



Offshore wind: realism, resilience, and the cost of energy

The UK's offshore wind industry and its net zero ambition face a crucial year ahead, after the latest annual government-led renewable auction failed to attract any bids from offshore developers. Although 2023 ended on a more positive note with announcements from project developers, the long-term impact of the auction remains uncertain and questions remain over existing project commitments and the sector's future prospects. **Joe Dutton, AXIS Renewable Energy Business Development Lead**, explains what the renewable auction result could mean for the future of offshore wind in the UK and why investment challenges make meeting the UK government's 2030 target increasingly challenging.

Part 1: The perils in offshore windpricing

The UK offshore industry is a global success with the world's five largest operational windfarms in British waters and 14GW of operational capacity second only to China.

While the sustained period of historically low interest rates gave a boost to financing for offshore projects, another key driver of growth for the UK's industry has been the [Contract for Difference](#) (CfD) support scheme.

By setting guaranteed revenue for projects across a 15-year period, the CfD scheme has helped to:

- De-risk and attract long-term investment and accelerate project development in the UK;
- Reduce project exposure to electricity market price volatility; and
- Provide more stable revenue for owners compared to projects developed on a purely merchant basis.

Since its launch in 2014, the CfD scheme's use of competitive bidding in a reverse auction to set the subsidy price – known as the strike price – has also helped lower the cost of generation.

However, amid a challenging economic climate, the latest auction attracted zero bids for new offshore wind projects as the auction starting price – the maximum that participants can bid – was set too low.



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The difference a year makes

In stark contrast, the previous year's CfD [auction](#) (Allocation Round 4, AR4) delivered a record high 7GW of new capacity at a record low strike price of £37/MWh, from an auction starting price of £46/MWh.¹ Buoyed by this success and falling costs of [renewables](#) generation globally, the government lowered the 2023 auction (AR5) starting price to £44/MWh.

However, in the face of significant global [economic](#) challenges, it became clear in the run up to [AR5](#) that this auction price would be too low for the offshore market and the year-on-year reduction in the target price was not economically sustainable. Offshore developers were expressing doubts about their participation as early as the spring, and, in the end, no bids were submitted by the autumn deadline. The auction had been [forecast](#) to deliver at least 3.2GW of new capacity.

Signs of potential problems ahead actually emerged even earlier. Within the offshore sector, concerns were raised in 2022 that prices had been set too low in AR4 for some winning projects to be delivered: in March 2023, Orsted [warned](#) its future 2.9GW Hornsea 3 development was at risk without more government support and, in the summer, Vattenfall [announced](#) it was cancelling its 1.4GW Norfolk Boreas project and handing back the CfD contract won in AR4, citing cost increases of 40%.

Trade association Energy UK [reported](#) cost inflation across the industry of 20-50%, and it has been [estimated](#) that at least 12 new UK offshore projects suffered inflation-related delays in 2022.

Challenges facing offshore wind

The UK industry's predicament, culminating in the outcome of the 2023 auction for offshore, is far from unique amid a deteriorating [investment climate](#) for renewables around the world. The combination of post-Covid recovery, geopolitical instability and war, led to rising inflation and interest rates, raw material and component cost increases, supply chain disruption, and manufacturing delays. This perfect storm has contributed to rising project costs and delays for offshore wind – with reallocation or reduction in capital spending on new projects as a result.

¹ Prices in the CfD scheme are expressed in 2012 values. £46 in 2012 was approximately £63 in 2023.



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Offshore wind, and renewables more generally, are particularly sensitive to interest rate rises and cost inflation compared to other types of energy because they have higher upfront investment costs. Across the lifetime of a typical [renewable energy](#) project, the initial capital expenditure and project financing make up 90% of costs. But with a typical fossil fuel project, these account for only 15% of lifetime costs. Although the operational costs are lower, return on investment can also be across a much longer period as well compared to other energy types.

Reality check

The UK and European offshore wind development boom coincided with a sustained period of historically low interest rates, which helped with relatively cheap project financing. But CfDs also played a crucial role in the UK, because reducing project exposure to electricity market price volatility gave owners more revenue stability than if the project was developed on a purely merchant basis. To date, only 4% of UK offshore wind farms have been developed as merchant projects without a CfD or other government support.

Although prices in CfD rounds have fallen in each of the auctions held since its inception, it is important to remember that the main purpose of the CfD is not to keep driving down prices but to reduce the investment risk of delivering large amounts of offshore wind capacity – especially considering the high up-front costs. However, this only works if the CfD is truly reflective of the wider economic conditions and costs facing project developers. Though CfD payments are linked to inflation, this does not shelter developers from all cost changes – and ultimately the AR5 auction did not adequately consider wider cost issues despite warnings from industry.

For the offshore industry to flourish it is essential that pricing reflects the elevated risk environment in which the offshore industry is currently operating, while also providing value to lenders, developers, and consumers.

Part 2: Elevating the prospects for offshore wind

The response to AR5 has led to a change in tack from the UK government, and in the aftermath of the result it [raised](#) the maximum starting price for AR6 to



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£73/MWh – a 66% increase, and offshore wind will get its own funding pot in the auction rather than competing with other technologies for subsidy as in previous rounds.

Industry and developers responded positively with Vattenfall [expecting](#) AR6 to deliver a record-high of 10GW of capacity as a result. But it is unclear how much of this capacity would be 'new' and how much would be down to companies having deferred taking part in 2023, delaying their participation to the 2024 auction. This matters for meeting the UK's capacity targets this decade, and ultimately achieving net zero.

Two announcements from developers in late December 2023 show how raising the auction starting price is already making a difference:

- German developer RWE [announced](#) plans to acquire Vattenfall's East Anglia offshore portfolio of three projects and to restart work on the Norfolk Boreas windfarm, which owner Vattenfall previously said it would cancel and hand back the CfD it won in 2022. All three projects, including Norfolk Boreas, will now be entered in the AR6 auction in 2024.
- Danish firm Orsted [confirmed](#) it reached a financial investment decision (FID) on Hornsea 3, which won a CfD in 2022 auction and that, crucially, it will withdraw some of the project's capacity from its 2022 CfD contract and resubmit it AR6 – which has a much higher auction starting price.

These decisions taken by developers after the government raised the auction starting price underline the issue of new or deferred capacity in CfD rounds and demonstrate how important the move by government was in securing the future pipeline of projects.

Winds of change

More fundamental changes may still be needed to the CfD scheme in future to ensure it keeps delivering the best outcomes for the UK renewables industry and consumers. Even before the 2023 auction issues, the industry had called for a range of [reforms](#), including raising the amount of money on offer and better indexation of auctions against supply chain costs and interest rates.

Additional announcements from government made in autumn 2023 may help developers, with commitments to improving the lengthy and costly process for



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permitting and planning permission, and ensuring the necessary upgrades to the UK's [onshore grid](#) are accelerated. Changes to tax rules regarding [full expensing](#) for capital expenditure, allowing companies to deduct some upfront costs from their tax bill, could also be beneficial for offshore wind.

But wider economic changes outside the control of government – such as a fall in the rate of inflation, stabilisation of interest rates, and the easing of supply chain constraints – all may ultimately deliver the most significant help for the offshore industry.

Net zero targets

The UK's targets for a net zero electricity grid by 2035 and net zero greenhouse gas emissions across the whole economy by 2050 are both underpinned by offshore wind achieving its target of 50GW by 2030. Given its significant potential, offshore wind remains the backbone of net zero and will help decarbonise power supply for homes, transport, and industry. Because of this, any gaps in the offshore pipeline could present a threat to future electricity supply security considering the delays to new nuclear projects and the country's last coal-fired power plants will be shut down in 2024.

As it stands, the absence of the new offshore wind capacity from 2023 is [estimated](#) to have collectively cost energy billpayers at least £1.5 billion per year because electricity supply will end up being met by more expensive gas power stations.

Even with the expected rebound in the 2024 CfD auction, the lost year of capacity additions put achieving the government's already challenging target of 50GW by 2030 at even greater risk.

Considering the 14GW in operation and other projects under development, the UK needs an additional 26GW of capacity from existing commitments and future plans to meet the 50GW in 2030. In a recent [survey](#) of industry stakeholders, the majority thought 30-35GW can be reached by 2030, but only 4% of respondents believe that 50GW can be achieved by the end of the decade.

Future success

The UK's offshore wind industry has proved to be a global success, and the CfD scheme helped deliver the large-scale renewables projects that have helped the



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UK decarbonise its electricity supply and reduce emissions. But as the world has changed since the CfD scheme was introduced, the design of the scheme must change to secure competitive growth in offshore wind in the years to come and ensure the UK benefits from cheaper, clean electricity and wider economic benefits.

The Global Energy Resilience team at AXIS covers the entire lifecycle of a renewable energy project from site preparation to decommissioning. The combination of specialist underwriting, technical claims knowledge, and risk engineering enables us to deliver elevated solutions and better understand the needs of partners and customers in this fast-growing, innovative industry.

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