

## **Wind Turbine Blade Recycling Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)**

Market Report | 2023-01-23 | 125 pages | Mordor Intelligence

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### **Report description:**

The Wind Turbine Blade Recycling Market is expected to register at a CAGR of approximately 4.5% during the forecast period of 2022-2027. The COVID-19 pandemic has moderately affected the Wind Turbine Blade Recycling Market. Major countries such as China, the United States, and Germany have faced disruptions in decommissioning their wind plants due to unexpected lockdowns, this in turn culminated for the delay in supply of turbine blades for recycling across the globe. The increasing number of offshore and onshore wind energy plants for decommissioning is expected to drive the growth of the market. However rising environmental and economic factors due to pollution occurs due to wind turbine blade recycling is hampering the growth of the market.

### **Key Highlights**

Thermo-Chemical Recycling Process (Pyrolysis) is expected to dominate the market due to its advancement in technology and flexibility in wind turbine blade recycling process.

According to recent survey by University of Cambridge, it is estimated that 43 million tonnes of wind turbine blade waste will be generated by 2050, this will create a huge opportunities for wind turbine blade recycling market.

Europe is likely to witness significant growth for wind turbine blade recycling market during the forecast period due to its favourable government initiatives towards wind turbine blade recycling across the region.

### **Wind Turbine Blade Recycling Market Trends**

Thermo-Chemical Recycling Process (Pyrolysis) to the Dominate the Market

**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: [support@scott-international.com](mailto:support@scott-international.com)

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Wind energy is nowadays one of the energy sources with the fastest growth rate, and it can represent a valuable and economically sustainable solution to the problems of the shortage of fossil fuels and climate change. Global wind energy installed capacity accounted for 837 GW as of 2021. It is carbon-free, and about 85% of turbine components, including steel, copper wire, electronics, and gearing can be recycled or reused.

Recycling and reuse of composite waste is probably the best choice based on the recent EU directives while landfilling is the last option.

Major companies are preferring for thermochemical recycling since it is an advanced technique in which the recovery of the reinforcing fibers through thermal or chemical methods and the matrix (generally with thermosetting nature) is decomposed. In May 2021, Danish wind turbine manufacturer Vestas Wind Systems A/S started a new initiative aiming to make blades fully recyclable and enable circularity for thermoset composites, the material used to make blades. The new technology is said to deliver the final technological step on the journey towards a fully recyclable wind turbine value chain.

Moreover, in March 2022, Kaunas University of Technology (KTU) and the Lithuanian Energy Institute invented a technique for recycling wind turbine blades through a thermochemical recycling process, which involves the breaking of composite materials into basic parts, i.e. fiber and phenol using pyrolysis, this method is essentially waste-free.

Owing to the above points thermochemical recycling (pyrolysis) process is the best technique that dominates the Wind Turbine Blade Recycling Market.

### Europe is Likely to Dominate the Market

Europe has one of the largest wind power installed capacities across the globe. The region is rich in offshore and onshore wind energy generation across the globe. Recently, it has aimed to decommission most of its aged wind plants.

As a part of this, on June 2021, EU Government announced the region will decommission 25,000 tonnes of blades a year by 2025 and 52,000 tonnes a year by 2030. WindEurope, an association based in Brussels that promotes the use of wind power in Europe, has called on landfills to ban decommissioned wind turbine blades by 2025. The initiative includes the commitment of the European wind industry to recycle, reuse or reclaim all decommissioned blades. The ban will become effective by 2025. This in turn culminates in the growth of the wind turbine blade recycling market shortly.

Many countries such as Germany, the United Kingdom, and Spain have pledged not to decommission European blades outside of Europe. Currently, Spain is the second-largest market for wind energy in Europe which joined Wind Europe in this initiative. There is already a ban on landfills in Austria, Germany, Finland, and the Netherlands.

Moreover, in July 2021, Vestas Wind Systems A/S, Europe's largest turbine maker, developed an epoxy that can dissolve and be processed back into the original chemical compounds, making blades recyclable.

Owing to the above points, Europe is likely to dominate the wind turbine blade recycling market during the forecast period.

### Wind Turbine Blade Recycling Market Competitor Analysis

The Wind Turbine Blade Recycling Market is moderately fragmented. Some of the major companies are LM Wind Power (a GE Renewable Energy business), Siemens Gamesa Renewable Energy SA, Vestas Wind Systems A/S, and Veolia Environnement S.A., Arkema S.A.

### Additional Benefits:

The market estimate (ME) sheet in Excel format  
3 months of analyst support

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9 Subject to Availability on Public Domain

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