



## **WALiD demonstrates the successful use of thermoplastics in offshore rotor blades**

WALiD, the European project to introduce thermoplastic materials in offshore rotor blades, has successfully demonstrated that replacing thermosets in the blade root, shear web, spar cap and coating can lead to a lighter, cost-efficient and recyclable blade.

Offshore wind turbines are becoming ever larger and the transportation, installation, disassembly and disposal of these blades are presenting the industry with new challenges. To meet this challenge, European researchers and industry experts partnered to develop highly durable thermoplastic foams and composites, a thermoplastic coating with high erosion and UV resistance and an innovative automated fibre placement process for layup of hybrid fibre tapes resulting in a lighter blade with an improved design and an increase in service life.

Sandwich materials made from thermoplastic foams and fibre-reinforced plastics are used for the outer shell of the blade as well as for segments of the inner supporting structure. The carbon-fibre reinforced thermoplastics are used for areas of the blade that bear the greatest load, whilst glass-fibre reinforces the less stressed areas. The introduction of a modular designed shear web and new ultralight, stiff materials with increased mechanical properties make it quick to manufacture and cost-effective to produce.

The WALiD thermoplastic coating is a protective surface layer that has demonstrated increased durability under harsh conditions. In addition, to support the development of the coatings a new predictive model was validated to model the relationship between surface properties and erosion resistance.

Project partners include Fraunhofer Institute for Chemical Technology (ICT) and Windrad Engineering GmbH from Germany, Smithers Rapra and Smithers Pira Ltd from the UK, TNO Netherlands Organisation for Applied Scientific Research, PPG Industries Fibre Glass BV and NEN from Netherlands, Norner Research AS from Norway, Comfil ApS from Denmark, Loiretech SAS and Coriolis Composites SAS from France.

To learn more about WALiD and the use of thermoplastics in an offshore rotor blade, visit the website at [www.eu-walid.com](http://www.eu-walid.com), follow us on twitter @eu\_walid or check out our LinkedIn group <https://www.linkedin.com/groups/4986026/profile>.

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