

RECHARGE

August 25, 2023

US climate law crucial to offshore wind's sustained growth amid headwinds, says DoE

President Joe Biden speaks at G7 Summit leaders' meeting on May 21, 2023 in Hiroshima, Japan. Photo: Getty/Getty Images



Inflation Reduction Act's tax credits can "soften" impacts of inflation and interest rate hikes that have raised project costs by 30%

By **Tim Ferry**

The US Department of Energy (DoE) has reported that offshore wind's substantial expansion in the country was imperilled last year by converging factors of supply chain turmoil, inflation and rising financing costs that "raised the level of market uncertainty" but found that the nation's climate legislation is underpinning continued growth.

Project costs rose up to 30% in 2022, increasing levelised cost of energy (LCOE) for the sector to \$89 per MWh, the department said in its *Offshore Wind Market Report: 2023 Edition*, released Thursday. As a result, multiple projects were pushed to seek **offtake contract renegotiations or even cancellation**.

Landmark climate legislation passed last year at the height of inflation, though, "provides a strategically important means of softening the macroeconomic impacts affecting offshore wind project costs," DoE noted in its latest study on offshore wind. The Inflation Reduction Act (IRA) provides some \$369bn, and possibly much more, in tax credits and other incentives aimed at spurring mass deployment of renewable energy.

It offers investment tax credits critical for capex-heavy offshore wind development of up to 30%, provided projects meet prevailing wage and apprenticeship requirements. With 10% adders each for meeting domestic content thresholds and for locating facilities in fossil-fuel powered communities or on brownfield sites, projects can receive total ITC of 50%.

The IRA also stimulates domestic manufacturing through further breaks that dramatically reduce the costs of domestically manufactured offshore wind components by up to 27% compared to imports, DoE said. Through these incentives, "the IRA can have a significant positive impact in offsetting the hurdles that threaten this nascent industry from achieving commercial success," the report noted.

Pipeline grows

The US offshore capacity pipeline expanded 15% from 1 January through 31 May 2023, the timeframe covered by the report, mostly on the addition of wind energy areas (WEAs) in the Gulf of Mexico, which hold an estimated 6.9GW of potential capacity.

Total operating capacity remains at a mere 42MW, but this will swiftly change, DoE said, as two commercial scale projects, the 800MW Vineyard Wind 1 and the 132MW South Fork array already under construction expect to begin delivering power to the grid this year. Some \$8.5bn in new investment into supply chain and port infrastructure flowed into the sector in 2022 to reach an accumulated \$17bn since 2014.

States have meanwhile increased procurement targets by 9% to 42.3GW by 2040, including Maryland's raised goal to 8.5GW and New Jersey's to 11GW. Coastal states now have a combined total planning targets and procurement mandates of 112GW by 2050.

Floating wind 'turning point'

Much of the expected growth will be in floating wind, the market segment which reached "reached a turning point in 2022", the department noted, with the first commercial deep-water leases sold off California.

California released a planning goal of 25GW by 2045 while President Joe Biden's administration launched its Floating Wind Shot with the aim of spurring LCOE declines of 75% to \$45/MWh by 2035.

The Department of the Interior (DoI) likewise launched a target of 15GW of floating wind in US waters by 2035 and plans for additional commercial deepwater leasing off the coast of Oregon in the Pacific Northwest and in the Gulf of Maine in the Atlantic Northeast.

A lack of transmission capacity capable of bringing vast amounts of offshore wind to the onshore grid remains a massive bottleneck and DoE urged “coordinated approaches to shared transmission solutions that address transmission cost allocation, interconnection queues, and competition for limited coastal points of interconnection”.

It also expects to see “increased efficiency in the permitting process” through experience and lessons learned by the Bureau of Ocean Energy Management (BOEM), the lead regulator of energy development in federal waters, and cooperating agencies as projects advance.

Onshore wind

The DoE published a parallel report covering the US onshore wind sector, also on Thursday, and reached the overall conclusion that “wind power continues to be one of the fastest growing and lowest cost sources of electricity in America”.

Overall, wind power accounted for 22% of new electricity capacity installed in the US last year, second only to solar, representing \$12 billion in capital investment, and providing employment for more than 125,000 Americans.

The DoE reports found that “transformative tax incentives” introduced by President Joe Biden’s have led to “significant increases in near-term wind deployment forecasts and are helping keep wind power prices competitive with other sources of energy like natural gas.”

Since the IRA was passed, the DoE said forecasts for land-based wind energy installed in 2026 have increased nearly 60% from about 11,5GW to 18GW – “enough to power an additional two million homes.”

Just four turbine manufacturers, led by GE, supplied all the US utility-scale onshore wind power capacity installed in 2022. GE captured 58% of the market for turbine installations, followed by Vestas with 24%, Nordex with 10% and Siemens-Gamesa with 8%.

The DoE’s onshore wind report acknowledged that 2022 was a “relatively slow year in terms of new wind power deployment – the lowest since 2018 – due in part to ongoing supply chain pressures, higher interest rates, and interconnection and siting challenges.”