

Global Direct Air Capture Market Size Study, by Type (Solid-DAC, Liquid-DAC, Electrochemical-DAC), Application (Carbon Removal, Carbon Utilization) and Regional Forecasts 2025-2035

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Abstracts

The Global Direct Air Capture Market is valued at approximately USD 0.09 billion in 2024 and is projected to accelerate at an extraordinary CAGR of 61.15% over the forecast period 2025–2035, with historical data considered for 2023 and 2024 and 2024 designated as the base year for estimation. Direct Air Capture (DAC) refers to a suite of advanced carbon removal technologies designed to extract carbon dioxide directly from ambient air and either permanently store it or channel it into productive reuse pathways. As net-zero ambitions move from boardroom pledges to enforceable policy roadmaps, DAC is increasingly being positioned as a critical backstop solution for hard-to-abate emissions. The market narrative is being shaped by mounting climate urgency, rising carbon pricing mechanisms, and growing consensus that emission reductions alone will not suffice without large-scale carbon removal.

Momentum in the DAC ecosystem is being carried forward by a convergence of public-sector funding, private capital inflows, and rapid technological iteration. Governments are rolling out incentives, tax credits, and long-term offtake agreements to de-risk early deployments, while energy majors and tech giants are stepping in to lock down future carbon removal capacity. At the same time, breakthroughs in sorbent materials, process efficiency, and system modularization are helping to bring down costs and scale up capture volumes. Nevertheless, the market continues to wrestle with high energy intensity, infrastructure dependencies, and the need for robust CO₂ transport and storage networks, factors which may temper short-term expansion even as long-term fundamentals remain compelling.

The detailed segments and sub-segments included in the report are:

By Type:

Solid-DAC (S-DAC)

Liquid-DAC (L-DAC)

Electrochemical-DAC (E-DAC)

By Application:

Carbon Removal

Carbon Utilization

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

Rest of Europe

Asia Pacific

China

India

Japan

Australia

South Korea

Rest of Asia Pacific

Latin America

Brazil

Mexico

Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

Solid Direct Air Capture (S-DAC) technology is expected to dominate the market over the forecast period, accounting for the largest share of installed capacity and deployments. Its leadership position is underpinned by relative technological maturity,

Global Direct Air Capture Market Size Study, by Type (Solid-DAC, Liquid-DAC, Electrochemical-DAC), Application...

modular design advantages, and easier integration with renewable energy sources. S-DAC systems, which rely on solid sorbents to bind CO₂, are being increasingly favored for scalable, land-based installations near geological storage sites. While liquid and electrochemical DAC technologies continue to gain attention for their long-term efficiency potential, solid-based systems are currently setting the pace for commercial rollout and near-term adoption.

From a revenue perspective, carbon removal applications are presently generating the lion's share of market value. Demand is being fueled by corporations seeking high-integrity carbon removal credits to meet science-based targets and comply with emerging disclosure regulations. Long-term purchase agreements for negative emissions are becoming more common, locking in predictable revenue streams for DAC operators. Carbon utilization, which channels captured CO₂ into fuels, chemicals, and building materials, represents a fast-growing complementary pathway, yet it remains secondary in revenue contribution compared to permanent removal and storage, which commands premium pricing due to its permanence and regulatory alignment.

The regional footprint of the Global Direct Air Capture Market reflects varied policy maturity and infrastructure readiness. North America leads the market, supported by strong federal incentives, advanced carbon storage potential, and early-mover private investments. Europe follows closely, driven by stringent climate regulations, public funding for negative emissions technologies, and cross-border collaboration on carbon management infrastructure. Asia Pacific is anticipated to witness rapid growth during the forecast period as governments in the region begin to incorporate carbon removal into long-term climate strategies, while the Middle East & Africa and Latin America are gradually emerging as strategic locations due to abundant renewable energy resources and favorable geology for CO₂ storage.

Major market players included in this report are:

Climeworks AG

Carbon Engineering Ltd.

Occidental Petroleum Corporation

Exxon Mobil Corporation

Shell plc

BP p.l.c.

Microsoft Corporation

Siemens Energy AG

Mitsubishi Heavy Industries, Ltd.

Honeywell International Inc.

BASF SE

Verdox, Inc.

Heirloom Carbon Technologies

Svante Technologies Inc.

Global Thermostat

Global Direct Air Capture Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period - 2025-2035

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define the market sizes of different segments and countries in recent years and to forecast their values over the coming decade. The report is designed to integrate both qualitative insight and quantitative rigor across all regions included in the analysis. It further outlines key growth drivers, technological challenges, and regulatory dynamics that will shape the future trajectory of the Global Direct Air Capture Market, while identifying high-potential micro-markets and providing a detailed assessment of competitive strategies, partnerships, and innovation pipelines adopted by leading industry participants.

Key Takeaways:

Market estimates and forecasts for 10 years from 2025 to 2035.

Annualized revenue analysis at global and regional levels.

Country-level evaluation across major geographic markets.

In-depth competitive landscape profiling key market players.

Strategic insights into business models and future market positioning.

Integrated demand-side and supply-side assessment of the market.

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