

Wind Turbine Protection Market by Equipment (Blades, Nacelles, Towers), Protection Type (Coatings (Epoxy, Polyurethane) and Tapes & Films), End User (Onshore and Offshore), & Region (North America, Europe, APAC, MEA) - Global Forecast to 2029

<https://marketpublishers.com/r/WD3B4D45E2E5EN.html>

Date: July 2024

Pages: 206

Price: US\$ 4,950.00 (Single User License)

ID: WD3B4D45E2E5EN

Abstracts

The wind turbine protection market is forecast to reach USD 2.8 billion by 2029 from an estimated USD 1.7 billion in 2024, at a CAGR of 10.5% during the forecast period (2024-2029). The increasing demand for renewable energy sources, operational cost reduction, and growing need for efficient solutions for longer wind turbine life are the key factors driving the wind turbine protection market.

“Blades: The fastest segment of the wind turbine protection market, by equipment.”

Based on equipment, the wind turbine protection market has been split into four types: Blades, Tower, Nacelle and others. Blades is expected to be the fastest segment in the market. The Wind Turbine Protection market by equipment for blades is critical for ensuring the efficiency and longevity of wind turbines, especially as they operate under intense environmental stress. The leading edges of wind turbine blades are vulnerable to damage from rain, hail, sand, and other environmental factors.

“Coatings segment is expected to emerge as the fastest segment by Protection type.”

Based on Protection type, the wind turbine protection market has been segmented into Coatings, Tapes & films. Coatings is expected to be the fastest segment in the market. The coatings segment in the wind turbine protection market plays a crucial role in enhancing the durability and efficiency of wind turbines. These coatings, crafted from materials such as polyurethanes, epoxies, and fluoropolymers, are applied to various

turbine components to safeguard them from environmental and operational stresses.

“Asia pacific is expected to be the largest region in the wind turbine protection market.”

Asia pacific is expected to be the largest region in the wind turbine protection market between 2024 –2029. The market in Asia pacific comprises China, India, Japan and Australia. The growth of the wind turbine protection market in the Asia pacific region is largely supported by countries like China and India. The Asia Pacific region experiences a wide range of extreme weather conditions, from typhoons in East Asia to cyclones in the Indian Ocean, necessitating robust protection systems for wind turbines.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information, as well as to assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 45%, Tier 2- 30%, and Tier 3- 25%

By Designation: C-Level- 35%, Director Levels- 25%, and Others- 40%

By Region: North America- 50%, Europe- 30%, Asia Pacific- 20%, the Middle East & Africa- 12%, and South America- 8%

Note: Others include product engineers, product specialists, and engineering leads.

Note: The tiers of the companies are defined based on their total revenues as of 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The Wind turbine protection market is dominated by a few major players that have a wide regional presence. The leading players in the Wind turbine protection market are BASF SE (Germany), 3M (US), Akzo Nobel N.V. (Netherlands), Trelleborg AB (Sweden), Hempel A/S (Denmark).

Research Coverage:

The report defines, describes, and forecasts the wind turbine protection market, by

Wind Turbine Protection Market by Equipment (Blades, Nacelles, Towers), Protection Type (Coatings (Epoxy, Poly...

protection type, by equipment, by end user, for various regions. It also offers a detailed qualitative and quantitative analysis of the market. The report provides a comprehensive review of the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates, in terms of value, and future trends in the wind turbine protection market.

Key Benefits of Buying the Report

Rising demand for renewable energy sources, increasing need for efficient solutions for longer life and operational cost reduction of wind turbines are some of the factors driving the wind turbine protection market. High capital investment of wind turbines installation hinder wind turbine protection market growth. Growing R&D towards the improved efficiency of wind protection coating materials offer lucrative opportunities in this market. The Complex maintenance requirements of wind turbines are some of the challenges faced in this market.

Product Development/ Innovation: The developments such as the Leading edge protection and lightning protection systems (LPS) is a pivotal trend in wind turbine protection development. LPS are systems that are embedded within the blade structure to safely conduct lightning strikes to the ground. Leading edge protection are Enhanced materials and coatings applied to the leading edge of turbine blades to protect against erosion caused by rain, dust, and sand.

Market Development: The development of wind turbine protection is essential for maximizing the lifespan and performance of wind turbines, reducing maintenance costs, and ensuring the reliable generation of renewable energy. Favorable government policies promoting energy security, increasing investments in wind energy technologies create wind turbine protection market growth.

Market Diversification: The Sherwin-Williams Company announced the acquisition of European industrial coatings business of Sika AG. The acquired business will become part of the Company's Performance Coatings Group operating segment.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like BASF SE (Germany), 3M (US), Akzo Nobel N.V. (Netherlands), Trelleborg AB (Sweden), Hempel A/S

(Denmark) among others in the wind turbine protection market.

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