

# The Global Biochar Market 2026-2036

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## Abstracts

Biochar — a carbon-rich solid material produced through the thermochemical conversion of biomass — has evolved far beyond its traditional role as a soil amendment. Today, biochar is a critical enabler of corporate net-zero strategies, a dominant technology in the carbon dioxide removal (CDR) market, and an increasingly important input in construction, water treatment, steel production, energy storage, and advanced materials. In 2024, biochar accounted for 86% of all CDR deliveries globally, establishing it as the most scalable and commercially viable permanent carbon removal technology available.

The report provides detailed market forecasts by application, including agriculture and livestock farming, construction materials, wastewater treatment, air and gas filtration, carbon capture and storage, cosmetics, textiles, 3D printing, polymers and composites, packaging, steel and metals, and energy and power generation. Each segment includes market drivers, technology trends, commercial status, and growth projections through 2036.

Carbon credit market integration is analysed extensively, covering carbon removal credit pricing dynamics (stabilised at approximately \$150/tCO<sub>2</sub>e), corporate procurement strategies, multi-year offtake agreement structures, verification and monitoring technologies including blockchain and IoT, and integration with climate finance mechanisms such as green bonds and blended finance. The report tracks the evolution from traditional carbon offsets to high-integrity permanent removal credits, where biochar commands premium pricing.

Production technology analysis covers slow and fast pyrolysis, gasification, hydrothermal carbonisation, torrefaction, and emerging technologies including microwave-assisted pyrolysis, solar thermal processing, and plasma-enhanced production. Supply chain analysis examines feedstock optimisation, facility location

strategies, transportation logistics, and the \$15.2 billion investment requirement needed to achieve projected market growth.

The regulatory landscape section provides comprehensive coverage of global regulatory framework evolution, regional policies across North America, Europe, and Asia Pacific, carbon market regulations including Article 6 of the Paris Agreement, and quality assurance and certification standards from Puro.Earth, the European Biochar Certificate, and the International Biochar Initiative.

The report profiles 148 companies spanning producers, equipment manufacturers, technology developers, and carbon credit platforms across six continents. Company profiles include business overview, technology, production capacity, product portfolio, carbon credit activities, and strategic developments. From large-scale industrial producers to innovative startups, this section provides comprehensive competitive intelligence for market participants, investors, and strategic planners navigating this high-growth sector.

### **Report Contents include:**

Chapter 1: Introduction — Definition, properties, carbon sequestration, CRC vs traditional offsets, corporate net-zero strategies, global market 2018–2036, forecasts, pricing analysis, supply-demand balance

Chapter 2: Biochar Production — Feedstocks, slow/fast pyrolysis, gasification, HTC, torrefaction, microwave-assisted/solar/plasma technologies, equipment manufacturers, pricing, carbon credits, certification standards, regulations

Chapter 3: Markets for Biochar — SWOT analysis; agriculture and livestock; construction materials; wastewater treatment; air and gas filtration; carbon capture; cosmetics; textiles; 3D printing; ink; polymers and composites; packaging; steel and metals; energy and power generation

Chapter 4: Global Production — Demand by market and region (2018–2036), supply chain analysis, production by feedstock for China, Asia Pacific, North America, Europe, South America, Africa, Middle East

Chapter 5: Carbon Removal Market Integration — Credit market analysis, corporate procurement, verification/monitoring (IoT, blockchain), climate finance (green bonds, blended finance, DFIs)

Chapter 6: Technology Innovation — Next-gen pyrolysis, continuous processing, energy integration, engineered biochar, composites, functionalisation, AI/ML, process optimisation, predictive maintenance, LCA, circular economy

Chapter 7: Regulatory Landscape — International standards, trade requirements, cross-border carbon markets, regional policy (North America, Europe, Asia Pacific), Article 6 implementation, voluntary market governance

Chapter 8: Company Profiles — 148 companies profiled with business overview, technology, capacity, products, and strategy

Chapters 9–10: Research Methodology and References

### **Companies Profiled include:**

A Healthier Earth, Airex Energy, Alcom Carbon Markets Philippines, Amata Green SL, American BioCarbon, Aperam BioEnergia, Applied Carbon, AquaGreen Holding ApS, ArborX, BC Biocarbon, Bella Biochar Corporation, Bio365, Biomacon GmbH, Bio C&C, Biochar GmbH & Co. KG, Biochar Latium, Biochar Now, Biochar Supreme, Bioenergie Frauenfeld, Bioforcetech, Bio-Logical Carbon Ltd., Biomass Energy Techniques, Biomassehof Allg?u eG, Bionika AG, bionero GmbH, Biosorra, BluSky Carbon Inc., British Columbia (BC) Biocarbon Ltd., Capchar Ltd., Carba, Carbofex Oy, Carboforce GmbH, Carboganic, CarboVerte GmbH, Carbo Culture, Carbon Balance Finland Oy, Carbonaires Limited, Carbonloop, CarbonStar Systems, CarbonZero, CarbonZero.Eco, Carbuna AG, Carbon Cycle GmbH, Carbonauten, CarbonCentric, Carbon Cycle GmbH & Co. KG, Carbonis GmbH & Co. KG, Carbons Finland Oy, CarStorCan, Cemex, CharGrow, Charline GmbH, Char Technologies, Charm Industrial, CNF Biofuel AS, Christoph Fischer GmbH, Circle Soil, Circular Carbon, Clean Maine Carbon, Cool Planet Energy Systems, Corigin Solutions, DarkBlack Carbon, DEMIO, Dutch Carboneers, Earthly Biochar, EcoCera, EcoLocked GmbH, EGoS, Energy Ocean GmbH, EnergieWerk Ilg GmbH, Envigas AB, Exomad Green, Explocom GK SRL, Freres Biochar, Frichs Pyrolysis ApS, General Biochar Systems (GBS), Glanris, Grassroots Biochar AB, Green Man Char, Grossenbacher Gr?ngut, Groupe Bordet, H2 bois SA, Hago Energetics, Hempalta Corp and more...

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