

Carbon Credit Market Size and Share Outlook - Forecast Trends and Growth Analysis Report (2025-2034)

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Report description:

The global carbon credit market was valued at USD 2.20 Billion in 2024. The industry is expected to grow at a CAGR of 12.60% during the forecast period of 2025-2034. Regulatory frameworks, including carbon taxes, imposed by governments worldwide have increasingly driven companies to invest in carbon credits for controlling costs and compliance with other second-order policies. In turn, all these factors have resulted in the market attaining a valuation of USD 7.21 Billion by 2034.

Global Carbon Credit Market Report Summary

Description

Value

Base Year

USD Billion

2024

Historical Period

USD Billion

2018-2024

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Forecast Period

USD Billion

2025-2034

Market Size 2024

USD Billion

2.20

Market Size 2034

USD Billion

7.21

CAGR 2018-2024

Percentage

XX%

CAGR 2025-2034

Percentage

12.60%

CAGR 2025-2034- Market by Region

Europe

14.3%

CAGR 2025-2034 - Market by Country

Germany

15.4%

CAGR 2025-2034 - Market by Country

UK

14.8%

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CAGR 2025-2034 - Market by Industry Vertical

Industrial

14.4%

CAGR 2025-2034 - Market by Market Type

Compliance

13.2%

Market Share by Country 2024

Italy

4.2%

Carbon Credit Market Overview

The high demand in the carbon credit market is driven by the development of cap-and-trade schemes, global climate treaties, and corporate sustainability pledges. Recent trends include higher investments in carbon capture technologies, blockchain and AI-based transparent tracking of credits, and the implementation of biodiversity-linked credits. Key players, including energy firms, financial institutions, and technology companies, are now moving in with great urgency to secure high-integrity credits, scale carbon offset projects, and establish global trading platforms to address the growing demand for credible and verifiable emission reduction options.

Carbon Credit Market Growth

Companies are creating sophisticated digital tools based on satellite imagery, AI, and IoT to increase carbon credit accuracy and transparency. Pachama and Sylvera are transforming credit verification to provide credibility in compliance and voluntary markets and engage risk-averse investors. On the other hand, heavy industry sectors like cement, steel, and chemicals are using carbon capture technologies to generate tradeable credits, thereby augmenting the carbon credit market revenues. Technological improvements in the conversion of the captured CO₂ to fuels, building materials, and chemicals are creating new revenue streams while reducing industrial emissions, and thus the market for carbon offsets based on technology is becoming increasingly robust.

Key Trends and Recent Developments

The key trends of the carbon credit market include nature-based offsets, compliance expansion, blockchain transparency, and the emergence of carbon removal technologies.

January 2025

Indonesia announced plans to open its carbon credit market to international purchasers for the first time with 1.7 million credits available for trade. These credits can be purchased by countries as part of their Nationally Determined Contributions (NDCs).

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November 2024

At the UN Climate Change Conference (COP29), Saudi Arabia, the largest oil exporter in the world, launched its first carbon credit exchange, marking a key milestone in its environmental policy.

October 2024

In order to attain carbon neutrality, the Indian government announced plans to sell carbon credits via the Food Corporation of India (FCI)'s optimized logistics. In keeping with India's 2030 emission reduction targets and the objectives of the Paris Agreement, FCI's digital transformation seeks to optimize supply chain operations, lower emissions, and save costs.

September 2024

The Indian government published specific regulations for the planned compliance carbon market under the Carbon Credit Trading Scheme (CCTS). These new laws set out the fundamental design aspects of the compliance process under the CCTS, signifying a significant breakthrough in India's growing carbon pricing regime.

Expansion of Nature-Based Carbon Offsets

Nature-based solutions such as reforestation, wetland restoration, and soil carbon sequestration are becoming increasingly dominant sources, boosting the carbon credit market growth. Companies like Shell and Microsoft invest in large-scale forestry projects for emissions neutrality. These credits provide co-benefits that include biodiversity preservation and water conservation, enabling carbon neutrality firms to leverage them immensely.

Expansion of Compliance Carbon Markets

Throughout the world, governments are tightening up regulations on emissions, pushing further carbon credit market development with regulatory compliance. The European Union Emissions Trading System (EU ETS) and the Chinese National Carbon Market have increasingly compelled various industries to procure allowances from the market. Some of the high-emission sectors, such as energy, aviation, and manufacturing, need to acquire certified carbon credits for appraisal against the cap limits; this in turn creates market liquidity. As more countries implement cap-and-trade systems, the market is expected to grow in a global context.

Blockchain and AI for Carbon Credit Transparency

The carbon credit market trends and dynamics is accelerated by rapid integration of blockchain technology that is enhancing transparency, reducing fraud, and ensuring credits' authenticity. Firms like IBM and Toucan Protocol are incorporating blockchain-based platforms to track credit issuance and retirement. AI-enabled tools for carbon accounting are bringing greater accuracy in verifying credits by accurately assessing emissions reductions.

Development of Carbon Removal Credits

In addition to emissions reductions, technologies such as direct air capture (DAC) are gaining ground as upper-tier carbon credit suppliers. Leaders in scalable DAC projects, such as Climeworks and Carbon Engineering, enable businesses to remove carbon straight from the atmosphere, thereby boosting the carbon credit market revenues. Removal credits, as opposed to traditional offsets that avoid emissions, require real, permanent sequestration of carbon. As the carbon neutrality goals become tighter, carbon removal credits stand to achieve corporate and regulatory decarbonization goals.

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Carbon Credit Market Opportunities

The market observes heavy demand for carbon credits from emerging economies have begun to adopt credit trading through afforestation projects, investments in renewable energy, and sustainable agriculture intervention projects. Corporations can profit from these new markets through high-integrity credits projects that boost local economies and biodiversity. Moreover, corporate entities are increasingly developing dedicated investment funds to treat carbon credits as a stable asset class. Through carbon capture, clean energy, and afforestation projects, companies will be assured of compliance with future carbon regulations in return for their equity contribution from growing demand in voluntary and compliance markets.

Carbon Credit Market Trends

Aggressive net-zero targets set by major corporations increase the demand in the carbon credit market. The aviation, oil and gas, and technology industries leverage offsets into their sustainability strategies to neutralize their share of emissions that cannot be eliminated through direct reductions, thereby propelling the growth of the market. Additionally, the growth of wind, solar, and bioenergy projects generates carbon credits by a reduction of fossil fuel reliance. Governments and businesses alike leverage these to meet carbon reduction goals, thus speeding credit issuance and building a deep market for clean energy-linked carbon offsets.

Carbon Credit Market Restraints

- The carbon credit market is afflicted with non-standard regulation, multiple verification standards, and issues of credit quality. Greenwashing erodes credibility, and it is becoming increasingly difficult for companies to be sure that they are buying legitimate, high-quality offsets.
- Carbon prices are volatile due to policy instability, supply-demand volatility, and speculation. Volatility complicates long-term planning for companies that use carbon offsets, exposing them to financial uncertainty and risks in voluntary and compliance markets.

Carbon Credit Industry Segmentation

The EMR's report titled "Carbon Credit Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

Market Breakup by Type

- Compliance
- Voluntary

Market Breakup by Project Type

- Removal/ Sequestration Projects
- Avoidance/ Reduction Projects

Market Breakup by Industry Vertical

- Power
- Energy

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- Aviation
- Construction
- Industrial
- Others

Market Breakup by Region

- North America
- Europe
- Asia Pacific
- Latin America & Middle East and Africa

Carbon Credit Market Share

Market Insights by Type

The compliance segment is largely boosting the carbon credit market growth as governments introduce stricter emissions controls. Schemes like the EU Emissions Trading System (EU ETS) and China's national carbon market compel firms to purchase allowances, generating demand for regulated credits. The voluntary segment is picking up pace as companies commit to net-zero. Companies like Microsoft and Nestle purchase voluntary offsets from reforestation and carbon removal projects to cancel out emissions. Rising corporate sustainability commitments and investor activism are fueling growth in voluntary and compliance carbon markets worldwide.

Market Analysis by Project Type

As per the carbon credit market analysis, removal/sequestration projects are on the rise as businesses need permanent carbon removal. Technologies such as Direct Air Capture (DAC) and nature-based sequestration (afforestation) produce high-value credits. Businesses such as Climeworks and Carbon Engineering are scaling up these projects to respond to increasing corporate net-zero needs. On the other hand, avoidance/reduction projects use energy efficiency, methane collection, and renewable energy to reduce emissions. Businesses are purchasing these credits to offset inevitable emissions, and industries such as manufacturing and aviation are utilizing waste-to-energy, wind, and solar projects to achieve sustainability and regulatory compliance targets.

Analysis by Industry Vertical

Power & Energy sectors are utilizing carbon credits by investing in carbon capture technology and renewable energy programs to offset emissions from fossil fuel operations. The aviation sector is propelling premium carbon credit demand with airlines shifting towards carbon-neutral expansion by utilizing Sustainable Aviation Fuel (SAF) and offset purchases. Construction & industrial industries are embracing low-carbon materials and carbon capture utilization, generating tradeable credits. The industrial sector is expected to grow at a CAGR of 14.4% over the forecast period. Technology and agriculture industries are also investing in voluntary offsets to fulfill sustainability requirements and investor expectations.

Carbon Credit Market Regional Analysis

North America Carbon Credit Market Opportunities

The North America carbon credit market experiences increasing demand due to increasing corporate net-zero commitments and government-supported initiatives like California's Cap-and-Trade Program. Corporate voluntary offset purchases are eagerly being

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made by companies in the energy, aviation, and technology sectors, while regulatory programs are compelling industries towards the use of compliance credits as a method of reducing carbon footprints.

Europe Carbon Credit Market Insights

Europe holds a major carbon credit market share with the EU Emissions Trading System (EU ETS), the largest compliance market in the world. The market is expected to grow at 14.3% CAGR over the forecast period. Reducing carbon caps and growth of emerging sectors, such as shipping, are boosting demand. Business sustainability regulations, such as the Carbon Border Adjustment Mechanism (CBAM), are also stimulating credit purchasing.

CAGR 2025-2034 - Market by

Country

Germany

15.4%

UK

14.8%

Canada

14.2%

France

13.9%

Japan

12.3%

USA

XX%

Italy

XX%

China

XX%

India

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XX%

Australia

12.1%

Saudi Arabia

XX%

Brazil

XX%

Mexico

XX%

Asia Pacific Carbon Credit Market Growth

As the National Carbon Market keeps expanding, the Asia Pacific region's expanding manufacturing base is driving demand for carbon credits, especially in China. In order to satisfy national and international sustainability targets, governments are also funding reforestation and renewable energy projects, giving businesses more opportunity to offset emissions.

Latin America & Middle East and Africa Carbon Credit Market Outlook

Latin America is emerging as a leading source of nature-based carbon credits through reforestation, conservation of biodiversity, and sustainable agriculture projects. Carbon offset projects in Brazil's Amazon and Colombia's forest projects are being increasingly invested in by companies worldwide. On the other hand, the Middle East and Africa carbon credit market witnesses increasing demand as nations shift towards low-carbon economies. The UAE and Saudi Arabia are investing in renewable energy and carbon capture projects, and Africa's afforestation initiatives and methane abatement projects draw foreign buyers seeking authentic carbon offsets.

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