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# Carbon Capture & Storage Materials Market Forecasts to 2034 – Global Analysis By Material (Solvents (Amine-Based, Advanced Solvents), Sorbents (Solid Adsorbents), Membranes, Metal-Organic Frameworks (MOFs) and Other Materials), Technology, Application, Storage Method, End User and By Geography

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## Abstracts

According to Stratistics MRC, the Global Carbon Capture & Storage Materials Market is accounted for $4.8 billion in 2026 and is expected to reach $7.6 billion by 2034 growing at a CAGR of 5.9% during the forecast period. Carbon Capture & Storage (CCS) Materials are specialized materials designed to capture, absorb, or adsorb carbon dioxide from industrial emissions or the atmosphere and enable its storage or utilization. These include solvents, sorbents, membranes, and metal-organic frameworks (MOFs). These materials play a crucial role in reducing greenhouse gas emissions and mitigating climate change. Applications span power plants, industrial facilities, and direct air capture systems. Ongoing research focuses on improving efficiency, scalability, and cost-effectiveness of CCS materials to support global decarbonization efforts.

**Market Dynamics:**

**Driver:**

Rising focus on carbon emission reduction

Governments and corporations are setting ambitious net?zero targets, increasing investment in carbon capture technologies. Industries such as power generation, cement, and steel are under pressure to reduce emissions, creating strong demand for

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advanced sorbents and membranes. International agreements like the Paris Accord reinforce the urgency of emission reduction. Public and private funding initiatives are accelerating deployment of CCS projects worldwide. Collectively, the rising focus on carbon emission reduction is the strongest driver of market growth.

**Restraint:**

Limited infrastructure for large-scale deployment

Transport and storage networks for captured CO? remain underdeveloped in many regions. High capital costs discourage smaller firms from investing in CCS facilities. Limited pipeline and storage capacity slows adoption in emerging economies. Regulatory and logistical hurdles add further complexity to scaling projects. As a result, infrastructure limitations remain a key restraint on market expansion.

**Opportunity:**

Development of advanced sorbent materials

Advanced sorbents improve efficiency by capturing CO? at lower costs and higher selectivity. Nanostructured and hybrid materials are enhancing performance in post?combustion capture systems. Research partnerships between universities and industry are accelerating commercialization. These innovations expand CCS applications across power plants, industrial facilities, and transportation. As advanced sorbents mature, they will significantly enhance adoption of CCS technologies.

**Threat:**

Regulatory uncertainties in carbon markets

Inconsistent policies across regions create challenges for long?term investment planning. Volatile carbon pricing reduces incentives for companies to adopt CCS solutions. Delays in establishing clear frameworks discourage private sector participation. Political shifts can alter support for CCS programs, creating instability. Without consistent regulation, investor confidence in CCS materials remains at risk.

**Covid-19 Impact:**

The Covid?19 pandemic disrupted CCS projects due to supply chain interruptions and

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budget reallocations. Many industrial facilities delayed adoption of new technologies during the crisis. However, recovery programs emphasized sustainability, boosting CCS investments post?pandemic. Governments increased funding for green infrastructure as part of economic stimulus packages. The pandemic highlighted the importance of resilient and low?carbon energy systems. Overall, Covid?19 created short?term challenges but reinforced long?term opportunities for CCS materials.

The post-combustion capture segment is expected to be the largest during the forecast period

The post-combustion capture segment is expected to account for the largest market share during the forecast period as it is widely applicable across existing power plants and industrial facilities. Post?combustion systems are easier to retrofit compared to pre?combustion or oxy?fuel methods. Their scalability and compatibility with current infrastructure reinforce dominance. Continuous innovation in sorbents and membranes enhances efficiency. Regulatory support for emission reduction further boosts adoption.

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

Over the forecast period, the mineralization storage segment is predicted to witness the highest growth rate due to its potential for permanent CO? sequestration. Mineralization converts captured carbon into stable solid forms, reducing leakage risks. Expanding research into natural and synthetic mineralization processes accelerates commercialization. Governments are funding pilot projects to validate large?scale feasibility. The technology’s long?term stability makes it attractive for sustainable carbon management. Consequently, mineralization storage will record the highest CAGR during the forecast period.

**Region with largest share:**

During the forecast period, the North America region is expected to hold the largest market share owing to strong government support and advanced infrastructure. The U.S. Department of Energy continues to fund CCS research and deployment projects. Leading energy companies are investing in large?scale CCS facilities. Regulatory frameworks encourage adoption of emission reduction technologies. High demand from power generation and industrial sectors reinforces regional dominance.

**Region with highest CAGR:**

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Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by rapid industrialization and government?backed sustainability initiatives. Countries such as China, India, and Japan are investing heavily in CCS pilot projects. Rising emissions from power and manufacturing sectors create strong demand for CCS materials. Regional collaborations accelerate innovation and deployment. Expanding renewable energy and green infrastructure programs further support adoption.

**Key players in the market**

Some of the key players in Carbon Capture & Storage Materials Market include BASF SE, Shell plc, ExxonMobil Corporation, Chevron Corporation, Equinor ASA, TotalEnergies SE, Linde plc, Air Liquide S.A., Honeywell International Inc., Mitsubishi Heavy Industries, Ltd., Fluor Corporation, Aker Carbon Capture ASA, Climeworks AG, Global Thermostat, Carbon Clean Solutions, Solvay S.A., Evonik Industries AG and Dow Inc.

**Key Developments:**

In March 2026, Chevron, Engie, and GE Vernova entered a Strategic Partnership to develop a 4 GW natural gas plant in the U.S. integrated with CCS technology. This alliance is designed to prove the viability of low-carbon 'dispatchable' power for AI data centers.

In January 2026, Equinor, Shell, and TotalEnergies—the partners behind the Northern Lights project—officially opened the world’s first open-source CO? transport and storage infrastructure. This joint venture provides a 'storage-as-a-service' model for industrial emitters across Europe.

Materials Covered:

Solvents (Amine-Based, Advanced Solvents)

Sorbents (Solid Adsorbents)

Membranes

Metal-Organic Frameworks (MOFs)

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- Other Materials

Technologies Covered:

- Post-Combustion Capture
- Pre-Combustion Capture
- Oxy-Fuel Combustion
- Direct Air Capture (DAC)
- Other Technologies

Applications Covered:

- Power Generation
- Oil & Gas Industry
- Cement & Heavy Industries
- Chemical Processing
- Other Applications

Storage Methods Covered:

- Geological Storage
- Enhanced Oil Recovery (EOR)
- Mineralization Storage
- Ocean Storage

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- Other Storage Methods

End Users Covered:

- Energy & Utility Companies
- Oil & Gas Companies
- Industrial Manufacturers
- Government & Environmental Agencies
- Research Institutions
- Other End Users

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain

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- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

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- Brazil
- Argentina
- Colombia
- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa
  - Egypt
  - Morocco
  - Rest of Africa

**What our report offers:**

- Market share assessments for the regional and country-level segments

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- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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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