

## US Offshore Wind Poised For Growth, But Challenges Remain

By **Tyler Williams** (June 4, 2021, 3:02 PM EDT)

Historically, offshore wind has made up a very small percentage of America's total electricity generation portfolio. The winds of change are blowing, though, as the Biden administration's proposed American Jobs Plan, among other federal actions, signals a new commitment to harnessing this renewable energy source.

In the American Jobs Plan, the administration explains that one of its goals is to "[e]stablish the United States as a leader in climate science, innovation, and R&D." As part of this effort, the administration has vowed to invest in demonstration floating offshore wind projects.



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This is not the only recent federal action that has signaled Washington's newfound support for offshore wind. In December, Congress extended investment and project tax credits for offshore wind projects. The next month, the administration summarized a collection of federal actions underscoring its commitment to create 30 gigawatts of electricity via offshore wind by 2030.

Government actions already have delivered impressive early progress toward this goal. The U.S. Environmental Protection Agency recently authorized the construction and operation of the Vineyard Wind Offshore Wind project, which will generate 800 megawatts of electricity off the coast of Massachusetts.

Additional projects are currently in the environmental review process, including a project off the coast of New Jersey, which could generate 1,100 MW, and a project off of Rhode Island, which could generate up to 880 MW. More projects are likely. In 2019, the Bureau of Ocean Energy Management, or BOEM, released a statement explaining that it had "15 active commercial leases for offshore wind development that could support more than 21 gigawatts of generating capacity."

While states up and down the Atlantic coast have seen a flurry of recent activity, states along the Pacific coast promise to play an important role in achieving the administration's goals. California, in particular, appears well positioned to become a leader in offshore wind.

A recent study estimates that California has over 200 GW of potential offshore wind capacity, 8.4 GW of which exist in current BOEM "call areas" off of California's central and northern coast. For reference, the California Energy Commission estimated that in 2018 California had approximately 80 GW of electric generation capacity installed across the state. These numbers make it clear that offshore wind in

California could go a long way toward meeting the Biden administration's generation target.

Offshore wind is now poised to play an important role meeting state emission reduction targets, including California's goal of achieving carbon neutrality by 2045. After all, it is a natural complement to California's robust solar generation: It picks up in the evening when the sun goes down, and remains a strong resource overnight. Offshore wind therefore provides a pathway to round-the-clock electricity from renewable resources.

Despite the fact that offshore wind has not yet been utilized in California, a recent joint energy agency study concluded that California will need to harness at least 10 GW of offshore wind to achieve carbon neutrality by 2045. Some do not want to wait that long, and are considering aggressive intermediate targets for offshore wind generation. A previous version of California A.B. 525, proposed formal offshore wind goals for the state, including 3 GW by 2030 and 10 GW by 2040.

Just last month, California and the federal government signaled how serious they are about harnessing this renewable resource to achieve their respective goals. On May 25, Gov. Gavin Newsom and the Biden administration announced plans to sell offshore wind leases in two of the three existing BOEM call areas: large parcels in Morro Bay and off the coast of Humboldt County.

It is estimated that placing turbines on floating platforms 20 to 30 miles off the coast in these areas could generate a total of 4.6 GW of electricity — enough to power 1.6 million homes. Officials are optimistic that the lease sale will occur in 2022.

Despite the state and federal optimism, there are some obstacles that will need to be addressed. In addition to concerns from environmentalists and the fishing industry, some of these concerns include the following.

### **Design Challenges**

The areas that have the greatest potential for offshore wind in California are much deeper than their Atlantic counterparts. This being the case, the turbines cannot be mounted on the seafloor, but instead will need to be on floating platforms.

This technology is currently expensive, but the rapid technological advances in Europe's offshore wind industry could be a reason for optimism.

### **Ocean Use Conflicts**

Historically, the U.S. Navy has voiced its concerns about offshore wind farms in California causing issues with the Navy's readiness drills along the coast. The Navy has recently changed course, however, and has explained that it is willing to coordinate regarding the siting of a wind farm in Morro Bay.

### **Transmission Capacity**

Because offshore wind farms will be located in federal waters several miles off the coast, transmitting the generated electricity will require the construction of new transmission capacity, including seafloor transmission lines that span multiple miles. These lines will then need to connect to the existing onshore grid.

Helpfully, two BOEM call areas in California — Morro Bay and Diablo Canyon — have existing transmission infrastructure that could provide potential grid connection points for electricity generated via offshore wind: a nuclear plant slated for retirement in Diablo Canyon, and a retired power plant in Morro Bay.

### **Installation Bottleneck**

As some have pointed out, a century-old law, the Jones Act, poses logistical issues for the installation and maintenance of offshore wind turbines. The Jones Act limits the transportation of merchandise by water between U.S. ports to vessels that are built in the U.S., registered in the U.S. and owned by a U.S. citizen.

But the installation of turbines requires specialized ships that the U.S. does not have. For its part, the administration sees this as an opportunity as much as an obstacle. It has noted that the construction of a new fleet will be a key source of union jobs.

The administration recently emphasized that offshore wind has already generated jobs in onshore supply chains, including in the steel industry and shipyards as the U.S. constructs its "first Jones Act compliant wind turbine installation vessel." One report describes construction of that vessel, the Charybdis, as generating 800 jobs in a Brownsville, Texas, shipyard that has previously produced offshore oil rigs.

Time will tell whether 30 GW within 10 years is achievable, given the current obstacles. But the recent pivot of major oil producers to offshore wind bodes well. The oil majors have decades of experience bringing complex offshore projects to fruition, and access to both the capital and supply chains needed to build offshore wind capacity at scale.

The administration's commitment to supporting offshore wind development may therefore provide a unique opportunity for it to partner with incumbents from the fossil fuel industry in meeting its ambitious job creation and emissions reduction goals.

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