

DIRECTION

THE FUTURE OF WIND



WindGuard
Certification
is one of only
10 companies
worldwide to
gain approval
to issue type
certificates.
(Courtesy:
WindGuard)

WindGuard receives approval to issue type certifications for turbines

WindGuard Certification is now among only 10 companies worldwide that have been approved to issue type certificates for wind turbines according to IECRE OD-501 ("Type and Component Certification Scheme – Wind Turbines").

In addition to prototype, type, and component certification, the scope of validity includes design evaluation and site suitability conformity statements. The certificate of acceptance confirms that the internationally operating certification body from Varel, Germany, complies with the requirements of ISO/IEC 17065:2012 as well as the rules and procedures of the IECRE system.

The IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE) established by the International Electro-technical Commission aims to facilitate international trade of products and services in the field of renewable energies.

"Certifications under IECRE guarantee our customers not only highest quality and safety standards, but above all the international recognition of their products," said Jerome Feldhaus, head of type and project certification.

"With our many years of experience in type certification according to IEC 61400-22, we were accredited by the German Accreditation Body (DAkkS) for type certification according to IECRE standards already at the beginning of 2020. The official IECRE recognition was therefore the logical consequence," said Lars Weigel, managing director of WindGuard Certification.

"We are thus optimally positioned for the future and have further strengthened our international market position. The type certificate according to IECRE OD-501 will be a prerequisite for global marketing of wind turbines in the future. For clients from India and the Netherlands,

for example, our IECRE authorization was a decisive criterion for selecting us as their certifier."

MORE INFO www.windguard.de

Vestas unveils solution for landfilling turbine blades

Vestas is presenting a new solution that renders epoxy-based turbine blades as circular, without the need for changing the design or composition of blade material. Combining newly discovered chemical technology developed within the CETEC initiative, and partnerships with Olin and Stena Recycling, the solution can be applied to blades now in operation. Once matured, this will eliminate the need for blade redesign or landfill disposal of epoxy-based blades when they are decommissioned.

"Until now, the wind industry has believed that turbine blade material calls for a new approach to design and manufacture to be either recyclable, or beyond this, circular, at end of life," said Lisa Ekstrand, vice president and head of sustainability at Vestas. "Going forward, we can now view old epoxy-based blades as a source of raw material. Once this new technology is implemented at scale, legacy blade material currently sitting in landfill, as well as blade material in active windfarms, can be disassembled, and re-used. This signals a new era for the wind industry, and accelerates our journey towards achieving circularity."

Turbine blades have previously been challenging to recycle due to the chemical properties of epoxy resin, a resilient substance that was believed to be impossible to break down into re-usable components. This has led to many technology leaders attempting to replace or modify epoxy resin with alternatives that can be more easily

treated. Vestas' solution is enabled by a novel chemical process that can chemically break down epoxy resin into virgin-grade materials. The chemical process was developed in collaboration with Aarhus University, Danish Technological Institute, and Olin the partners of the CETEC project, a coalition of industry and academia established to investigate circular technology for turbine blades.

"The newly discovered chemical process shows that epoxy-based turbine blades, whether in operation or sitting in landfill, can be turned into a source of raw material to potentially build new turbine blades," said Mie Elholm Birkbak, specialist, Innovation & Concepts at Vestas. "As the chemical process relies on widely available chemicals, it is highly compatible for industrialization and can, therefore, be scaled up quickly. This innovation would not have been possible without the ground-breaking CETEC collaboration between industry and academia enabling our progress until this point."

Through a newly established value chain, supported by Nordic recycling leader Stena Recycling and global epoxy manufacturer Olin, Vestas will now focus on scaling up the novel chemical disassembly process into a commercial solution. Once mature, the solution will signal the beginning of a circular economy for all existing and future epoxy-based turbine blades.

"As the leading customer solution provider of innovative epoxy systems, Olin is proud to support the anticipated massive expansion in wind energy worldwide," said Verghese Thomas, vice president, Epoxy Systems and Growth Platforms at Olin. "By utilizing unique technologies, together with our partners, we are ready to recover molecules and convert them into new epoxies that can be re-used in wind-turbine blades. We are excited to bring our expertise and unique asset footprint to this partnership and realize breakthrough sustainable material



Vestas' blade recycling technology can chemically break down epoxy resin into virgin-grade materials. (Courtesy: Vestas)

solutions for existing wind blades and those of the future."

"In the coming years, thousands of turbines will be decommissioned or repowered, representing a major sustainability challenge but also a valuable source of composite materials," said Henrik Grand Petersen, MD Stena Recycling Denmark. "As one of Europe's leading recycling groups with a wide footprint in Europe, we have a central role in the transition to a circular economy. We see this solution as a huge opportunity to take part in making a sustainable solution even more sustainable and circular and are ready to apply our chemical recycling expertise and knowledge to this process."

For several decades, producing wind-turbine blades manufactured with epoxy-based resin has been standard practice in the wind industry. In the most mature markets for wind energy, the first turbines are reaching the end of their operational life. WindEurope expects about 25,000 tons of blades to reach the end of their operational life annually by 2025.

Once mature, the new solution will provide Vestas with the opportunity to produce new turbine blades made from re-used blade material. In the future, the new solution also signals

the possibility to make all epoxy-based composite material a source of raw material for a broader circular economy, potentially encompassing industries beyond wind energy.

MORE INFO www.vestas.com/en

ICR Integrity announces group director hire

ICR Integrity (ICR), technology-enabled provider of specialist maintenance, inspection, and integrity solutions, recently announced the appointment of Ross McHardy as group director.

McHardy's appointment will focus on supporting the global growth and diversification of ICR's repair and maintenance business. He brings a range of experience in senior roles for a number of oil and gas operators including TAQA, EnQuest and latterly at service company EnerMech, where he headed up the Europe and Africa businesses.

His cross-sector knowledge will reinforce ICR's growth plans including working extensively with partners globally.



Ross McHardy is ICR's new group director. (Courtesy: ICR)

"I'm delighted to join ICR at a time of growth and diversification for the company—my experience ranges from engineering and integrity, through to projects, asset management, and business leadership, which will bolster the strong diverse team we have at ICR," McHardy said. "It's an exciting time for the company and I'm looking forward to further successes in 2023."

With more than 30 years of experience in providing solutions for a range of industries, ICR offers clients world class repair and integrity solutions providing greater asset uptime and reliability, while saving time and cost compared to traditional repair methods. In 2022 the company increased its global headcount and posted end of year results showing a 12 percent increase in earnings.

"I'm thrilled to welcome Ross to ICR and the senior leadership team," said CEO Jim Beveridge. "His strong track record and wealth of knowledge will further strengthen our portfolio as we continue to support clients with extensive cross-sector knowledge and multi-skilled teams in power generation, renewables, oil and gas, utilities, and defense industries. Our established repair and maintenance division provides clients with world-class solutions resulting in greater asset uptime and reliability, while saving time and cost compared to traditional methods."

Through our investment in new technology, we are committed to playing our part in energy transition, helping clients reduce their carbon emissions."

MORE INFO www.icr-world.com

Siemens Gamesa, Doosan team up for South Korea market

Siemens Gamesa, provider of wind-power solutions, and Doosan Enerbility, formerly Doosan Heavy Industries, a manufacturer of energy solutions, recently announced the signing of a framework agreement for a strategic partnership for the South Korean offshore wind market. Marc Becker, CEO of Siemens Gamesa's offshore business, and HonGook Park, CEO of Doosan Enerbility's Power Service Business Group, represented the parties at the partnership framework agreement signing ceremony in Hamburg, Germany.

The agreement follows successful exploration of potential cooperation made possible by a memorandum of understanding signed in June 2022. This next step lays the foundation for local content offerings in the South Korean offshore wind market in the future.

The implementation of the partnership scope is subject to successful offshore wind power orders in the South Korean market.

The framework agreement covers three areas for knowledge exchange on technology in which the two companies will collaborate closely in South Korea.

Doosan will assemble Siemens Gamesa's offshore wind turbine nacelles in a Doosan facility now in the design phase, undertake turbine assembly for Siemens Gamesa machines in staging harbors as well as the offshore construction of projects using Siemens Gamesa machines, and perform offshore service on selected orders involving Siemens Gamesa machines.

The alliance between the companies bolsters Korea's burgeoning offshore wind industry.

Among the benefits are efficient and environmentally-conscious local assembly and local job creation to serve the South Korean offshore wind market.

"We are delighted to enter into this framework agreement with Doosan Enerbility," said Marc Becker, CEO of Siemens Gamesa's offshore business. "We are eager to bring our market-leading offshore skills including our unique offshore Direct Drive nacelle technology to South Korea. We will also greatly benefit from Doosan's deep understanding of the Korean market to accelerate the country's energy transition."

In doing so, the partnership intends to promote local job growth and inward investment while delivering clean, green energy."

"Both of us being companies with our own offshore wind turbine models and solid track record, we aim to cooperate on broadening our participation in the Korean offshore wind power market and actively pursue promotion of the domestic offshore wind power ecosystem," Park said.

"Through this partnership, Doosan looks forward to boosting its competitiveness across the overall offshore wind power sector through measures, such as the upgrading of existing products and diversification of models."

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