

EPOXIES AND ENERGY

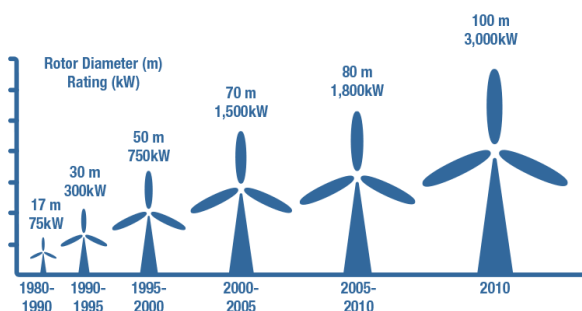
EPOXY RESIN COMMITTEE



Epoxy resins are used both as composites and coatings in the production, transformation and distribution of various types of renewable and non-renewable energy.

Key component of wind turbine blades

In the wind sector, composites of epoxy resins have become a standard component of large-sized windmill rotor blades and are also used in smart grids and turbine insulators. Epoxies are used to coat steel and concrete towers of windmills, as well as to impregnate the concrete or steel itself. Wind turbine poles in the North Sea are coated with epoxy resins to protect the structure from salt water corrosion. Finally, materials created with epoxy resins are an indispensable component in offshore, wind energy farms due to their durability and low brittleness, lightweight and high mechanical strength.



Wind turbines have grown larger and taller over the last 30 years thanks in part to the increased use of epoxy resins. Epoxies improve the strength-to-weight ratio of turbines' structure, allowing the manufacture of longer blades which would be more difficult to produce otherwise. Longer blades, in turn, help the growth of the EU's renewable energy output and European energy exports.¹

Savings category	Reduction assumptions	Savings €m
Investment cost savings	Less windmills to produce the same amount of energy	9.3
Reduced maintenance costs	10%	0.2
TOTAL		9.5

Summary of savings generated by epoxy flooring blades²

Did you know? Wind energy products account for the largest segment of epoxy applications, using up to 51,400 tonnes of epoxy resins produced by ERC members every year. Together with electronics,

¹ 'The Socio-economic Value of Epoxy Resins', 2015

² Epoxy Resins: Silent Enablers of a Sustainable Economy. Market Overview and Socio-Economic Analysis of the European Epoxy Resin Industry, 2010.

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they account for 69,000 tonnes annually, representing the largest segment of epoxy applications in Europe.

Today, up to 50% of the wind energy market may be using epoxy resins. Companies involved in wind energy activities in the EU account for €7 billion in turnover and some €1.5 billion in economic output to the European economy per year.³

³ 'The Socio-economic Value of Epoxy Resins', 2015