SUPPORTING A SUSTAINABLE FUTURE

Laura Hall & Somaieh Salehpour detail the coatings innovations that are helping to future-proof the wind sector

Net zero 2030. Reduce energy dependency. Now or Never. 1.5 degrees. Heading for a climate disaster. Governments must act now. New energy strategies. The cost of climate inaction.

These are just some of the soundbites from the news in recent weeks as the acceleration to net zero 2030 goals speeds up. With rising energy costs across the globe putting pressure on household and commercial expenses, and the actions of Russia in Ukraine emphasising the need to reduce energy dependencies from overseas, harnessing energy from the earth's elements is in full focus.

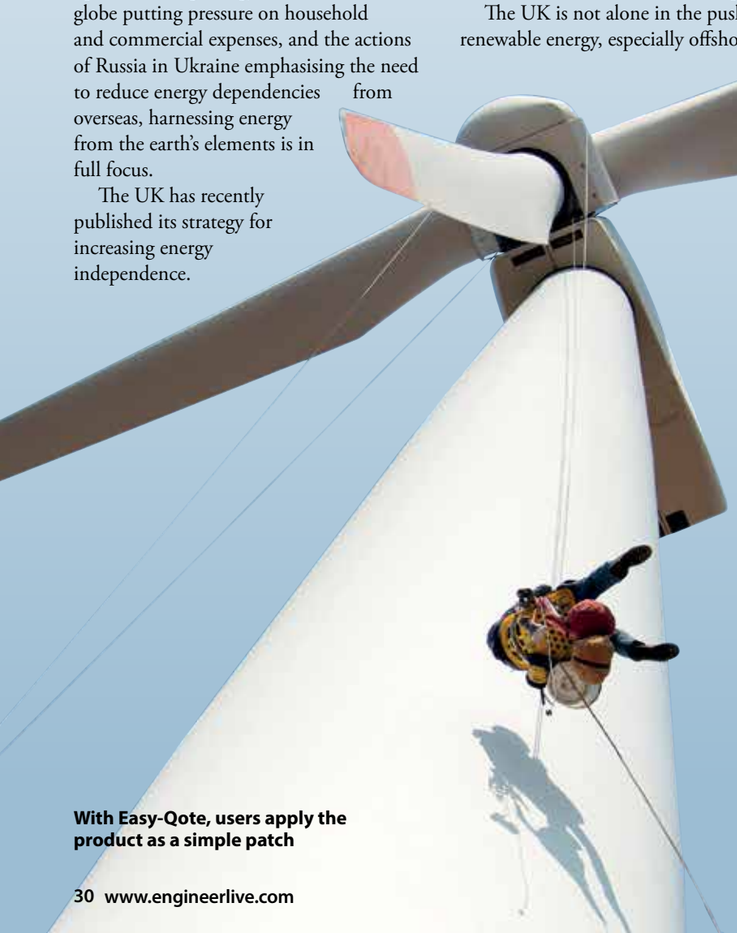
The UK has recently published its strategy for increasing energy independence. Nuclear, wind, solar and hydrogen all play a part in that with strong targets to achieve by 2030; hydrogen capacity to double and solar to increase by up to five times the current outputs. The offshore wind target is to generate 50GW of energy by 2030, currently sitting at 11GW. These are ambitious targets and the sort of commitment required is going to take some serious infrastructure installation projects.

The UK is not alone in the push to renewable energy, especially offshore wind. The USA just conducted an offshore wind lease sale off the coast of New York, fetching over US$4 billion, a major step in the drive towards renewable energy. A recent study revealed that the Asia-Pacific region's wind energy sector could soon account for nearly a quarter of its power this decade, with China set to be the largest market by 2030. And the Government of India has just announced funding by India's National Institute of Wind Energy (NIWE) for an offshore wind energy test facility. Since the conditions in Indian waters are different to those experienced in Europe, there is a need to perform testing to ensure wind turbines are designed for their best performance.

The future of offshore wind is looking bright, and busy. But to make this energy truly sustainable, preventative asset protection is vital to ensuring longevity.

The push to offshore wind is to take advantage of the power of the wind produced at sea, moving at a much higher and more consistent speed thanks to the open space and absence of structures. What is a benefit to production, however, poses a logistical disadvantage to construction and maintenance along with an aggressive, corrosive environment. These increased offshore developments will see stronger winds and bigger waves – beneficial to production but adding pressure to not just the installation phase, but ongoing operation and maintenance.

Oxifree requires minimal surface preparation and is applied in a fluid state



With Easy-Qote, users apply the product as a simple patch

In this corrosive environment a wind turbine can see corrosion start in many different areas – monopiles, ladders, walkways, boat landings, guard rails and rotor heads – each of which can compromise the overall integrity of the structure. Protective coatings that can be applied to prevent corrosion from developing, or halt its progression, are essential to providing long-term asset protection.

And as we have seen in many other industries, a major consideration to the ideal protective coating is surface preparation. The need for aggressive blasting to apply protective coatings is a burden in these confined and hostile environments, let alone the contamination to surroundings. Preventative coatings that can mitigate this issue are a major step forward: combine that with ease of application, minimal manpower and offering benefits to time, long-term protection, costs and production.

THE PATH TO THE FUTURE

Two brands aiming to pave the way to simpler futures are Easy-Qote and Oxifree. Both have the same approach of minimal surface preparation; just simply brush away any loose corrosion and the asset is ready to be protected. In the case of Easy-Qote, the product is simply applied as a patch.

With traditional approaches a variety of materials and equipment would be brought to site: surface preparation tools, coatings and application tools, rope access equipment and PPE.

With Easy-Qote, one individual or small team is armed with a wire brush and a roll of patches. The user brushes loose corrosion away, applies the patch and returns to base. No blasting is required, avoiding the all-important issue of environmental contaminants. Overhead costs are reduced with transportation and manpower costs down. Instead, protection is immediate and with a service lifetime of 25-30 years, the asset can now reach its full potential with long-term protection.

Oxifree is applied in a fluid state and quickly conforms to the asset shape, protecting critical areas from corrosion spread. Additionally, it can be applied in-service at elevated surface temperatures, allowing equipment to remain operational during application, and is ideal for assets with moving parts. In use on turbines and on transmission platforms, TM198 can provide long-term protection that will also allow for inspection with UT.

The ambitious targets for 2030 require swift, dedicated action, and it should be done with longevity at the core. A sustainable future is not only working with greener energies and renewable sources; it also involves extending the lifetime of assets and existing infrastructure, so that they can carry out their duties long beyond what the environment might normally allow.

The Easy-Qote and Oxifree brands are committed to helping the wind energy industry reduce failure from corrosion issues, improve productivity, longevity, and as a result, make renewable energy truly sustainable. ●

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