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Biochar Carbon Credit Market Forecasts to 2032 – Global Analysis By Feedstock Type (Agricultural Waste, Biomass Residue, Forestry Waste, Animal Manure and Other Feedstock Types), Carbon Credit Type, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Biochar Carbon Credit Market is accounted for $304.1 million in 2025 and is expected to reach $1,847.3 million by 2032 growing at a CAGR of 29.4% during the forecast period. Biochar Carbon Credit refers to a tradable environmental asset generated by producing and applying biochar, a stable, carbon-rich material derived from biomass through pyrolysis. When biomass is converted into biochar instead of decomposing or burning, it locks carbon in a stable form, preventing its release as CO? or methane. This long-term carbon sequestration contributes to climate change mitigation and qualifies for carbon credits under various sustainability and carbon trading frameworks. Biochar carbon credits can be sold to organizations or governments seeking to offset emissions, while also promoting soil fertility, water retention, and sustainable agricultural practices, creating environmental and economic value.

Market Dynamics:

Driver:

Rising Focus on Carbon Neutrality

The rising global emphasis on carbon neutrality is catalyzing demand for biochar-based

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carbon credits, positioning biochar as a scalable, nature-based solution for long-term carbon sequestration. Governments and corporations are increasingly recognizing biochar's dual benefits—soil enhancement and verified carbon removal—driving investment and policy support. This momentum is fostering market transparency, certification frameworks, and premium pricing for high-integrity biochar credits, accelerating adoption across agriculture, forestry, and industrial sectors while aligning sustainability goals with tangible climate action.

Restraint:

High Production Costs

High production costs significantly hinder the scalability of biochar projects, limiting their viability in carbon credit markets. These expenses—driven by specialized equipment, feedstock sourcing, and energy-intensive processes—reduce profit margins and deter investment. Small-scale producers struggle to meet certification standards, while buyers face inflated credit prices. As a result, market adoption slows, undermining biochar's potential as a climate mitigation tool and stalling innovation in sustainable soil and waste management solutions.

Opportunity:

Soil Health and Agricultural Benefits

Enhanced soil health and agricultural productivity are pivotal drivers of the biochar carbon credit market. Biochar improves soil fertility and crop yields while sequestering carbon long-term. These agronomic benefits incentivize farmers to adopt biochar, expanding its application across regenerative agriculture. As adoption scales, verified carbon sequestration boosts credit issuance, attracting climate-conscious investors. The synergy between soil restoration and carbon offsetting positions biochar as a dual-impact solution—advancing sustainable farming and strengthening the credibility and growth of carbon credit markets.

Threat:

Standardization Challenges

Standardization challenges hinder the Biochar Carbon Credit Market by creating inconsistencies in measurement, verification, and certification processes. Without

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unified global standards, projects face difficulties in proving carbon sequestration benefits, leading to reduced investor confidence and slower adoption. This fragmentation restricts market transparency and credibility, limiting scalability. As a result, many stakeholders hesitate to participate, ultimately slowing down the growth of biochar initiatives and undermining their potential in climate change mitigation.

Covid-19 Impact

The Covid-19 pandemic initially disrupted the Biochar Carbon Credit Market by slowing biochar production, delaying carbon credit certification, and hampering project financing due to economic uncertainties. However, the crisis accelerated awareness of sustainable practices, with governments and industries prioritizing green recovery initiatives. This renewed focus on climate action and carbon neutrality boosted interest in biochar projects, positioning the market for long-term growth as a resilient tool in post-pandemic sustainability strategies.

The biomass residue segment is expected to be the largest during the forecast period

The biomass residue segment is expected to account for the largest market share during the forecast period because agricultural residues, forestry waste, and organic byproducts offer a cost-effective raw material base while reducing waste disposal challenges. Converting biomass residues into biochar not only lowers greenhouse gas emissions but also enhances soil fertility, ensuring dual environmental and agricultural benefits. This sustainable cycle attracts carbon credit opportunities, boosting market adoption and strengthening climate change mitigation initiatives globally.

The gasification segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the gasification segment is predicted to witness the highest growth rate as it enables efficient conversion of biomass into biochar while simultaneously generating clean syngas for energy production. This dual benefit maximizes resource utilization, reduces reliance on fossil fuels, and enhances carbon sequestration potential. With rising global emphasis on sustainable waste management and renewable energy, gasification-driven biochar production creates substantial opportunities for carbon credit generation, positioning it as a pivotal driver of market growth and adoption.

Region with largest share:

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During the forecast period, the Asia Pacific region is expected to hold the largest market share due to rising commitments to carbon neutrality, sustainable agriculture, and climate-resilient practices. Governments and corporations are increasingly adopting biochar projects to offset emissions while improving soil fertility and crop yields. With abundant biomass resources, countries like China, India, and Japan are leveraging biochar for both waste management and carbon sequestration. Supportive policies, renewable energy integration, and investor interest are further propelling market expansion, making Asia-Pacific a key driver globally.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to stringent climate policies, and corporate net-zero targets. The region benefits from advanced agricultural practices, government-backed carbon initiatives, and rising interest in regenerative farming. Biochar's dual role in sequestering carbon and improving soil fertility is fostering large-scale adoption. Furthermore, increasing participation of industries in voluntary carbon markets and expanding collaborations with carbon credit registries are accelerating investment flows, creating a robust, forward-looking growth trajectory.

Key players in the market

Some of the key players profiled in the Biochar Carbon Credit Market include Carbon Gold Ltd., Pacific Biochar Benefit Corporation, Pyrocal Pty Ltd., Airex Energie Inc., Biochar Now, LLC, Cool Planet Energy Systems, ArSta Eco Pvt. Ltd., Carbofex Oy, PYREG GmbH, Biochar Life, Agri-Tech Producers, LLC, NovoCarbo GmbH, Blackwood Technology B.V., Regen Network Development, Inc., Standard Biocarbon Corporation, Ecoloop Sweden AB, Hubei Jinhefu Biochar Co., Ltd., Charm Industrial, Carbonfuture GmbH and Ecoera AB.

Key Developments:

In July 2025, Carbon Gold now partners with Westland Horticulture—masters of peat-free gardening—to bring enriched biochar into garden retailers, empowering home gardeners to nurture soil, sequester carbon, and heal the earth with simplicity and purpose.

In January 2025, Google has signed a carbon-removal agreement with Charm Industrial

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to sequester 100,000 tons of CO? via biochar by 2030—Charm's first biochar deal—expanding its pyrolysis-based portfolio and reinforcing Google's commitment to scalable, long-term carbon-removal strategies.

Feedstock Types Covered:

- Agricultural Waste
- Biomass Residue
- Forestry Waste
- Animal Manure
- Other Feedstock Types

Carbon Credit Types Covered:

- Voluntary Carbon Credits
- Compliance Carbon Credits

Technologies Covered:

- Pyrolysis
- Gasification
- Hydrothermal Carbonization
- Other Technologies

Applications Covered:

- Agriculture & Soil Improvement

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- Water & Wastewater Treatment
- Energy Production
- Construction Materials
- Other Applications

End Users Covered:

- Farmers & Agricultural Producers
- Waste Management Companies
- Energy & Power Industry
- Construction Industry
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy

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- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE

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Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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