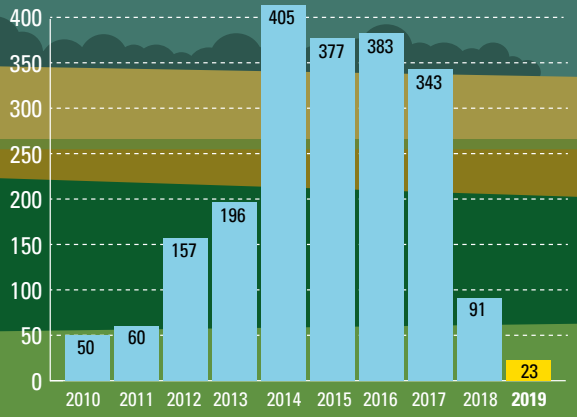
UK COMEBACK FOR ONSHORE WIND

A decision by the UK's government has led to a dramatic reduction in new onshore wind power projects. With the reversal of that decision in March 2020 many are predicting a new boom for UK onshore wind with reports suggesting there are at least 86 projects in the pipeline. **Szen Ong**, Engineering Adjuster with Integra Technical Services, looks at the latest developments and considers some of the risk and insurance challenges.

Pressure from within the UK government led to a decision in 2016 to deny onshore wind the chance to bid for a price guarantee for the electricity they produce, known as the Contracts for Difference (CfD) scheme. The stark impact of that decision has been a huge reduction in the number of new onshore wind farms. From a 2014 peak of 405 to just 23 in 2019, and all but one of those had secured support from subsidy schemes before they were closed.



New UK Onshore Wind Farms (The Guardian graphic, source: Renewable UK)

Toward net zero

CfD contracts offer owners of capital-intensive onshore wind farm projects a 15-year visibility of future revenue. It allows them to significantly reduce their cost of capital, become more competitive and, as a result, push down their prices. So, it was not surprising to see the onshore wind sector celebrate the UK Government's announcement in March 2020 that there would be a new CfD auction for onshore wind in 2021.

Increasing the renewable energy generation capacity is essential for the UK to meet its 2050 net zero ambitions. In 2019 onshore wind farms supplied about 10% of the UK's electricity, with just over 13 GW of installed capacity – the equivalent of powering more than eight million homes. According to the UK Government Committee on Climate Change onshore wind capacity needs to increase to 35 GW by 2035, which means adding some 1,400 MW a year.

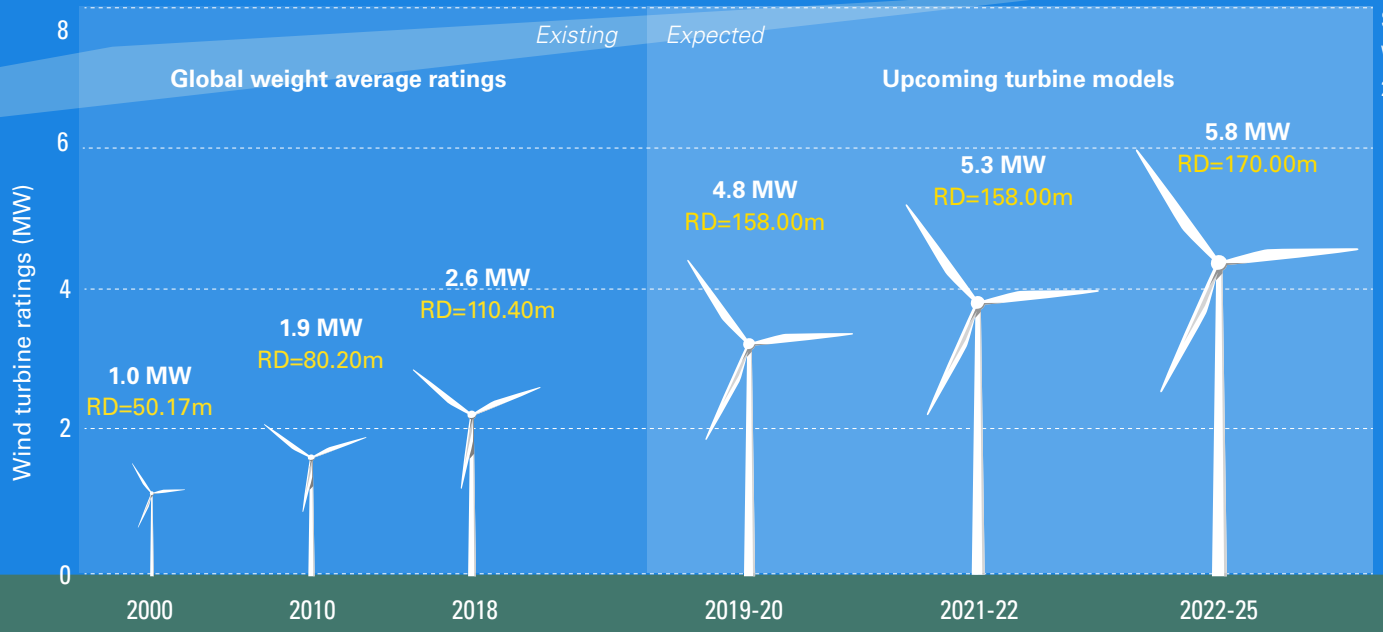
A pipeline of projects

Firms, that include Scottish Power and Vattenfall, were eagerly awaiting the re-inclusion of onshore wind into the CfD scheme. There are believed to be a pipeline of 86 wind farm projects with planning permission, which could be generating electricity by the mid-2020s. Among these is a 50-turbine wind farm in Southern Scotland which Vattenfall has confirmed will be up and running by 2023. When you take into account the retirement of older projects, in order to hit emission targets new wind farm development is going to have to, at least, match the annual average of 208 new wind farms set over the last decade.

It's predicted that the vast majority of these new onshore wind farms will be in Scotland. Not only is it the windiest country in Europe, but a more favourable planning framework and clearer guidance make this location more attractive for investors. In fact, of the 86 onshore wind farms referenced, 76 are in Scotland with 11 in Wales and one in England.

Wind turbine size

Over the years onshore wind turbines have become larger as technology improvements enable them to harvest more energy. A wind turbine's size is a combination of two factors, the hub-height and the rotor diameter. High hub height exposes the turbine to higher average wind speeds, and larger rotors capture more wind. The diagram opposite shows that in 25 years the rotor diameter is projected to increase by 350% and be generating almost six times as much electricity.



Source: (IRENA, 2019c; Wind Power Monthly, 2019, 2018).

Transportation

Whilst new technical challenges and failure modes could be introduced with these new larger turbines, perhaps the biggest challenge is getting these components to the farm site. It can affect business interruption insurance and risk management considerations during both the construction and operational phases of the wind farm, especially when you consider that most wind farms will be in remote parts of Scotland and Wales.

Many components are wide, long and extremely heavy. For example, large wind turbine blades can span 50-80 metres and the turbine nacelle (where the blades are mounted) can weigh around 85 tonnes or more. Working out the access route can take months of meticulous planning.

Some examples include understanding weight or height restrictions on the access route; planning for temporary traffic management; and sometimes the removal of street furniture and hedgerows and the temporary widening of roads.

Sparing philosophy

For most of the established wind turbines, manufacturers and operators will have a good understanding of the failure rates of different components and typical downtime resulting from their failure. Often wind turbines replacement parts must be sourced from Europe or further afield and this can cause significant downtime especially where parts are made to order. We've seen as much during the current COVID crisis with some claims experiencing prolonged business interruption due to difficulties sourcing components as countries and manufacturing sites were in lockdown.

This has affected many industries, not just renewable energy, but with renewable energy becoming a larger and more important part of the energy mix it does raise the question as to whether wind farm operators should look to introduce sparing policies in a similar fashion to the offshore oil and gas sector.

The combination of a robust sparing philosophy and manufacturers electing to work with Tier 1, 2 & 3 suppliers that are based geographically closer to the project site will, undoubtedly, improve energy security and mitigate business interruption risks. It would be interesting, therefore, to see how this would be received by insurance underwriters and whether, over time, it led to more favourable insurance terms. ■

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