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There is no planet B

Sustainability is driving change in wind energy. Joel Cox, Global Sales Director (wind) at Dellner Wind, explores how refurbishment and smart component replacement are reshaping the industry.

You heard it here first: my next car will be electric. That's quite a statement for an American, I know, but sustainability is being embraced more wholeheartedly on this side of the Atlantic, even if wholesale support is some way off in the US. It's also true that, while sustainable business is fundamental for long-term value creation, sustainability itself remains a work in progress, in the Old Continent too.

At the time of going to press, I read that Vestas has axed plans to open its biggest factory in Poland; the company pointed to weaker-than-expected demand in Europe. It means that the struggle between viewpoints persists. On the one hand, sustainability is not only upheld by moral principles, it creates opportunities for growth and competitiveness; while, on the other hand, it's just greenwashing; companies painting themselves as eco-friendly, but business goes on as usual. Wind energy stakeholders, like us, must be bifocal in our approach; we must continue to drive uptake within our industry, but also champion renewables as a bastion of change.

I argue that we are emboldened further as gatekeepers to the future, as inter-sector wrangling proves the fragility of green endeavours. We have seen some offshore wind projects slowing down, on US and foreign soil (water). As above, some of the blade manufacturing plants that had been spoken of are being paused or terminated. Europe remains well ahead on offshore, though the US has a firmer grip on onshore since the landscape in certain regions has allowed growth, especially in some states that are considered greener than others.

From blueprint to green print

I'll continue to make the case, as my employer takes an industrial lead in sustainably developing our business and helping our customers do the same. Wind energy workers are living and, more importantly, thriving by a green code that few other industries can. Electric vehicle manufacturers promise a cleaner future too, but lithium mining, critical for their batteries, can drain water, disrupt communities, and raise ethical questions.

I'm fortunate to travel globally and work for an organisation that frequently requires me to visit Europe. Over the years, it's been a chastening experience. As I've written before, I was working in an office in Denmark once and the battery died in the computer mouse I was using. I replaced it and threw the old one away in the regular refuse bin on the floor. More than one of my Danish colleagues caught me in their peripheral vision; they were aghast. I should've known better; there are different trash cans for paper, card, cans, food, general waste, electrical items, batteries, and more, in many European countries I've visited. Here in the States, you're still lucky if you find two.

Dellner even has a sustainability officer. Our sustainability efforts are thus data-driven, science-based, and focused on continuous improvement. We strive to lower our greenhouse gas emissions in line with the Paris Agreement and to reduce resource consumption, waste, and pollution in our operations. We proactively comply with environmental legislation and anticipate future requirements. We encourage our suppliers and subcontractors to adopt the same environmental principles as Dellner Group. We give appropriate weight to environmental commitments in planning and investment decisions.

It's a blueprint to follow, not only in moral fibre, but because I've seen how it positively impacts employee motivation, customer satisfaction, strong brands, and sustainable profitability. More should be made of this, especially as it seems the absence of a planet B isn't incentive enough for some or many. A focus on sustainability undoubtedly creates opportunities for growth and competitiveness.

Whether one is in a position to hire or appoint a sustainability leader or not, it's a good idea to formalise these efforts and hold an organisation to account. A bit like my wrathful Danish colleagues, detecting and correcting behaviour that runs counter to certain values and codes of conduct is an important part of this commitment. It's important to build trust and foster a culture where people feel safe to speak up and report actual or suspected violations of the code. Dellner even went as far as to set up a whistleblowing system, where employees and third parties may report serious suspected wrongdoings.

This type of activity is important because it demonstrates a bias towards action. In-person meetings are necessary, too. We conduct regular risk and impact assessments to identify, prevent, mitigate, and account for actual and potential negative impacts on the environment and people. This includes impacts related to our own operations and upstream and downstream value chains, including products, services, and business relationships. We integrate environmental and social considerations into business management and decision making processes.

Sustainability is neither a fairytale nor a simple checkbox; it requires vigilance, action, and accountability at every level. By embedding these principles into operations, leadership, and culture, we can turn environmental responsibility into a source of real innovation, trust, and long-term value.

Repair vs replace

Sustainability is just one reason why industry is looking more readily at repairing or refurbishing products, rather than disposing of them, along with my computer mouse batteries. Another causation, especially here in the US, is that there is now an incentive to repair or refurbish things to avoid high tariffs or higher-priced replacement goods. It certainly plays into the hands of larger companies with local offices in many countries and rebuild centres with in-stock parts.

Whether driven by sustainability or economics, or both, refurbishment often makes sense. One doesn't scrap their car when it needs new tyres, do they? A service life of a wind turbine might be as long as 20 or 30 years, but most need extensive help to pass 25 years. In Europe, nearly 35,000 turbines are 15 years old or more, with an average of 4,000 a year being decommissioned. As warranty packages on some brands work in five- or six-year timeframes, vendors and their components usually need maintenance on an annual basis, with minor-major service coming in at 10-year marks.

Expect to see wind turbines increasingly overhauled, upgraded, or re-powered. In the US alone, there have been 14 GW wind projects fully or partially overhauled and expected to be 16 GW through to 2026. This is the type of activity I imagine will spike.

If you're new to repowering, it refers to the process of upgrading or replacing existing wind turbines with newer, more efficient technology to increase energy output, extend the life of a wind farm, or reduce maintenance costs.

Sometimes, only key components are upgraded, such as gearboxes, blades, or control systems, to boost efficiency without full replacement. Heavy-duty brake refurbishment is always an option since their lifespan can sometimes outlive the turbine. Checking tolerance and wear indicators for pad life is something we have always done very well on brakes and helped the industry follow suit.

As we've commented, the frames and mountings of brakes are robust and oversized many times. Now that many drive systems are on frequency drives and control schemes, the brakes do not see the dynamic stopping they once did, and the heavy-duty branded (non-generic) brake pads live longer and can extend service life longer. We are always innovating on brake pad materials and testing possibilities to keep turbines running longer than ever.

In one recent component replacement case study, we gave a customer a rebate towards a new purchase and swapped out the old for the new. This is often a solution when the model may not be in serial production any longer, and the alternative is more expensive.

Whether driven by sustainability, economics, or both, repair and refurbishment are becoming central to the wind industry. Upgrading or repowering turbines, from gearboxes to brakes, extends their service life, boosts efficiency, and maximises the value of existing assets. As technology evolves, proactive maintenance and smart component replacement will only grow in importance for keeping wind farms productive and competitive.

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