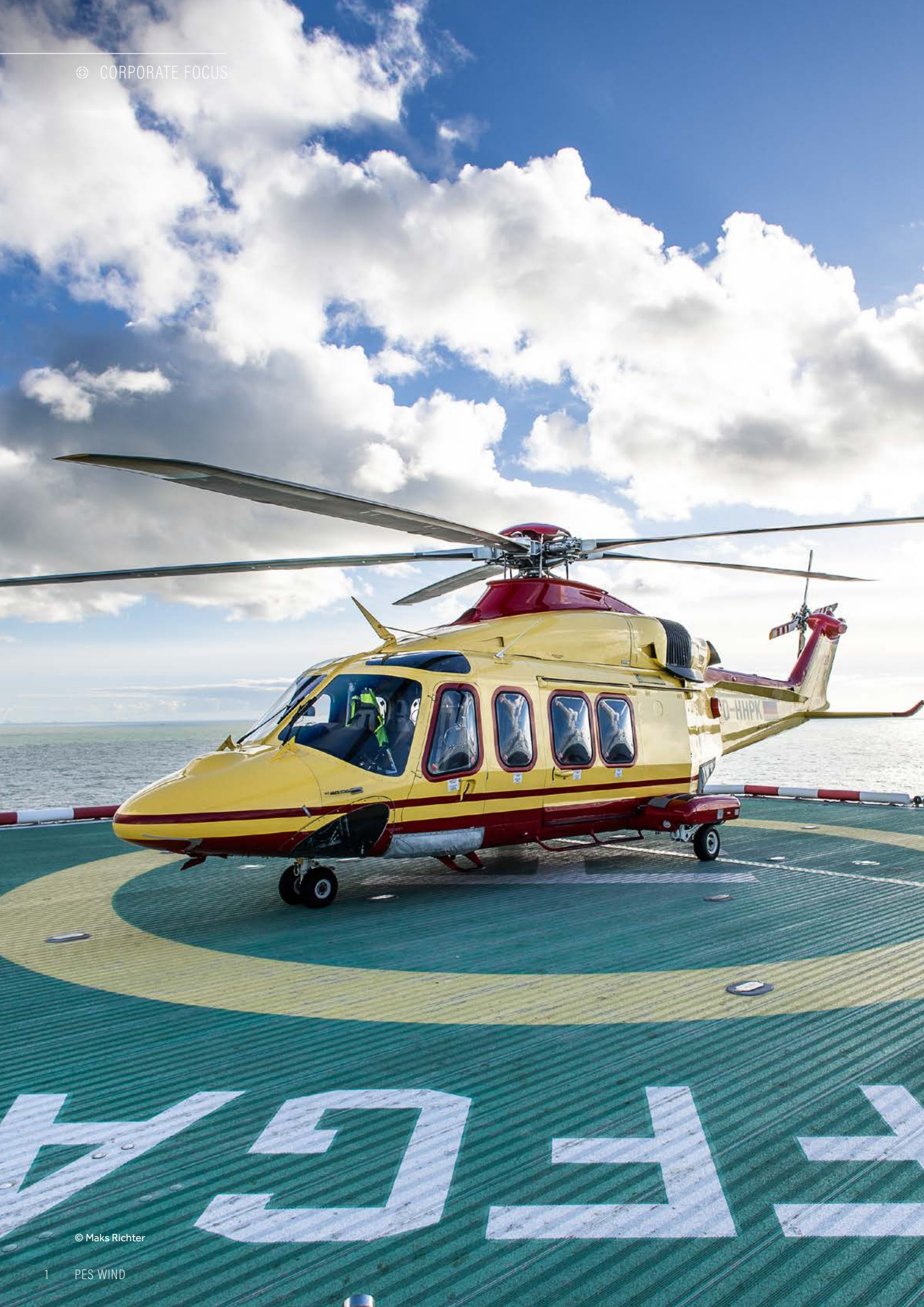

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High-performance helicopters take off as a more efficient way of working

As the offshore sector continues to experience consistent expansion, the significance of establishing and fostering a readily available network of highly skilled maintenance crews has never been greater. This is crucial for addressing failures, emergencies, and maintenance services promptly. While Crew Transfer Vessels (CTVs) have traditionally served as the primary mode of transportation to offshore platforms, helicopters are now gaining prominence as an efficient and sustainable alternative.

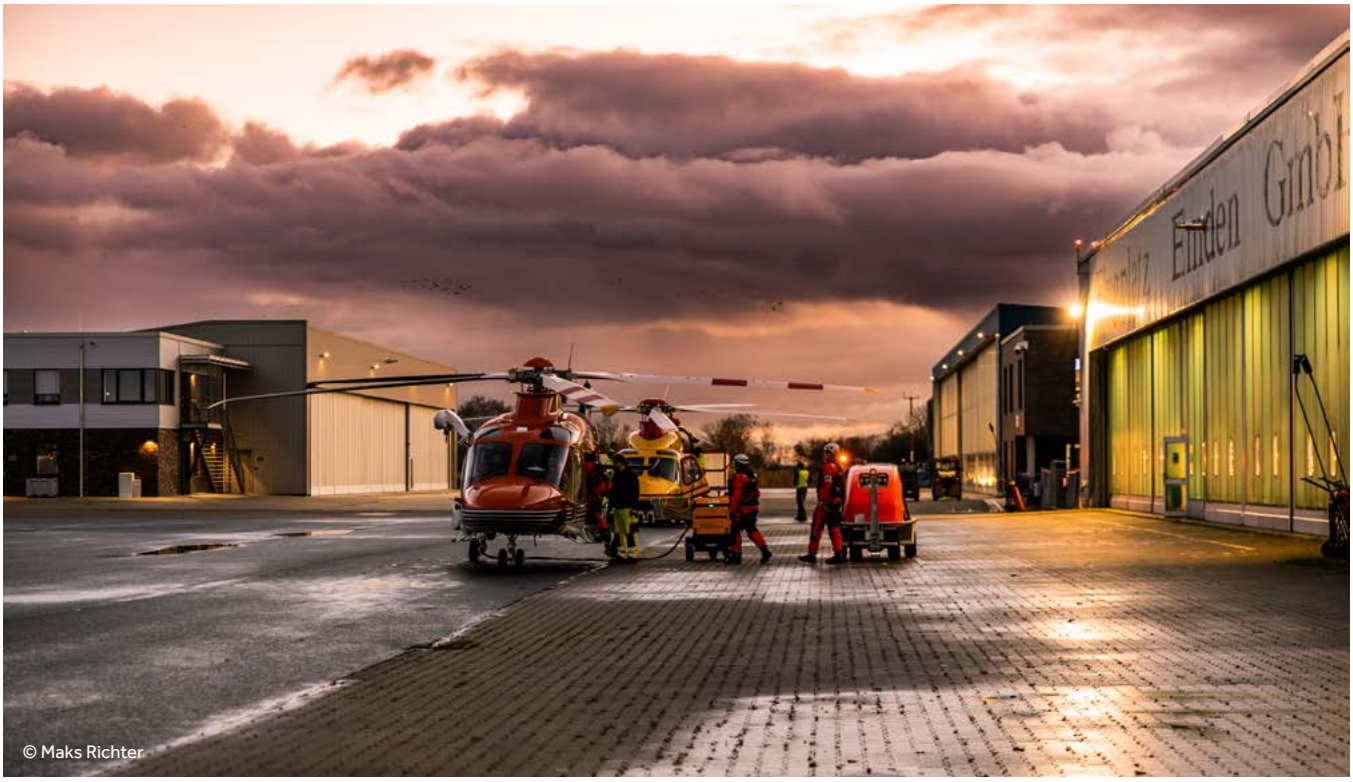
Changes and challenges in the offshore wind industry

The evolving global shift in energy requirements highlights the importance of establishing a resilient and dependable network of clean and sustainable energy supply chains. Within this context, wind energy, particularly in its offshore sector in the North Sea, has become a central focus in achieving ambitious goals and advancing the transition away from coal and nuclear power plants.

Consequently, the offshore wind market boomed in the 2010s, reaching 41 GW installed capacity in 2021. This trend is expected to further accelerate, with 200+ GW additional capacity to be commissioned by 2030 in Europe (60%), Asia (20%) and North America (15%), as indicated in a recent study initiated by Boston Consulting Group.

In the face of ongoing expansion, the significance of logistical processes and associated challenges is heightened, emphasising their crucial role in the successful execution of projects and the maintenance of a steady energy supply within the offshore wind market.

The success of these projects hinges on robust logistical support from partners and companies tasked with furnishing essential transportation for crews, ensuring their safe and punctual arrival at offshore platforms



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and parks. While CTVs have historically served as the predominant mode of transportation to offshore platforms, recent advancements have brought about a lasting shift, with helicopters emerging as a more efficient and notably sustainable means of transporting personnel across the sea.

Helicopters transport personnel or parts to OSW farms and can also be used for medical evacuation. They have a clear advantage on speed and accessibility, being able to fly at 130-150 knots and reach all existing OSW assets. They are not limited by sea or wind conditions, in contrast to CTVs, which cannot operate in bad or stormy weather conditions.

By using helicopters, technicians can be directly lifted onto wind turbines for troubleshooting operations or, in certain circumstances, emergencies. Currently, helicopters are primarily reserved for critical tasks and adverse weather conditions during the autumn and winter months, acting as a supplementary option CTVs for routine operations.

However, expanding and enhancing the use of helicopters for additional operations could represent a significant milestone in achieving ambitious environmental objectives. This shift is crucial, not only for energy suppliers but also for project partners specialising in crew transport and maintenance services.

Introducing HeliService, a leading wind offshore helicopter service

HeliService is a leading wind offshore helicopter company with 260 employees, founded in 1987 and headquartered in Germany. It has over 30 years of experience in offshore transportation and has been providing maintenance for Leonardo and Airbus helicopters and HEMS (Helicopter Emergency Service) since 2004. In 2016, HeliService was acquired by Volartus Holding GmbH, and Dipl. Ing. Jens Oliver Freiland is managing partner.

HeliService specialises in offshore logistics, including crew changes, cargo transport, and hoisting. High-performance helicopters transport maintenance personnel to offshore wind farms, offering energy companies several advantages such as smooth crew changes, minimal transport times, weather-independence, and significantly less CO_2 emission per passenger than transport by ship. The company's helicopters also enable standing wind turbines to generate sustainable electricity more quickly, and hoisting operations can reduce worker downtime and increase productivity.

The use-case of helicopters as a vital means to reduce emissions

HeliService helicopters minimise transport times, are weather-independent, and emit significantly less CO_2 per passenger than transport by ship, while enabling standing wind turbines to generate sustainable electricity more quickly. The company also reduces deployment time and flight hours by combining round-trip flights. To strengthen its position and supply partners, it expanded its fleet with two AW139 and one AW169 helicopters in 2023; to a fleet of 4 x AW139 and 4 x AW169 today.

These state-of-the-art helicopters contribute to HeliService's mission to provide first-class solutions for the offshore logistics sector. Since October 2023, customers in Emden and Roskilde have had the option of using SAF-blended fuel to reduce CO_2 emissions by up to 27%.

The positive use-case of helicopters for a CO_2-reduced operation comes down to a number of factors, all of which contribute to a much reduced carbon footprint when factoring in a total occupation of 12 pax.

Helicopters generally have a lower carbon footprint per passenger-kilometer when compared to CTVs. The direct and quicker transportation they provide results in less fuel consumption and emissions per maintenance operation, contributing to overall carbon emissions reduction.

While fuel consumption in litres per hour tends to be a bit higher for helicopters compared to traditional CTVs, this is negated by the fact that they are able to travel at much higher speeds of 260km/h vs. 36 km/h, thus reaching their targeted destinations significantly faster.

Additionally, total carbon emissions are drastically reduced by using helicopters, emitting just 5,11kg of CO_2 per kilometre or 2,21kg. Deploying a CTV instead would raise these numbers to 26,48kg per kilometre, leading to a much higher carbon footprint for each service trip. When amounting all factors to a yearly total distance of 40.000 kilometres, helicopters emit less than a quarter of CO_2 emissions compared to CTVs,

all while being highly independent from weather conditions and hazards at sea.

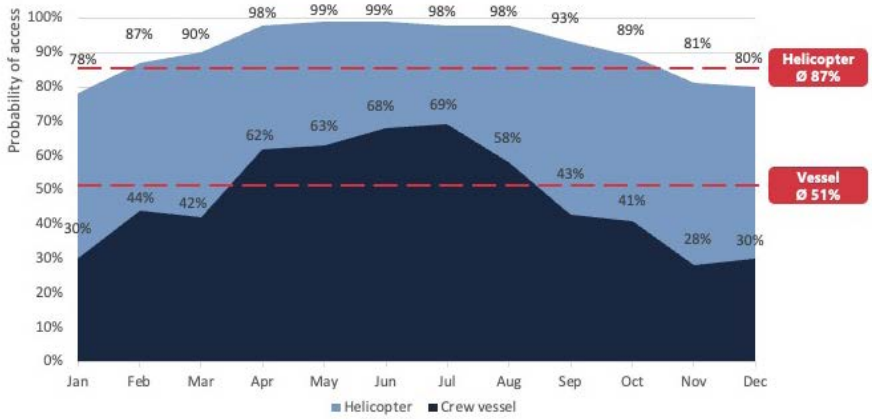
Analysing the emissions for different scenarios at Den Helder Airport

As the need for reducing individual carbon footprints is growing steadily, research has picked up on the issue of diversifying the means of transport at other locations situated near the North Sea as well.

Recently, a team at Den Helder Airport in the Netherlands began researching the emissions for different scenarios in its daily operations, aiming to gather insights into advantages and limitations of CTVs, OSVs and helicopters. First sets of data showed that for a similar distance, helicopters have a lower number of emissions, matching the research done by the HeliService team.

Further scenarios were also tested with regards to the North Sea Agreement. These clearly showed an increase in the total emissions. Replacing passenger transport by vessels is necessary, as the agreement states that the number of flights by helicopter should be reduced.

Thus, this will lead to a total increase in emissions, as has already been measured both by HeliService as well as other partners and companies. With the increase of offshore wind parks, the transport of passengers is likely to increase the coming years. It is unlikely that this increase will make transport of passenger by vessels better or more sustainable in most cases than transport by helicopters.



Estimated average accessibility

The main recommendation of the study from Den Helder Airport suggests abandoning the section in the North Sea Agreement that states that helicopter usage will have to be reduced, since it would, in turn, lead to a drastically increased carbon footprint.

By removing this section more time can be allocated to the intelligent use of the resources that are already in place in the industry, and work towards an actual reduction in emissions. Eventually, this can lead to actual solutions in which all the variables are taken into account that could impact the impact of the operation.

Certainly, predicting the future specifics is challenging, and this applies to the offshore wind industry. Nevertheless, according to current consensus and recent studies, substituting traditional CTVs and OSVs with helicopters is widely acknowledged as a key strategy to diminish carbon footprints for offshore companies as they transition toward a more sustainable future.

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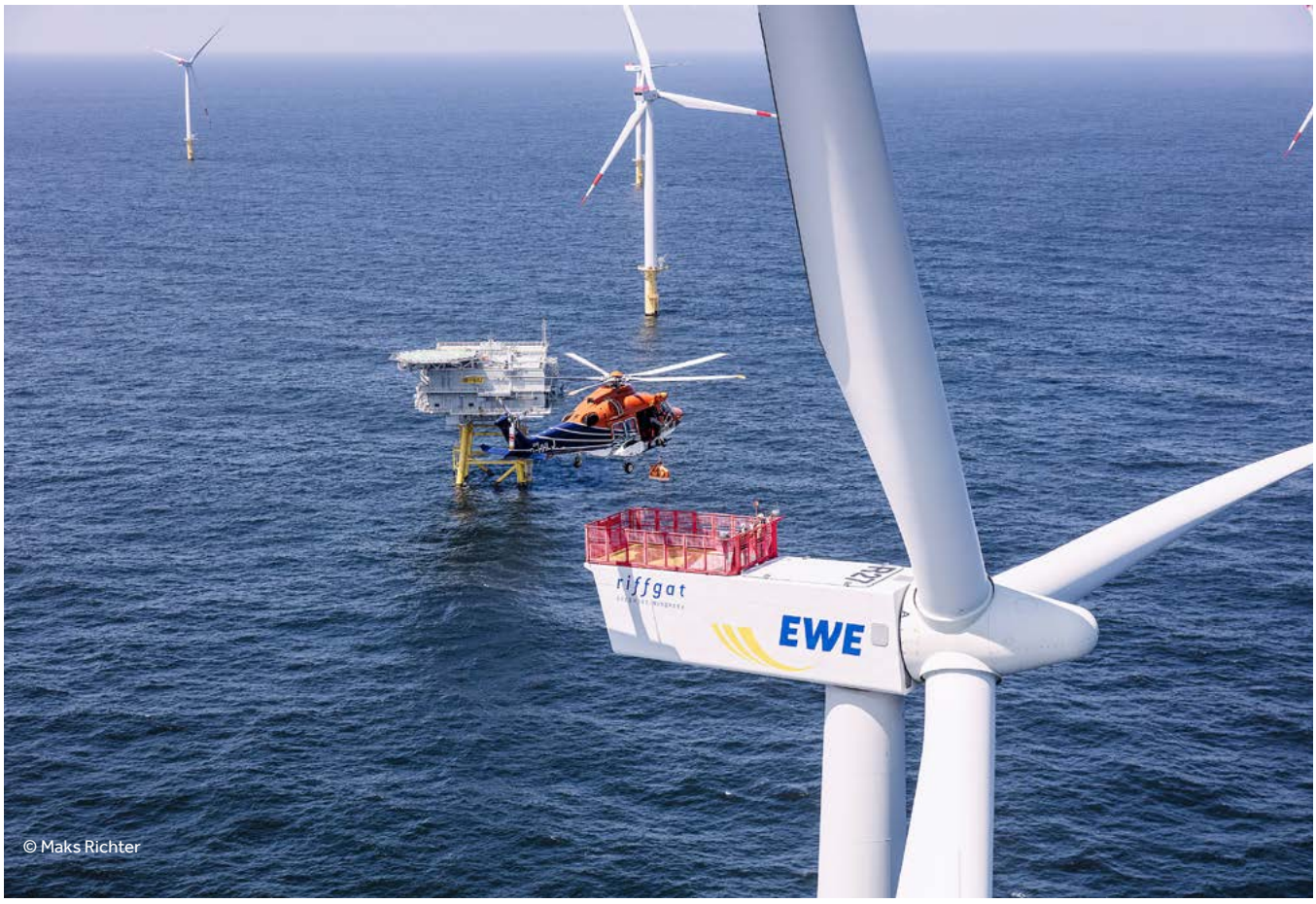

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