Carbon Fiber in Wind Turbine Rotor Blade Market to Generate a Revenue of US$ 2,398.89 Million By 2031

CHICAGO, UNITED STATES, July 25, 2023 /EINPresswire.com/ -- Global carbon fiber in the wind turbine rotor blade market is witnessing huge revenue growth of US$ 5,398.89 million by 2031 from US$ 2,972.46 million in 2022. The global market is growing at a compound annual growth rate (CAGR) of 7% during the forecast period from 2023 to 2031.

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As the wind turbine rotor blades market adopts the trend toward increased blade sizes, the use of carbon fiber will likely expand quickly. Wind power companies need cost-effective solutions; a highly efficient product can alter the market's dynamics. In other cases, outdated turbines were changed not owing to damage but rather as more effective blades were sold on the market. In 2021, around 206,592 metric tons of carbon fiber for wind turbine rotor blades were sold, and the sales are likely to rise 14.94% by 2030 to reach an estimated 706,497 metric tons.

Governments and regulatory agencies throughout the world are putting in place beneficial policies, such as feed-in tariffs and renewable portfolio standards, to encourage the use of wind power. This has increased demand for carbon fiber rotor blades even further, along with the falling prices of wind energy production. For instance, the National Renewable Energy Laboratory reports that the cost of a wind turbine has drastically decreased from levels observed a decade ago, falling from $1,800/kW in 2008 to $770-$850/kW.

The demand for carbon fiber in wind turbine rotor blades is likely to rise in the next years owing to the ongoing expansion of renewable energy targets and the growing emphasis on sustainable development. For instance, according to a report by the International Energy Agency, India has already surpassed its goal of 175 GW of renewable energy by 2022 and is predicted to achieve 174 GW by 2023. By 2025, the capacity of the nation's renewable energy sources will increase to

280 GW, making approximately 37% of the nation's overall energy supply.

Regular-Tow Carbon Fiber Type Captured Around 76% of the Market Revenue Share

The Regular-Tow Carbon Fiber Type segment in 2022 attained a revenue share of over 76% of the market, and this segment will continue to dominate the market going forward. Regular-Tow Carbon Fiber's extensive use can be due to its successful track record, dependable supply chain, and affordability compared to other types of carbon fiber. Regular-Tow Carbon Fiber is the material of choice for rotor blade manufacturing among producers and developers in the wind energy market, supporting the segment's leading market position.

51-75 Meter Blade Size Generated More Than 38% of Market Revenue Share

The 51-75 Meter Blade Size segment accounted for more than 38% of market revenue in 2022 and will continue to dominate the market going forward. Both onshore and offshore wind-generating projects frequently use blades with a size of 51 to 75 meters. The market's substantial experience and ability in producing and installing wind turbine rotor blades of this size range drive the growth of the segment.

Asia Pacific to Attain More Than Half of the Revenue Share in the Global Market

In 2022, the Asia Pacific region captured around 60% of the revenue share due to the numerous initiatives taken by market participants. Furthermore, the region is expected to increase at a CAGR of 15.7% from 2023 to 2031. China, India, and Japan are the main sources of demand.

The need for wind power generation is rising by countries like China and India's rapid industrialization, urbanization, and emphasis on renewable energy. With the highest installed capacity of over 281 GW, China still dominates the world market for wind energy. With an installed capacity of over 132 GW, the United States is in second place, closely followed by Germany, India, and Spain, all among the leading producers of wind energy.

In the Asia Pacific region, there has been a significant overall investment in wind energy. Data indicates that between 2010 and 2020, the region saw investments in wind energy projects totaling more than $180 billion. This demonstrates the large financial investment and faith in the possibilities for wind energy in the region. As of 2021, India had the fourth-largest installed wind power capacity worldwide. India's installed wind capacity reached 40.08 GW as of 2021, an increase of 4% from 38.62 GW in 2020. The country now uses 38.5% of its 395 GW of total generation capacity from non-fossil sources.

Thus, the demand for carbon fiber in wind turbine rotor blades in the Asia-Pacific will rise owing to factors including forthcoming wind power projects and supporting government policies and regulations in various nations around the region.

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Top 4 Players Collectively Generate More Than 48% of Market Revenue Share

The market for rotor blades for wind turbines is very fragmented. The four prominent players—Dow Inc., Mitsubishi Rayon, Jiangsu Hengshen, ZOLTEK Corp., and Hyosung Japan—have a combined market share of more than 48%. To increase their market presence, these competitors in the market engage in partnerships, mergers, and acquisitions, and new product releases, among other activities.

List of Prominent Players

- ZOLTEK Corporation
- Mitsubishi Rayon
- Hexcel
- Teijin
- SGL Carbon
- Formosa Plastics Corp
- Dow Inc
- Hyosung Japan
- Jiangsu Hengshen
- Taekwang Industrial
- Swancor Advanced Material Co
- China Composites Group
- Other Prominent Players

Segmentation Outline

The global carbon fiber in wind turbine rotor blade market segmentation focuses on Type, Blade Size, Application, and Region.

By Type
- Regular Tow Carbon Fiber
- Large-Tow Carbon Fiber

By Blade Size
- <27 meter
- 27-37 meter
- 38-50 meter
- 51-75 meter
- 76-100 meter
- 100-200 meter

By Application

- Spar Cap
- Leaf Root
- Skin Surface
- Others

By Region

- North America
  - The U.S.
  - Canada
  - Mexico
- Europe
  - The UK
  - Germany
  - France
  - Italy
  - Spain
  - Poland
  - Russia
  - Rest of Europe
- Asia Pacific
  - China
  - India
  - Japan
  - Australia & New Zealand
  - ASEAN
  - Rest of Asia Pacific
- Middle East & Africa (MEA)
  - UAE
  - Saudi Arabia
  - South Africa
  - Rest of MEA
- South America
  - Argentina
  - Brazil
  - Rest of South America

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