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# Composites in Oil and Gas Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Fibre Type (Glass Fibre Composites and Carbon Fibre Composites), By Resin Type (Epoxy Resin, Phenolic Resins, Polyester Resin and Others), By Application (Pipes, Top Side Applications, Tanks and Others), By Region & Competition, 2021-2031F

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## Abstracts

The Global Composites in Oil and Gas Market is projected to expand from USD 3.42 Billion in 2025 to USD 5.13 Billion by 2031, registering a CAGR of 6.99%. Composites in this sector are engineered materials, typically comprising a polymer matrix reinforced with carbon or glass fibers, used to manufacture essential components such as spoolable pipes, risers, and subsea structures. The market?s growth is primarily supported by the critical need for corrosion resistance to reduce operational expenditures and a high strength-to-weight ratio that facilitates deep-water exploration by lowering installation loads. These intrinsic properties allow operators to prolong asset service life and minimize fatigue failure risks in harsh marine environments, distinguishing them from temporary market trends like digitalization.

One significant challenge hindering broader market expansion is the absence of universally harmonized standards and certification codes, which often causes hesitation regarding safety validation among conservative operators. To illustrate the robust demand for the materials constituting these systems, the American Composites Manufacturers Association reported that the global market volume for glass fiber, a primary reinforcement for oil and gas composites, reached approximately 16.8 billion pounds in 2024. This figure highlights the substantial industrial reliance on reinforced materials, which persists despite broader economic fluctuations.

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## Market Driver

Technological advancements in spoolable composite pipe manufacturing are revolutionizing the sector by extending the operational scope of non-metallic solutions into ultra-deepwater frontiers. Innovations in Thermoplastic Composite Pipe (TCP) design now permit continuous spooling at high pressures, validating the use of composites for critical subsea flowlines where steel previously dominated. This technical maturity significantly lowers installation costs and overcomes historical depth barriers that limited market adoption; for example, Strohm announced in July 2024 that it secured a contract with TotalEnergies EP Brasil to supply TCP flowlines for a project in the Santos Basin at a depth of 2,200 meters, marking the first time this composite technology was selected for such ultra-deepwater applications.

The escalating demand for corrosion-resistant materials in harsh environments acts as a major financial catalyst, as operators actively replace metallic infrastructure susceptible to stress corrosion cracking. The inherent inertness of composites against corrosive gases like CO2 ensures asset integrity, driving significant procurement activity for leak-proof solutions. For instance, Baker Hughes announced in October 2024 that it received an order to supply Petrobras with 77 kilometers of flexible pipe systems specifically chosen to address stress-induced corrosion issues. This trend aligns with broader market health; according to the International Energy Agency (IEA), global upstream oil and gas investment is expected to increase by 7% in 2024 to reach USD 570 billion, providing the necessary capital liquidity for such material upgrades.

## Market Challenge

The lack of universally harmonized standards and certification codes significantly hampers the growth of the global composites in the oil and gas market by fostering uncertainty among conservative operators. In a sector where safety and reliability are paramount, the absence of globally accepted validation protocols forces decision-makers to rely on traditional metals like steel, which possess established performance histories. This regulatory void necessitates costly, project-specific qualification testing for composites, thereby increasing implementation times and deterring widespread commercial adoption in critical deep-water and high-pressure environments.

This certification bottleneck prevents the industry from fully utilizing the available capacity of high-performance reinforcement materials designed for these rigorous applications. Carbon fiber, for instance, is essential for manufacturing lightweight risers

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and pressure vessels due to its superior mechanical properties; according to the American Composites Manufacturers Association, global demand for carbon fiber reached 300 million pounds in 2024. Despite this substantial industrial scale and material availability, the oil and gas market?s uptake remains constrained because the inconsistency in standards creates a disconnect between material readiness and actual deployment, directly limiting the volume of composites integrated into major offshore and onshore infrastructure projects.

**Market Trends**

Utilization of composites for the rehabilitation of aging metal infrastructure is becoming a critical strategy for operators aiming to extend asset life without costly shutdowns. Unlike full pipeline replacement, composite over-wraps and engineered repairs allow for "cold work" application, eliminating the safety risks associated with welding in volatile hydrocarbon environments while restoring structural integrity against internal pressure and external corrosion. This operational efficiency is driving significant contract activity; according to ICR Integrity in February 2025, the firm finalized a major agreement to deploy its composite repair technologies with a leading multinational oil and gas company, validating the industry?s shift towards maintenance-led cost optimization strategies.

The adoption of automated advanced manufacturing techniques for composite components is accelerating to meet regional demand for non-metallic solutions and reduce supply chain vulnerabilities. Major energy stakeholders are establishing localized, high-tech production facilities that utilize automation to ensure consistent quality and rapid scalability of composite products, such as thermoplastic pipes, which are essential for reducing carbon intensity in transport networks. Illustrating this shift towards localized industrial capability, Aramco announced in January 2025 at the iktva Forum & Exhibition that it officially inaugurated the Novel Non-Metallic Solutions facility, a joint venture specifically engineered to manufacture and commercialize a broad portfolio of composite products within Saudi Arabia.

**Key Market Players**

GE Oil & Gas

Airborne Oil & Gas

Strongwell Corporation

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Enduro Composites Inc.

Schlumberger Limited

Halliburton

ZCL Composites

Vello Nordic AS

National Oilwell Varco

Magma Global Limited

**Report Scope**

In this report, the Global Composites in Oil and Gas Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Composites in Oil and Gas Market, By Fibre Type

Glass Fibre Composites

Carbon Fibre Composites

Composites in Oil and Gas Market, By Resin Type

Epoxy Resin

Phenolic Resins

Polyester Resin

Others

Composites in Oil and Gas Market, By Application

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- Pipes
- Top Side Applications
- Tanks
- Others

Composites in Oil and Gas Market, By Region

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - France
  - United Kingdom
  - Italy
  - Germany
  - Spain
- Asia Pacific
  - China
  - India
  - Japan

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- Australia
- South Korea

South America

- Brazil
- Argentina
- Colombia

Middle East & Africa

- South Africa
- Saudi Arabia
- UAE

**Competitive Landscape**

Company Profiles: Detailed analysis of the major companies present in the Global Composites in Oil and Gas Market.

**Available Customizations:**

Global Composites in Oil and Gas Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

**Company Information**

- Detailed analysis and profiling of additional market players (up to five).

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