+357 96 030922
info@marketpublishers.com

Wind Turbine Composite Materials Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

https://marketpublishers.com/r/W58255B16867EN.html
Date: December 2024
Pages: 235
Price: US$ 4,850.00 (Single User License)
ID: W58255B16867EN

Abstracts

The Global Wind Turbine Composite Materials Market reached USD 14.3 billion in 2024 and is expected to grow at a robust CAGR of 6.5% from 2025 to 2034. As the world's demand for renewable energy solutions continues to rise, the need for innovative materials to produce efficient wind turbines becomes increasingly critical. Composite materials play an essential role in the design and production of wind turbine blades, nacelles, and other key components. Their remarkable combination of strength, lightness, and durability makes them ideal for the harsh operating conditions faced by wind turbines. These materials not only help improve the performance and longevity of turbines but also contribute to making wind energy more cost-effective and sustainable. With renewable energy projects expanding globally, the demand for composite materials in wind turbine manufacturing is set to increase, accelerating industry growth.

The market for wind turbine composite materials is primarily segmented by fiber type, with carbon fiber, glass fiber, and others as the key categories. Of these, glass fiber leads the market, generating USD 9.2 billion in revenue in 2024. This segment is also expected to experience the fastest growth due to its cost-effectiveness and exceptional versatility. Glass fiber offers superior tensile strength, corrosion resistance, and a lightweight design, which are critical attributes for producing efficient and durable turbine blades and nacelles. As the wind energy sector increasingly focuses on improving turbine performance, there is a growing demand for longer, more durable blades, which in turn drives the adoption of glass fiber-reinforced composites.

Another key market segment is based on manufacturing methods, which include hand lay-up, vacuum injection molding, prepreg, and others. Among these, vacuum injection molding commands the largest market share, accounting for 44.3% in 2024. This

+357 96 030922
info@marketpublishers.com

manufacturing process is gaining traction due to its ability to produce large-scale components with superior mechanical properties and fewer defects. Vacuum injection molding is particularly effective in crafting turbine blades, as it offers precision, durability, and the lightweight characteristics necessary to improve energy efficiency. Furthermore, the technique allows for enhanced resin penetration, reduced material waste, and faster production speeds, meeting the growing demand for scalable and cost-efficient manufacturing in the wind energy sector.

In the United States, the wind turbine composite materials market was valued at USD 4.2 billion in 2024. This market is experiencing impressive growth, fueled by the nation's strong push toward renewable energy adoption and its commitment to transitioning to a low-carbon economy. Federal policies, including tax credits and incentives for wind energy projects, have played a significant role in boosting wind farm installations, thus driving the demand for composite materials used in turbine production. In addition, advancements in manufacturing technologies and the presence of domestic suppliers of composite materials have further supported market expansion, enhancing cost-efficiency and ensuring the continued growth of the wind energy industry in the U.S.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

CHAPTER 9 COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Wind Turbine Composite Materials Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

Product link: https://marketpublishers.com/r/W58255B16867EN.html

Price: US$ 4,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/W58255B16867EN.html