

Carbon Capture and Sequestration Market to Reach \$6.6 Billion by 2034 | Clean Energy Future Ahead

☐☐ CCS Market Surges with 5.8% CAGR | Carbon Capture Technologies Drive Net-Zero Progress

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According to a new report by Allied Market Research, the global [carbon capture and sequestration \(CCS\) market](#) was valued at \$3.7 billion in 2024 and is projected to reach \$6.6 billion by 2034, growing at a CAGR of 5.8% from 2025 to 2034. The increasing urgency to tackle climate change and meet global net-zero emission goals is propelling the adoption of CCS technologies across industries.



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Global Carbon Capture and Sequestration (CCS) market to reach \$6.6B by 2034, driven by net-zero goals & clean energy investments.
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Allied Market Research

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☐ What is Carbon Capture and Sequestration?

Carbon capture and sequestration (CCS) is a key climate technology that captures [carbon dioxide \(CO₂\) emissions](#) from sources like power plants and industrial facilities. The CO₂ is then transported and stored underground in secure

geological formations. This prevents it from entering the atmosphere and contributing to global warming.

CCS is particularly important for hard-to-abate sectors such as:

Cement

Steel

Chemicals

Power Generation

By reducing emissions from these sources, carbon capture and sequestration supports long-term climate goals and complements the deployment of renewable energy.

□ Market Drivers: Clean Energy Investment & Net-Zero Targets

A major growth driver for the carbon capture and sequestration market is the global surge in clean energy infrastructure investments. Governments and corporations are increasingly directing funds toward CCS as part of their decarbonization strategies.

□ Examples:

The U.S. Department of Energy allocated \$1.3 billion to support CCS projects and shared CO₂ transport/storage infrastructure.

Microsoft has entered major carbon removal agreements, including projects in Louisiana and pulp/paper mills, showcasing growing corporate commitment to CCS.

Such initiatives are enhancing scalability, reducing costs, and strengthening investor confidence—boosting CCS as a viable tool for the global energy transition.

□ Market Restraints: Storage Site Limitations

Despite its potential, the CCS market faces challenges, particularly in the availability and security of geological storage sites. Reliable CO₂ storage requires:

Appropriate depth

High porosity

Impermeable rock layers

The high cost and complexity of evaluating these sites can limit adoption. These geotechnical constraints pose a barrier to scaling up CCS across all regions, particularly where suitable storage formations are scarce.

□ Opportunities: Integration with Clean Energy & Industrial Clusters

The growing momentum around decarbonization and sustainability is unlocking significant opportunities for the CCS market:

Integration with hydrogen production

Support for Bioenergy with [Carbon Capture and Storage](#) (BECCS)

Development of industrial CCS hubs

Shared carbon hubs and centralized infrastructure help reduce costs, especially when multiple emitters collaborate in clusters. This model boosts scalability, speeds up commercialization, and reduces financial risks.

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□ Market Segmentation Overview

□ By Type:

Ocean Sequestration

Terrestrial Sequestration

Others

Terrestrial sequestration is expected to grow at a CAGR of 6.1%, driven by natural solutions such as afforestation, reforestation, and soil carbon capture. These nature-based approaches are gaining attention for their cost-effectiveness and scalability.

□□ By Technology:

Pre-Combustion Capture

Post-Combustion Capture

Oxy-Fuel Combustion Capture

Others

Pre-combustion capture leads in growth, projected to expand at 5.9% CAGR. It's favored for its high efficiency and lower energy penalties, especially in integrated gasification combined cycle (IGCC) plants.

□ By End-Use Industry:

Oil & Gas

Power Generation

Iron & Steel

Cement

Others

The power generation segment is projected to grow at a 6.9% CAGR, driven by global efforts to reduce emissions from coal and gas power plants. Government incentives and emission reduction mandates make this a primary sector for CCS integration.

□ Regional Insights

□ Asia-Pacific: Fastest-Growing Region

Asia-Pacific is set to grow at a CAGR of 6.7% through 2034, outpacing other regions due to:

Rapid industrialization

High energy demand

Strong government policies in countries like China and India

Investments in CCS infrastructure and rising environmental awareness support sustained growth across the region.

□ Other Key Regions:

North America: Robust federal funding and leadership in CCS pilot projects.

Europe: Stringent climate regulations and strong cross-border CCS collaborations.

LAMEA: Increasing interest, particularly in the Middle East and Africa, for enhanced oil recovery and emissions control.

□ Leading Players in the CCS Market

Key companies driving innovation and expansion in the carbon capture and sequestration market include:

Siemens A.G.

Fluor Corporation

ExxonMobil Corporation

Chevron Corporation

TotalEnergies

Air Liquide

Linde Plc

Mitsubishi Heavy Industries, Ltd

Carbon Engineering Ltd.

China National Petroleum Corporation

These players are focusing on strategic partnerships, advanced capture technologies, and expanding CCS infrastructure globally.

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□ Conclusion: A Vital Tool for Climate Action

The carbon capture and sequestration market is at the forefront of the global fight against climate change. As both public and private sectors double down on climate commitments, CCS is emerging as a critical bridge technology to decarbonize heavy industries and energy sectors.

With technological innovations, supportive regulations, and increasing investments, the carbon capture and sequestration industry is well-positioned to play a central role in the transition to a low-carbon future. □□

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