

Composite Materials in Renewable Energy Market Outlook 2026-2034: Market Share, and Growth Analysis By Fiber (Fiber-Reinforced Polymers (FRP), Carbon-Fiber-Reinforced Polymers (CFRP), Glass-Reinforced Plastic (GRP), Others), By Application (Solar Power, Wind Power, Hydroelectricity, Others)

<https://marketpublishers.com/r/C0F7930066EBEN.html>

Date: November 2025

Pages: 160

Price: US\$ 3,950.00 (Single User License)

ID: C0F7930066EBEN

Abstracts

The Composite Materials in Renewable Energy Market is valued at USD 18.32 billion in 2025 and is projected to grow at a CAGR of 8.1% to reach USD 36.93 billion by 2034.

Composite Materials in Renewable Energy Market

Composite materials - principally glass and carbon fiber reinforced polymers, hybrid fabrics, cores, and advanced resins - are foundational to modern renewable energy systems. They deliver high stiffness-to-weight ratios, corrosion resistance, fatigue durability, and geometric freedom for blades, nacelles, towers, tidal blades, hydrogen tanks, floating platforms, and balance-of-plant structures. The largest use lies in wind energy, where ever-longer blades and offshore expansion demand low mass, high fatigue performance, and processable materials for large molds. Beyond wind, composites enable lighter PV module frames, structural members for trackers, high-pressure hydrogen storage, and rotor components for tidal and river turbines. Trends include hybrid layups blending glass and carbon, tougher resins with fracture-resistant interlayers, recyclable thermoplastic and vitrimer matrices, bio-based chemistries, and digitalized manufacturing with infusion control, inline metrology, and automated fiber placement. Growth is supported by offshore wind buildouts, repowering of aging fleets, floating wind prototypes moving to arrays, and early hydrogen infrastructure. The competitive landscape spans fiber and resin majors, core and adhesive specialists,

semi-finished kitters, blade/tower OEMs, and service firms for repair, recycling, and lifetime extension. Differentiation centers on fatigue data under realistic environments, out-time robustness, cure speed, infusion viscosity control, and validated design allowables. Key challenges include recyclability of thermoset parts, cost and supply security of carbon fiber, field repairability offshore, and scaling quality across giga-blade factories. As owners prioritize levelized cost of energy, suppliers that pair materials with process recipes, digital QA, and service models for inspection, repair, and circularity are best positioned.

Composite Materials in Renewable Energy Market Key Insights

Wind blades remain the anchor. Longer offshore and high-capacity onshore blades push hybrid glass/carbon spar caps, tougher interlaminar interfaces, and thick-section infusion strategies to meet fatigue life with manageable mass.

Process innovation is pivotal. Fast-cure epoxies, RTM/infusion controls, and automated cutting/layup shrink takt times and scrap; inline NDT and digital twins improve traceability and reduce rework across multi-shift blade halls.

Thermoplastics and vitrimers emerge. Weldable, reformable matrices promise repairability and end-of-life pathways; early adoption focuses on sub-components, moving gradually toward primary structures as data matures.

Cores and adhesives matter. PET/PVC foams and balsa hybrids with toughened adhesives balance weight, cost, and impact resistance; closed-cell cores and peel-stoppers mitigate water ingress and fatigue hot spots.

Climate durability is a gate. Materials must resist UV, salt fog, hydrolysis, freeze-thaw, and sand erosion; gelcoats, coatings, and erosion shields extend leading-edge life, especially for offshore turbines.

Hydrogen creates a second pillar. Type IV/V pressure vessels and composite piping require high burst strength, permeation control, and damage tolerance - expanding demand for carbon fiber and specialized liners.

Floating wind changes specs. Mooring-friendly composite risers, corrosion-proof platforms, and dampers reduce mass and maintenance in deep water, shifting design toward modularity and repair access at sea.

Circularity is moving from pilots to plans. Mechanical, thermal, and chemical recycling of blade scrap and decommissioned parts is being embedded in tenders; materials with recyclability claims gain advantage.

Localization and supply security. Regional blade/tower factories drive local material qualification, dual-sourcing strategies, and kitting services to reduce logistics risk and ensure schedule adherence.

Performance-per-cost rules awards. Owners value validated allowables, fatigue S-N curves, and demonstrated takt in production cells more than peak coupon properties - de-risking LCOE and warranty exposure.

Composite Materials in Renewable Energy Market Regional Analysis

North America

Repowering of aging onshore fleets and coastal offshore programs drive demand for high-fatigue glass fabrics, carbon spar caps, and faster cure systems that fit existing factories. Developers emphasize localized supply chains, kitting near blade halls, and robust service offerings for leading-edge protection and field repairs. Hydrogen pilot corridors create early pull for composite pressure vessels and piping. Procurement weighs recyclability roadmaps and demonstrated production yields alongside performance.

Europe

A mature wind ecosystem with aggressive offshore targets elevates requirements for durability, corrosion resistance, and documented sustainability. Floating wind prototypes transition toward pre-series arrays, favoring lightweight composite substructures and mooring components. Strict EHS and circularity policies push suppliers toward recyclable matrices, certified cores, and take-back programs. Collaborative R&D between OEMs, material majors, and institutes accelerates qualification of thermoplastic and vitrimer solutions.

Asia-Pacific

Scale manufacturing in China and expanding capacity in India and Southeast Asia support rapid blade output and cost-optimized material systems. Japan and Korea focus

on offshore and floating projects, with stringent fatigue and erosion performance. Regional hydrogen strategies begin to formalize composite tank and pipeline specifications. Localization policies encourage regional fiber, resin, and core production, while QC digitalization tackles variability at high volumes.

Middle East & Africa

Utility-scale solar and emerging wind corridors - onshore and select offshore - drive demand for durable, sand-resistant coatings, UV-stable matrices, and robust core/adhesive systems. Hydrogen ambitions linked to export projects spur interest in high-pressure composite storage and composite pipelines. Buyers prioritize materials with proven performance in heat, dust, and saline conditions, supported by local service partners for inspection and repair.

South & Central America

Onshore wind growth and solar expansions emphasize cost-effective glass composites, reliable cores, and adhesives suited to varied climates. Port and logistics constraints make kitting and localized sub-component fabrication attractive. Early hydrogen pilots and port decarbonization open niches for composite tanks and structural elements. Regional integrators play a key role in training, QA standardization, and deploying repair methodologies to extend blade life and reduce downtime.

Composite Materials in Renewable Energy Market Segmentation

By Fiber

Fiber-Reinforced Polymers (FRP)

Carbon-Fiber-Reinforced Polymers (CFRP)

Glass-Reinforced Plastic (GRP)

Others

By Application

Solar Power

Wind Power

Hydroelectricity

Others

Key Market players

Hexcel, Toray Industries, SGL Carbon, Teijin, Mitsubishi Chemical, Owens Corning, Gurit, AOC Aliancys, DSM, HEXPOL, Arkema, Huntsman, Covestro, SABIC, BASF, LyondellBasell, Jushi Group, LM Wind Power (GE)

Composite Materials in Renewable Energy Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modelling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends. Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behaviour are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are incorporated to assess their impact on future market performance.

Composite Materials in Renewable Energy Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption. Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

Countries Covered

North America — Composite Materials in Renewable Energy market data and outlook to 2034

United States

Canada

Mexico

Europe — Composite Materials in Renewable Energy market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Composite Materials in Renewable Energy market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Composite Materials in Renewable Energy market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Composite Materials in Renewable Energy market data and outlook to 2034

Brazil

Argentina

Chile

Peru

* We can include data and analysis of additional countries on demand.

Research Methodology

This study combines primary inputs from industry experts across the Composite Materials in Renewable Energy value chain with secondary data from associations,

government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

Key Questions Addressed

What is the current and forecast market size of the Composite Materials in Renewable Energy industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

Your Key Takeaways from the Composite Materials in Renewable Energy Market Report

Global Composite Materials in Renewable Energy market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Composite Materials in Renewable Energy trade, costs, and supply chains

Composite Materials in Renewable Energy market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Composite Materials in Renewable Energy market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Composite Materials in Renewable Energy market trends, drivers, restraints, and opportunities

Porter's Five Forces analysis, technological developments, and Composite Materials in Renewable Energy supply chain analysis

Composite Materials in Renewable Energy trade analysis, Composite Materials in Renewable Energy market price analysis, and Composite Materials in Renewable Energy supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Composite Materials in Renewable Energy market news and developments

Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

7-day post-sale analyst support for clarifications and in-scope supplementary data, ensuring the deliverable aligns precisely with your requirements.

Complimentary report update to incorporate the latest available data and the impact of recent market developments.

* The updated report will be delivered within 3 working days

Contents

1. TABLE OF CONTENTS

- 1.1 List of Tables
- 1.2 List of Figures

2. GLOBAL COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET SUMMARY, 2025

- 2.1 Composite Materials in Renewable Energy Industry Overview
 - 2.1.1 Global Composite Materials in Renewable Energy Market Revenues (In US\$ billion)
- 2.2 Composite Materials in Renewable Energy Market Scope
- 2.3 Research Methodology

3. COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET INSIGHTS, 2024-2034

- 3.1 Composite Materials in Renewable Energy Market Drivers
- 3.2 Composite Materials in Renewable Energy Market Restraints
- 3.3 Composite Materials in Renewable Energy Market Opportunities
- 3.4 Composite Materials in Renewable Energy Market Challenges
- 3.5 Tariff Impact on Global Composite Materials in Renewable Energy Supply Chain Patterns

4. COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET ANALYTICS

- 4.1 Composite Materials in Renewable Energy Market Size and Share, Key Products, 2025 Vs 2034
- 4.2 Composite Materials in Renewable Energy Market Size and Share, Dominant Applications, 2025 Vs 2034
- 4.3 Composite Materials in Renewable Energy Market Size and Share, Leading End Uses, 2025 Vs 2034
- 4.4 Composite Materials in Renewable Energy Market Size and Share, High Growth Countries, 2025 Vs 2034
- 4.5 Five Forces Analysis for Global Composite Materials in Renewable Energy Market
 - 4.5.1 Composite Materials in Renewable Energy Industry Attractiveness Index, 2025
 - 4.5.2 Composite Materials in Renewable Energy Supplier Intelligence

- 4.5.3 Composite Materials in Renewable Energy Buyer Intelligence
- 4.5.4 Composite Materials in Renewable Energy Competition Intelligence
- 4.5.5 Composite Materials in Renewable Energy Product Alternatives and Substitutes Intelligence
- 4.5.6 Composite Materials in Renewable Energy Market Entry Intelligence

5. GLOBAL COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET STATISTICS – INDUSTRY REVENUE, MARKET SHARE, GROWTH TRENDS AND FORECAST BY SEGMENTS, TO 2034

- 5.1 World Composite Materials in Renewable Energy Market Size, Potential and Growth Outlook, 2024- 2034 (\$ billion)
- 5.1 Global Composite Materials in Renewable Energy Sales Outlook and CAGR Growth By Fiber, 2024- 2034 (\$ billion)
- 5.2 Global Composite Materials in Renewable Energy Sales Outlook and CAGR Growth By Application, 2024- 2034 (\$ billion)
- 5.3 Global Composite Materials in Renewable Energy Sales Outlook and CAGR Growth By Segmentation³, 2024- 2034 (\$ billion)
- 5.4 Global Composite Materials in Renewable Energy Market Sales Outlook and Growth by Region, 2024- 2034 (\$ billion)

6. ASIA PACIFIC COMPOSITE MATERIALS IN RENEWABLE ENERGY INDUSTRY STATISTICS – MARKET SIZE, SHARE, COMPETITION AND OUTLOOK

- 6.1 Asia Pacific Composite Materials in Renewable Energy Market Insights, 2025
- 6.2 Asia Pacific Composite Materials in Renewable Energy Market Revenue Forecast By Fiber, 2024- 2034 (USD billion)
- 6.3 Asia Pacific Composite Materials in Renewable Energy Market Revenue Forecast By Application, 2024- 2034 (USD billion)
- 6.4 Asia Pacific Composite Materials in Renewable Energy Market Revenue Forecast By Segmentation³, 2024- 2034 (USD billion)
- 6.5 Asia Pacific Composite Materials in Renewable Energy Market Revenue Forecast by Country, 2024- 2034 (USD billion)
 - 6.5.1 China Composite Materials in Renewable Energy Market Size, Opportunities, Growth 2024- 2034
 - 6.5.2 India Composite Materials in Renewable Energy Market Size, Opportunities, Growth 2024- 2034
 - 6.5.3 Japan Composite Materials in Renewable Energy Market Size, Opportunities, Growth 2024- 2034

6.5.4 Australia Composite Materials in Renewable Energy Market Size, Opportunities, Growth 2024- 2034

7. EUROPE COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET DATA, PENETRATION, AND BUSINESS PROSPECTS TO 2034

7.1 Europe Composite Materials in Renewable Energy Market Key Findings, 2025

7.2 Europe Composite Materials in Renewable Energy Market Size and Percentage Breakdown By Fiber, 2024- 2034 (USD billion)

7.3 Europe Composite Materials in Renewable Energy Market Size and Percentage Breakdown By Application, 2024- 2034 (USD billion)

7.4 Europe Composite Materials in Renewable Energy Market Size and Percentage Breakdown By Segmentation³, 2024- 2034 (USD billion)

7.5 Europe Composite Materials in Renewable Energy Market Size and Percentage Breakdown by Country, 2024- 2034 (USD billion)

7.5.1 Germany Composite Materials in Renewable Energy Market Size, Trends, Growth Outlook to 2034

7.5.2 United Kingdom Composite Materials in Renewable Energy Market Size, Trends, Growth Outlook to 2034

7.5.2 France Composite Materials in Renewable Energy Market Size, Trends, Growth Outlook to 2034

7.5.2 Italy Composite Materials in Renewable Energy Market Size, Trends, Growth Outlook to 2034

7.5.2 Spain Composite Materials in Renewable Energy Market Size, Trends, Growth Outlook to 2034

8. NORTH AMERICA COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET SIZE, GROWTH TRENDS, AND FUTURE PROSPECTS TO 2034

8.1 North America Snapshot, 2025

8.2 North America Composite Materials in Renewable Energy Market Analysis and Outlook By Fiber, 2024- 2034 (\$ billion)

8.3 North America Composite Materials in Renewable Energy Market Analysis and Outlook By Application, 2024- 2034 (\$ billion)

8.4 North America Composite Materials in Renewable Energy Market Analysis and Outlook By Segmentation³, 2024- 2034 (\$ billion)

8.5 North America Composite Materials in Renewable Energy Market Analysis and Outlook by Country, 2024- 2034 (\$ billion)

8.5.1 United States Composite Materials in Renewable Energy Market Size, Share,

Growth Trends and Forecast, 2024- 2034

8.5.1 Canada Composite Materials in Renewable Energy Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Mexico Composite Materials in Renewable Energy Market Size, Share, Growth Trends and Forecast, 2024- 2034

9. SOUTH AND CENTRAL AMERICA COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET DRIVERS, CHALLENGES, AND FUTURE PROSPECTS

9.1 Latin America Composite Materials in Renewable Energy Market Data, 2025

9.2 Latin America Composite Materials in Renewable Energy Market Future By Fiber, 2024- 2034 (\$ billion)

9.3 Latin America Composite Materials in Renewable Energy Market Future By Application, 2024- 2034 (\$ billion)

9.4 Latin America Composite Materials in Renewable Energy Market Future By Segmentation³, 2024- 2034 (\$ billion)

9.5 Latin America Composite Materials in Renewable Energy Market Future by Country, 2024- 2034 (\$ billion)

9.5.1 Brazil Composite Materials in Renewable Energy Market Size, Share and Opportunities to 2034

9.5.2 Argentina Composite Materials in Renewable Energy Market Size, Share and Opportunities to 2034

10. MIDDLE EAST AFRICA COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET OUTLOOK AND GROWTH PROSPECTS

10.1 Middle East Africa Overview, 2025

10.2 Middle East Africa Composite Materials in Renewable Energy Market Statistics By Fiber, 2024- 2034 (USD billion)

10.3 Middle East Africa Composite Materials in Renewable Energy Market Statistics By Application, 2024- 2034 (USD billion)

10.4 Middle East Africa Composite Materials in Renewable Energy Market Statistics By Segmentation³, 2024- 2034 (USD billion)

10.5 Middle East Africa Composite Materials in Renewable Energy Market Statistics by Country, 2024- 2034 (USD billion)

10.5.1 Middle East Composite Materials in Renewable Energy Market Value, Trends, Growth Forecasts to 2034

10.5.2 Africa Composite Materials in Renewable Energy Market Value, Trends, Growth Forecasts to 2034

11. COMPOSITE MATERIALS IN RENEWABLE ENERGY MARKET STRUCTURE AND COMPETITIVE LANDSCAPE

- 11.1 Key Companies in Composite Materials in Renewable Energy Industry
- 11.2 Composite Materials in Renewable Energy Business Overview
- 11.3 Composite Materials in Renewable Energy Product Portfolio Analysis
- 11.4 Financial Analysis
- 11.5 SWOT Analysis

12 APPENDIX

- 12.1 Global Composite Materials in Renewable Energy Market Volume (Tons)
- 12.1 Global Composite Materials in Renewable Energy Trade and Price Analysis
- 12.2 Composite Materials in Renewable Energy Parent Market and Other Relevant Analysis
- 12.3 Publisher Expertise
- 12.2 Composite Materials in Renewable Energy Industry Report Sources and MethodologyOGAMV25R0020

I would like to order

Product name: Composite Materials in Renewable Energy Market Outlook 2026-2034: Market Share, and Growth Analysis By Fiber (Fiber-Reinforced Polymers (FRP), Carbon-Fiber-Reinforced Polymers (CFRP), Glass-Reinforced Plastic (GRP), Others), By Application (Solar Power, Wind Power, Hydroelectricity, Others)

Product link: <https://marketpublishers.com/r/C0F7930066EBEN.html>

Price: US\$ 3,950.00 (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/C0F7930066EBEN.html>