# Offshore Wind is Blasting into the United States

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*As climate change mitigation continues to increase in priority, government and private sector developers are turning to offshore wind to generate green energy. U.S. offshore wind capacity lags far behind other countries, including China, Germany, and the United Kingdom. This executive briefing reviews offshore wind capacity in the U.S., global offshore wind capacity, and challenges to increasing capacity in the United States – including local community support, the Jones Act, rising interest rates, and supply chain issues.*

Current offshore wind capacity in the United States is 42 megawatts (MW), but new projects represent significant growth in the U.S. offshore wind industry (table 1).[1] With these investments into U.S.-based offshore wind projects, the United States is making progress towards the goal of reaching 30 gigawatts (GW) of offshore wind energy capacity by 2030.[2] The Bureau of Ocean Energy Management (BOEM) is working to lease areas in the Atlantic Ocean, off the coasts of California and Oregon, and in the Gulf of Mexico – increasing potential U.S. offshore wind capacity to over 40 GW and potentially positioning the United States to be the second largest country in offshore wind capacity.[3] In 2022, the largest exporter of wind-powered generating sets, blades, and hubs to the United States was China.[4]

**Table 1:** Examples of Offshore Wind Projects in Progress in the United States

| Name of project | Offshore location | MW capacity | Developer(s) | Expected completion |
|---|---|---|---|---|
| **Sunrise Wind** | New York | 924 MW | Ørsted (Denmark) with Eversource (U.S.) | 2025 |
| **Vineyard Wind 1** | Massachusetts | 800 MW | Avangrid Renewables (U.S.) and CIP (Denmark) | 2023 |
| **Revolution Wind** | Rhode Island | 400 MW | Ørsted (Denmark) with Eversource (U.S.) | 2025 |
| **South Fork Wind** | Rhode Island and New York | 132 MW | Ørsted (Denmark) with Eversource (U.S.) | 2023 |

Source: Compiled by USITC Staff.
Note: This table is not an exhaustive list of current U.S. offshore wind projects. As of August 2023, there are 34 active wind leases executed by BOEM; projects have expected completion dates from 2023 to 2035. CIP = Copenhagen Infrastructure Partners.

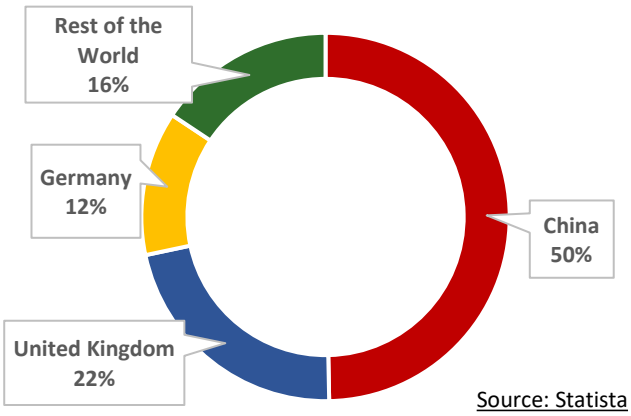
## Global Offshore Wind Capacity

The United States is not the only country turning to offshore wind to help accomplish renewable energy goals; China (31.4 GW), the United Kingdom (13.9 GW), and Germany (8 GW) are world leaders in offshore wind capacity (figure 1).[5] Globally, offshore wind capacity reached 63 GW in 2022. By 2030, China, the UK,

[1] There are two operating U.S. offshore wind farms: Block Island Wind offshore Rhode Island (30 MW) and Coastal Virginia Offshore Wind offshore Virginia (12 MW); U.S. Department of the Interior (DOI), "Biden-Harris Administration Approves", July 5, 2023; U.S. Department of Energy (DOE), "Offshore Wind Market Report", 2022.
[2] 30 GW of offshore wind capacity is enough to power 10 million homes a year and avoid 78 million metric tons of carbon dioxide emissions. Developers will need to install more than 2,000 turbines to meet this goal. The White House, "Fact Sheet: Biden-Harris", September 15, 2022.
[3] BOEM is within the U.S. Department of the Interior and is responsible for overseeing U.S. offshore wind energy development; BOEM, "Renewable Energy", accessed August 1, 2023; DOE, "Offshore Wind Market Report", 2022.
[4] Wind-powered generating sets (8502.31.00) includes nacelles and components; the primary exporters to the U.S. are China, India, and Spain. Other engines and motors (8412.90.90) is a broad category that includes non-wind goods. However, it includes blades and hubs; the primary exporters to the U.S. are China, Mexico, and India.
[5] Statista, "Offshore wind energy capacity," April 14, 2023.

and Germany are aiming to achieve 1,200 GW, 40 GW, and 20 GW of installed offshore wind capacity, respectively. Leading offshore wind developers include Ørsted (Denmark), Vattenfall (Sweden), Iberdrola (Spain), Innogy (Germany), and Shanghai Electric (China).[6]

**Figure 1:** Global leaders in offshore wind capacity, 2022




Source: Statista

**Challenges to Increasing Offshore Wind Capacity in the United States**

To meet U.S. offshore wind capacity goals, developers must overcome several challenges. Developers will need to secure permits, raise support from local communities and conservationists, build specialized ships capable of laying subsea cables, and secure access to inputs as well as overcome supply chain constraints.[7]

Raising support from local communities, tribal leaders, conservationists, and oceanfront landowners has a history of failure for offshore wind developers. In 2001, developers proposed the Cape Wind project in the Nantucket Sound; this offshore wind farm had the proposed capacity of 468 MW.[8] Opponents to the project argued that the turbines would negatively impact tourism, property values, and local wildlife. After over 15 years of legal battles, wildlife studies, and mediated discussions, the Cape Wind project was scrapped due to a lack of support from local communities.[9]

Another potential challenge to offshore wind development is the Jones Act, a 1920 law that requires U.S.-built and registered vessels operated by U.S. citizens or permanent residents to ship cargo between U.S. ports.[10] This poses an issue for wind turbine installation in particular, as there are no U.S.-built ships capable of installing the necessary components for offshore wind turbines. However, the first Jones Act-compliant wind turbine installation vessel is currently being built in Brownsville, Texas and contracted for the Revolution Wind and Sunrise Wind projects.[11] Currently, developers are using Jones Act-compliant "feeder" barges to ship wind inputs from domestic ports out to project sites and transferring inputs to foreign vessels capable of turbine installation.[12]

In October 2023, Ørsted announced the cancellation of offshore wind projects offshore New Jersey: Ocean Wind I and II.[13] The announcement came nearly one month after Avangrid announced the termination of the Park City Wind project offshore Connecticut.[14] The projects were expected to provide New Jersey and Connecticut residents with more than 3 GWs of energy. Ørsted and Avangrid cited supply chain issues and financial constraints – including rising inflation and interest rates – as the reasons for cancellation of the projects.[15]

[6] Global Wind Energy Council, "Global Wind Report 2023," March 27, 2023.
[7] Storrow, "How to Build an Offshore Wind Farm", October 15, 2021.
[8] National Geographic, "Case Study: Cape Wind," May 20, 2022.
[9] Talgo, "Controversial Cape Wind Project," January 23, 2018.
[10] Manno, "Biden Wants to Increase U.S. Offshore Wind Energy," November 23, 2021.
[11] The ship, the *Charybdis*, is being developed by Dominion Energy and is expected to be completed in 2024.
[12] Shumkov, "Ørsted to charter US," June 1, 2021.
[13] Ørsted, "Orsted Ceases Development of Ocean Wind 1 and Ocean Wind 2," October 31, 2023.
[14] Mahony, Edmund, "Avangrid pulls cancels CT offshore energy project," October 3, 2023.
[15] Parry, Wayne, "Orsted scraps 2 offshore wind power projects in New Jersey," October 31, 2023.