Bigger turbines, smarter solutions: the evolution of lifting in wind energy

On the North Sea horizon, wind turbines now tower higher than London's Gherkin, with blades longer than an Airbus A380. As the industry races to scale up, every component, from nacelle to blade, pushes the limits of what's possible onsite.

Traditional cranes often struggled with reach, capacity or mobilisation time issues. Now addressed by modular, ultra strong systems tailored for offshore complexity. today's projects call for a new generation of systems, modular, ultra-strong, logistically efficient and ready for complex offshore conditions. This shift requires partners who don't just supply equipment, but also contribute expertise in engineering, logistics and sustainable thinking.

A growing market demands adaptive solutions

According to the Global Wind Energy Council's Global Wind Report 2025, the industry is expected to grow at approximately 8.8% annually through 2030. That rate of expansion would deliver an additional 981 GW of capacity, bringing total global wind capacity to well above 2 TW. Offshore wind, particularly floating installations in deep waters, is expanding rapidly, amplifying the need for lifting solutions that are safer, faster, more sustainable and aligned with circular economy principles.

Offshore projects often operate within narrow time and spatial constraints. Installing on pontoons, substations or monopiles requires precise coordination between contractors, maritime logistics teams and lifting partners. In this setting, rental partners play a key role, not only as equipment providers but as strategic collaborators.

Case study: lifting support for the OSS Jasmund jacket installation

The OSS Jasmund substation, located in the Windanker Offshore Wind Farm northeast of Rügen Island and about 100 km from the German coast at Lubmin, delivers 300 MW of green energy, enough to power approximately 260,000 households.

One of the key structures in this project was the massive jacket foundation, weighing around 4,500 metric tonnes and standing 72 metres tall. The cable deck alone weighed 842 tonnes and was built in two halves before being assembled and outfitted onsite.

The Safe Lifting Europe team played a crucial role in the jacket assembly, providing tailored lifting solutions and technical input from the early engineering phase through to execution. A full range of heavy-duty lifting equipment was supplied, including a modular spreader beam system at a 25-metre span. For the safe handling of oversized loads, the company also delivered high-capacity HMPE roundslings, up to 1,250 tonnes WLL, to keep the handling easy and light.

To match the project's phased execution, a flexible rental setup was arranged, dividing the rental period into operational and standby phases aligned with the construction schedule. Transport logistics were also managed to ensure the timely delivery of all equipment.

This project demonstrated the importance of close coordination, technical precision and adaptable logistics in supporting large-scale offshore construction.

Growing alongside the sector: a strategic rental partner

Safe Lifting Europe, based in Vlaardingen, the Netherlands, has become one such partner. Where buying heavy lifting gear was once standard, the shift towards circular rental solutions allows projects to scale up or down based on specific requirements.

By investing early in a modular fleet and embracing digital asset management, the company positioned itself ahead of the industry curve, enabling clients to access the latest equipment on demand while minimizing capital expenditure and environmental impact.

This proactive approach has included phasing out legacy equipment in favour of lightweight, high-capacity modular systems and implementing a rigorous maintenance and recertification program, steps that have helped set new industry standards for both flexibility and reliability.

A company spokesperson explains: 'If a client comes to us with a request for lifting equipment we don't yet have, we invest and expand. This way, we're never in a position where we have to say no.' That mindset, combined with technical adaptability, has positioned Safe Lifting not just as a rental provider but as an essential solutions partner.

Sustainable and circular by design

The broader sustainability transition is rippling through every layer of the wind energy supply chain, including heavy lifting. Renting rather than buying inherently supports circular practices: gear is reused, maintained, and certified between projects, reducing the environmental impact of production and material waste.

Safe Lifting supports this transition by investing in sustainable alternatives like HMPE slings, lightweight synthetic slings that can replace steel wire, and electric machines instead of diesel-powered ones. These choices lower emissions, reduce fuel use, and contribute to safer working conditions onsite.

Their circular approach also avoids overproduction and keeps high-quality equipment in circulation longer, without sacrificing performance. This makes rental not just a cost-effective option, but a more responsible one in both ecological and operational terms.

Expertise beyond equipment

In major wind projects, equipment alone isn't enough. Engineering support is crucial to


WLL 100t
4300 kg
Safe Lifting
CoG
Maximum Payload 52 TON
Maximum Payload 40 TON
Truck pocket
Truck pocket
MAMMOET

managing risk and executing safely. When an 842-tonne substation deck was lifted and placed, Safe Lifting didn't just supply the beam; they co-engineered the full lifting solution, including load distribution, rigging calculations and transportation.

This kind of collaboration reflects their deeper role: not merely a supplier, but a technical partner working alongside installers, maritime planners and contractors to ensure success.

Ready for the next lift

Wind power is heading toward 20+ MW turbines, floating installations and projects in deeper waters. This evolution demands lifting systems that are higher-capacity, smarter, faster to mobilize and circular in use.

Emergency lifting response in harsh Swedish weather

When extreme weather severely damaged a wind turbine at a remote Swedish site, a rapid and reliable lifting solution was urgently needed. Time was critical; the turbine tower had to be stabilized immediately to prevent further structural risk and allow safe repairs.

That's where Safe Lifting came in.

It quickly mobilized and delivered two 10-tonne electric winches, each equipped with HMPE ropes, pre-tensioned and spooled under load for maximum reliability. The winches were welded onto spreader boards, enabling flexible deployment with counterweights.

The project team supplied a custom rigging configuration to support the critical heavy lifts, prioritizing strength, safety, and speed. The setup stabilized the damaged turbine and established a secure environment for crews to carry out repairs, even in challenging onsite conditions.

This project highlights the company's ability to respond fast, think smart and deliver robust lifting solutions exactly when and where they're needed most.

Safe Lifting continuously expands its fleet to match that future: from ultra-heavy spreader beams to certified synthetic slings and high-load shackles. Their rental model is dynamic and responsive, built on the belief that any lifting request should be met with a solution, even if it means acquiring new capacity on demand.

This approach turns rental into a strategic asset: clients benefit from customized solutions that are instantly deployable, without owning or storing specialized hardware. It's about staying ready, scaling smartly, efficiently and responsibly.

Safety as a cornerstone

Heavy lifting inherently carries risk. European standards like LOLER, which set strict rules for the safe use and inspection of lifting equipment, require certified materials, thorough inspections and professional oversight. Safe Lifting operates within these frameworks, ensuring all equipment is tested, recertified and fully documented before and after each deployment.

Training and support are part of their offering, ensuring crews are fully briefed on rigging setups, safe use and dynamic lifting procedures. This is particularly crucial in wind energy, where safety margins are tight and every lift counts.

The future is scalable and circular

Looking ahead to 2030 and beyond, turbines are expected to reach 250 meters, floating platforms will become the norm, and installations will take place in increasingly remote or challenging environments. The wind sector will need lifting gear that performs reliably, deploys rapidly and operates within a circular economy framework.

As turbines grow taller and sites move further offshore, only the most agile, circular and technologically advanced lifting solutions will keep pace with the industry's ambition.

Safe Lifting is already answering that call by combining fleet expansion with a rental model that supports reusability, minimal waste and long-term sustainability. Whether it's a 3,000-tonne lift or a custom-engineered system, their approach aligns with the sector's need to build smarter, not just bigger.

Staying in dialogue with clients and constantly investing in capacity means it remains ready, not only for the next project, but for the next generation of wind power.

Conclusion

The energy transition is pushing wind power into a new era; faster, taller and more demanding than ever. That evolution requires not just bigger turbines, but smarter, safer and circular lifting solutions.

Safe Lifting Europe represents a new generation of rental partners who don't just provide gear, they anticipate, collaborate and deliver. Through fleet growth, engineering expertise and a strong focus on sustainability, they're proving indispensable in the construction, expansion and maintenance of wind farms worldwide.

They are the silent strength below the hook: rigging solutions that evolve with the wind industry, efficient, dependable and circular by design.

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