Wind turbine offshore

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Large groups of turbines installed along coastlines can harness the powerful, consistent winds that blow offshore. Given that 40% of the global population lives within 60 miles of the ocean, offshore wind farms can be a major boon to efforts to clean up the electricity supply around the world.

But in recent months, projects around the world have been delayed or even canceled as costs have skyrocketed and supply chain disruptions have swelled. These setbacks could spell trouble for efforts to cut the greenhouse-gas emissions that cause climate change.

The coming year and beyond will likely be littered with more delayed and canceled projects, but the industry is also seeing new starts and continuing technological development. The question is whether current troubles are more like a speed bump or a sign that 2024 will see the industry run off the road. Here"s what"s next for offshore wind power.

Wind giant ?rsted cited rising interest rates, high inflation, and supply chain bottlenecks in late October when it canceled its highly anticipated Ocean Wind 1 and Ocean Wind 2 projects. The two projects would have supplied just over 2.2 gigawatts to the New Jersey grid--enough energy to power over a million homes. ?rsted is one of the world"s leading offshore wind developers, and the company was included in MIT Technology Review"s list of 15 Climate Tech Companies to Watch in 2023.

The shuttered projects are far from the only setback for offshore wind in the US today--over 12 gigawatts" worth of contracts were either canceled or targeted for renegotiation in 2023, according to analysis by BloombergNEF, an energy research group.

Part of the problem lies in how projects are typically built and financed, says Chelsea Jean-Michel, a wind analyst at BloombergNEF. After securing a place to build a wind farm, a developer sets up contracts to sell the electricity that will be generated by the turbines. That price gets locked in years before the project is finished. For projects getting underway now, contracts were generally negotiated in 2019 or 2020.

A lot has changed in just the past five years. Prices for steel, one of the most important materials in turbine construction, increased by over 50% from January 2019 through the end of 2022 in North America and northern Europe, according to a 2023 report from the American Clean Power Association.

Inflation has also increased the price for other materials, and higher interest rates mean that borrowing money is more expensive too. So now, developers are arguing that the prices they agreed to previously aren"t

reasonable anymore.

Economic trouble for the industry is global. The UK"s last auction for offshore wind leases yielded no bidders. In addition, a major project that had been planned for the North Sea was canceled by the developer in July. Japanese developers that had jumped into projects in Taiwan are suddenly pulling out as costs shoot up in that still-developing market.

China stands out in an otherwise struggling landscape. The country is now the world"s largest offshore wind market, accounting for nearly half of installed capacity globally. Quick development and rising competition have actually led to falling prices for some projects there.

While many projects around the world have seen setbacks over the last year, the problems are most concentrated in newer markets, including the US. Problems have continued since the New Jersey cancellations--in the first weeks of 2024, developers of several New York projects asked to renegotiate their contracts, which could delay progress even if those developments end up going ahead.

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