of electricity from offshore wind by 2030.

Significant investments are needed in the domestic maritime industry, port terminals, energy transmission, and manufacturing to ensure these billion-dollar projects deliver maximum benefit to the U.S. economy.

The U.S. has been slow to tap wind offshore; tiny Denmark has 55 times the offshore wind capacity of the U.S. Yet offshore wind has an important advantage over land-based wind

power such as the huge wind farms scattered across the Great Plains; as any mariner will testify, it's usually more windy at sea.

The current administration is giving the industry a big push by opening new coastal areas for development, revising regulations to streamline the permitting process, and publishing a detailed roadmap for the buildout of the supply chain to serve offshore wind. Combined with the \$500 billion Inflation Reduction Act, it aims to give a massive boost to clean and cheap energy.

The U.S. National Renewable Energy Laboratory said in January that getting to 30 gigawatts by 2030 could create as many as 55,000 jobs in manufacturing and supply chain.

"It will take public and private partnerships among the industry and states to really move offshore wind forward. To reach our full potential in the U.S., the commercial sector and the states need to think regionally in order to leverage the resources needed to deliver wind parks in the most economical and effective manner," said Bob Karl, senior vice president and general manager of Crowley Wind Services. ▶

Mr. Karl said states' specific interests have to be taken into account, and Crowley has seen benefits of working with the Commonwealth of Massachusetts, for example. But local initiatives must also connect with Federal ones, such as the seabed leases that allow new farms to be built.

There are currently only two operational wind farms in U.S. waters with a combined peak output of 42 megawatts, just 0.14% of the 2030 target. But two commercial-scale projects are set to go online in the next year, adding another 932 MW of wind energy capacity. Another 18 projects are in the permitting phase. If all of these are completed, the U.S. could be producing 40 GW of energy from offshore wind by 2040, according to the Department of Energy, enough to power around 11 million homes.

One of the obstacles to reaching the target is water transportation. Deploying the massive structures out to sea—some are twice the height of the Statue of Liberty—requires a fleet of specialized vessels (see data panel). ▶

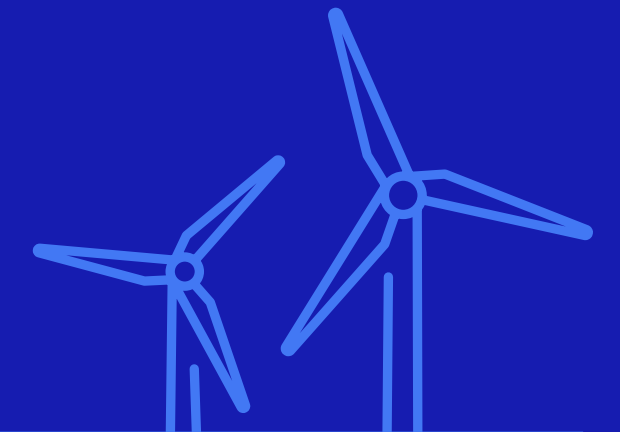
Stats in focus

30 gigawatts
of offshore wind turbines would power...

11 million homes
with cheap, renewable energy

But to make it happen by 2030 the U.S. would need...

More than **2,100** wind turbines



Up to **6** installation vessels

Up to **6** heavy lift vessels

4 to 8 U.S.-flagged feeder barges

34 new turbine factories

8 ports equipped to assemble turbines on the East Coast

2 specialized ports to assemble floating turbines on the West Coast



Under the 1920 legislation that supports the domestic maritime industry, nicknamed the Jones Act, much of this fleet will be built in the U.S. and staffed by American mariners. Domestic shipyards are getting orders for large barges and service operations vessels (SOVs) to support offshore wind farms, such as transporting maintenance workers and giant turbine blades to the sites.

A resurgence of U.S. shipbuilding for the offshore wind sector — such as Crowley’s service operations vessel (SOV), being built for Siemens Gamesa — is a prime opportunity and

benefit of both the IRA and the Jones Act in both advancing wind energy and the American maritime industry.

“Having operational partners across the industry will help drive costs out of the projects while allowing us to solve problems faster and better serve our customers. Collaboration will help spur the innovation we need for wind terminals, vessels and digital technology that will help pave the path forward for offshore renewable energy,” said Mr. Karl. Crowley is focused on providing its maritime, terminal infrastructure and logistics expertise through business alliances that spread costs and risks while advancing offshore wind projects.

Collaboration is particularly critical to making offshore wind project economics work because of high inflation, rising interest rates, high steel costs and a tight labor market.

These all feed through to project economics. The Department of Energy predicts that improved supply chains, larger turbines and other factors will drive down the cost of wind energy. For instance, the floating turbines planned for the West Coast, needed because of the deep water, would have generated power over their lifetime at \$207 per megawatt hour if constructed in 2021. By 2035 the DOE estimates offshore floating wind turbines will produce a megawatt for just \$64. This will mean American consumers and businesses will get clean energy at substantially lower prices.



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Bob Karl,
Senior vice president and general manager,
Crowley Wind Services

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[Crowley's Role in Making Offshore Wind a Success](#)

[A Supply Chain Road Map for Offshore Wind](#)

[Offshore Wind Provisions in the Inflation Reduction Act](#)