

South & Central America Wind Turbine Composites Market Forecast to 2030 - Regional Analysis - by Fiber Type (Carbon Fiber Composites, Glass Fiber Composites, and Others), Resin Type (Polyester, Epoxy, Polyurethane, Vinyl Ester, and Others), Technology (Resin Infusion, Prepreg, Lay Up, and Others), and Application (Blades and Nacelles)

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Abstracts

The South & Central America wind turbine composites market was valued at US\$ 325.87 million in 2022 and is expected to reach US\$ 666.04 million by 2030; it is estimated to grow at a CAGR of 9.3% from 2022 to 2030.

Adoption of Natural Fiber Reinforced Polymer (NFRP) Composites Fuels South & Central America Wind Turbine Composites Market

A wind turbine consists of several parts such as a hub, gearbox, blades, nacelle, and tower, among which wind turbine blades and nacelle are generally composed of composite materials, including glass and carbon fibers. However, these kinds of fibers are often associated with a certain set of limitations, which include their availability, nonbiodegradability, harmful impact on health, and the fabrication cost involved. The use of natural fibers can overcome all these challenges. The growing environmental issues have shifted the attention of researchers and technologists to the use of natural biodegradable materials, which has bolstered the use of natural fiber-reinforced polymer (NFRP) composites in wind turbine manufacturing.

Natural fibers are defined as those substances which are made from plants, animals, and minerals with the help of geological processes. Natural fibers obtained from kenaf,

bagasse, banana, sisal, flax, hemp, jute, abaca, and bamboo are easily available and need low processing costs. They can be spun together into filaments, threads, or ropes and can be knitted, woven, or matted. The characteristic features of natural fibers might vary considerably according to their chemical composition and structure; fiber type; and fiber's growing conditions, harvesting time, manufacturing method, treatment, and storage processes. Such reinforced composites form a class of materials that exhibit superior mechanical features as well as potentially replace the conventional material systems in wind turbines. The NFRP composites possess certain advantages as compared to synthetic fiber-reinforced composites. These benefits include low density, minimal cost, nonabrasive features, biodegradability, and renewable nature. Hence, the rising concern and awareness about the social and environmental impacts of conventional materials are resulting in the shift toward environment-friendly materials by manufacturers of composites, which is expected to fuel the South & Central America wind turbine composites market growth during the forecast period.

South & Central America Wind Turbine Composites Market Overview

The South & Central America wind turbine composites market is segmented into Brazil, Argentina, and the Rest of South & Central America. Increasing installed wind capacity and elevating investments in wind energy projects are among the factors driving the market growth in South & Central America. Brazil is a key market for wind turbine composites in the region. The country has planned ~86 onshore wind projects for the next five years. Bahia, Rio Grande do Norte, the Rio Grande do Sul, and Piau? are among the states at forefront of investing significant resources in onshore wind energy projects. The onshore wind projects in Brazil that are scheduled to start operating in 2023 include Lagoa dos Ventos Wind Farm Complex, Cajuina Wind Farm Complex, and Anemus Wind Farm. According to the Argentinian Secretary of Energy, renewables accounted for 13% of the country's power mix in 2021, compared to 10% in 2020. In 2021, the government commissioned 26 large-scale renewable projects, adding 1,005 MW to its national grid. Also, 24% of the new renewables capacity was added in 2021 compared to 2020, which was dominated by wind (42%), bioenergy (31%), solar photovoltaic (PV, 15%), and small hydro (12%), collectively representing 97% of the new capacity additions in 2021. Chile is focused on increasing wind installed capacity. Thus, increasing wind installed capacity and rising investments in wind energy projects bolster the South & Central America wind turbine composites market growth in South & Central America.

South & Central America Wind Turbine Composites Market Revenue and Forecast to

2030 (US\$ Million)

South & Central America Wind Turbine Composites Market Segmentation

The South & Central America wind turbine composites market is segmented based on fiber type, resin type, technology, application, and country.

Based on fiber type, the South & Central America wind turbine composites market is segmented into carbon fiber composites, glass fiber composites, and others. The glass fiber composites segment held the largest share in 2022.

By resin type, the South & Central America wind turbine composites market is categorized into polyester, epoxy, polyurethane, vinyl ester, and others. The epoxy segment held the largest share in 2022.

In terms of technology, the South & Central America wind turbine composites market is segmented into resin infusion, prepreg, lay up, and others. The resin infusion segment held the largest share in 2022.

By application, the South & Central America wind turbine composites market is bifurcated into blades and nacelles. The blades segment held a larger share in 2022.

Based on country, the South & Central America wind turbine composites market is segmented into Brazil, Argentina, and the Rest of South & Central America. Brazil dominated the South & Central America wind turbine composites market in 2022.

Avient Corp, Toray Industries Inc, SGL Carbon SE, Owens Corning, Covestro AG, Hexion Inc, and Hexcel Corp are some of the leading companies operating in the South & Central America power and control cable market.

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