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Carbon Capture Solvents Market Forecasts to 2034 – Global Analysis By Solvent Type (Amine-based Solvents, Ammonia-based Solvents, Amino Acid Salts, Ionic Liquids, Blended Solvents and Other Solvent Types), Capture Technology, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Carbon Capture Solvents Market is accounted for $1.9 billion in 2026 and is expected to reach $4.2 billion by 2034 growing at a CAGR of 10.7% during the forecast period. Carbon capture solvents are engineered chemicals designed to remove carbon dioxide from emission sources such as industrial plants and power stations. Typically formulated with amine compounds, they interact with CO? to enable effective separation from gas streams. After absorption, the CO? is extracted through a regeneration step for storage or reuse. These solvents are essential in efforts to curb greenhouse gas emissions and combat climate change. Continuous innovations aim to boost absorption capacity, decrease energy requirements in processing, and improve durability, thereby making carbon capture technologies more cost-effective and environmentally sustainable.

According to the IEA CCUS Projects Database, announced capture capacity for 2030 is ~435 million tonnes (Mt) of CO? per year, while announced storage capacity is ~615 Mt CO? per year.

Market Dynamics:

Driver:

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Increasing focus on net-zero emission goals

The growing emphasis on reaching net-zero emissions is fueling the demand for carbon capture solvents. Governments and businesses worldwide are setting targets to offset their greenhouse gas emissions through reduction and removal strategies. Solvent-based carbon capture systems are crucial in helping industries with high emissions meet these goals. The pressure to achieve climate commitments is driving investments in carbon capture technologies and infrastructure. As environmental awareness strengthens and regulations tighten, the use of carbon capture solvents is anticipated to rise, supporting long-term sustainability and decarbonization efforts globally.

Restraint:

High operational and energy costs

Elevated energy consumption and operational expenses pose a key challenge to the carbon capture solvents market. The regeneration process in solvent-based systems consumes substantial energy to separate CO?, leading to increased costs. Moreover, expenses related to solvent degradation, equipment upkeep, and system installation raise the overall financial commitment. These factors make adoption less feasible for cost-sensitive industries, particularly in emerging economies. As a result, companies may hesitate to implement such technologies, slowing market growth even though carbon capture solutions offer significant environmental advantages.

Opportunity:

Technological innovations in advanced solvents

Continuous progress in developing advanced solvent technologies offers substantial opportunities for the carbon capture solvents market. New formulations are being engineered to deliver higher CO? absorption rates, lower energy usage, and greater durability. These improvements enhance the overall performance and affordability of carbon capture systems. Advanced solvents also allow efficient capture from diluted emission streams, increasing their applicability across various industries. As research efforts intensify, companies focusing on innovation can strengthen their market position and tap into emerging demand for more efficient and sustainable solvent solutions.

Threat:

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Public perception and acceptance challenges

Challenges related to public perception and acceptance can impact the expansion of the carbon capture solvents market. Communities may express concerns about the use of chemical solvents, including potential environmental and health risks. Such apprehensions can lead to resistance against project development and stricter regulatory oversight. Misunderstandings about carbon capture technologies may further reduce public support. To overcome these barriers, companies must focus on clear communication and awareness initiatives. Without gaining public confidence, the widespread adoption of solvent-based carbon capture solutions could be significantly constrained.

Covid-19 Impact:

The outbreak of COVID-19 affected the carbon capture solvents market in both negative and positive ways. During the early stages, industrial slowdowns and movement restrictions reduced emissions, leading to decreased demand for carbon capture systems. Project timelines were disrupted due to supply chain issues, workforce limitations, and lower investment levels. As recovery progressed, governments introduced environmentally focused stimulus plans that encouraged the adoption of clean technologies. This shift revived interest in carbon capture solutions, prompting industries to prioritize sustainability and emissions control, which in turn supported the gradual rebound of the carbon capture solvents market.

The amine-based solvents segment is expected to be the largest during the forecast period

The amine-based solvents segment is expected to account for the largest market share during the forecast period because of their strong performance and extensive use in industrial applications. They are particularly efficient at capturing carbon dioxide from emission streams, which makes them a widely chosen option in sectors such as power generation and manufacturing. Their mature technology and compatibility with existing systems support their leading position. Ongoing advancements have further improved their effectiveness and minimized limitations. Due to these advantages, industries continue to depend on amine-based solvents as a dependable and scalable solution for carbon capture across multiple end-use sectors.

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

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Over the forecast period, the industrial segment is predicted to witness the highest growth rate, driven by rising efforts to limit emissions from major manufacturing sectors. Industries like cement, steel, and chemicals produce large volumes of carbon dioxide, prompting the need for efficient capture solutions. Increasing environmental regulations and corporate sustainability goals are pushing companies to adopt advanced technologies. Solvent-based systems offer a practical method to capture emissions at their origin. With ongoing industrial expansion and heightened environmental awareness, this segment is expected to see significant growth in the use of carbon capture solvents.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to its proactive approach toward emission control and widespread use of carbon capture systems. The region benefits from a strong industrial presence and substantial investments in carbon capture infrastructure. Supportive government measures, including incentives and funding, promote the adoption of advanced technologies. Furthermore, the presence of leading companies and continuous innovation enhances market development. With a growing emphasis on sustainability and reducing carbon emissions in key industries such as energy and manufacturing, the demand for carbon capture solvents in North America remains consistently high.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, fueled by accelerating industrial development and rising energy consumption in key economies like China and India. Increasing emissions from industrial and power sectors are creating a strong demand for carbon reduction technologies. Regional governments are implementing tighter environmental policies and promoting investments in cleaner solutions, including carbon capture systems. Moreover, heightened focus on sustainability and international climate goals is motivating industries to adopt solvent-based technologies, driving significant expansion of the market across the region in the coming years.

Key players in the market

Some of the key players in Carbon Capture Solvents Market include BASF SE, Linde plc, ExxonMobil Corporation, Shell Global, Mitsubishi Heavy Industries Ltd., Aker Solutions (SLB), Honeywell, Fluor Corporation, Carbon Clean Solutions Limited,

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Toshiba Energy Systems & Solutions, Dow Inc., Solvay SA, Air Liquide, Baker Hughes, Tosoh Corporation, Hitachi Zosen Corporation, GE Vernova and Aker Carbon Capture ASA.

Key Developments:

In April 2026, ExxonMobil strengthens collaboration with QatarEnergy to expand international LNG partnership portfolio. The enhanced partnership with QatarEnergy signals ExxonMobil's intent to secure long-term supply stability and expand its international LNG portfolio, showing how major players position themselves to meet energy needs, technological developments, and market growth.

In February 2026, Air Liquide and Holcim reach a new stage in their collaboration with the signing of an agreement to develop a state-of-the-art carbon capture solution for Holcim's near-zero cement plant at Obourg in Belgium. Air Liquide has been pioneering industry decarbonization by developing carbon capture technologies and solutions enabling CCS (Carbon Capture and Storage).

In November 2025, Solvay and Sapio have entered a 10-year agreement to collaborate on renewable hydrogen production at Solvay's Rosignano facility, part of the Hydrogen Valley Rosignano Project aimed at cutting CO2 emissions from Solvay's peroxides operations. Under the agreement, Sapio will construct and manage a 5 MW electrolysis system, powered by a 10 MW photovoltaic installation built by Solvay.

Solvent Types Covered:

- Amine-based Solvents
- Ammonia-based Solvents
- Amino Acid Salts
- Ionic Liquids
- Blended Solvents
- Other Solvent Types

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Capture Technologies Covered:

- Post-combustion Capture
- Pre-combustion Capture
- Oxy-fuel Combustion

Applications Covered:

- Power Generation
- Industrial
- Oil & Gas
- Waste-to-Energy Plants
- Miscellaneous Applications

Regions Covered:

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

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

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam

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- Rest of Asia Pacific
- South America
  - 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

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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 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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Applications (2023-2034) ($MN)
Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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