+357 96 030922
info@marketpublishers.com

Carbon Capture Polymers Market Forecasts to 2032 – Global Analysis By Polymer Type (Polymeric Ionic Liquids, Polymeric Membranes, Porous Organic Polymers, Polyimides and Other Polymer Types), Capture Method (Post-Combustion Capture, Pre-Combustion Capture and Direct Air Capture), End User and By Geography

https://marketpublishers.com/r/C68ECC2204EBEN.html
Date: September 2025
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: C68ECC2204EBEN

Abstracts

According to Stratistics MRC, the Global Carbon Capture Polymers Market is accounted for $3.3 billion in 2025 and is expected to reach $6.8 billion by 2032 growing at a CAGR of 10.7% during the forecast period. Carbon capture polymers are advanced materials engineered to selectively absorb, store, and sometimes release carbon dioxide from industrial emissions, ambient air, or energy systems. Designed with tailored functional groups and porous architectures, these polymers provide scalable, lightweight, and cost-efficient alternatives to traditional sorbents like amines or metal-organic frameworks. Their adaptability across applications ranging from flue gas treatment to direct air capture positions them as a crucial enabler in achieving net-zero and decarbonization goals.

According to the International Energy Agency (IEA), to meet net-zero goals, the annual capacity of CO? capture must scale up to over 1.2 gigatonnes by 2030.

Market Dynamics:

Driver:

Stringent government climate policies and carbon pricing

+357 96 030922
info@marketpublishers.com

Stringent government climate policies, including carbon taxes and emissions trading schemes, are primary market drivers. These mechanisms financially incentivize industrial emitters to adopt carbon capture technologies to mitigate regulatory compliance costs. Additionally, binding international agreements like the Paris Accord compel nations to enact rigorous decarbonization targets. This creates a stable, policy-driven demand for carbon capture polymers, which are essential in separation processes, ensuring a favorable investment landscape for technology developers and materials suppliers.

Restraint:

High capital and operational costs

The significant capital expenditure required for installing carbon capture units and the ongoing operational expenses present a major market restraint. The energy-intensive nature of separation processes, particularly amine-based absorption, elevates operational costs. Moreover, the specialized nature of advanced polymers and membranes contributes to high material costs. These substantial financial barriers can deter widespread adoption, especially among cost-sensitive industries and in regions without strong carbon pricing mechanisms, potentially slowing market penetration and scalability.

Opportunity:

Utilization of captured carbon

The emerging value chain for utilizing captured carbon presents a substantial growth opportunity. Captured CO? can be transformed into valuable products, including polymers themselves, sustainable fuels, and chemicals, creating circular economy models. Additionally, enhanced oil recovery (EOR) remains a significant commercial driver for carbon utilization. This transition from pure sequestration to monetization improves the economic viability of capture projects, thereby stimulating demand for high-performance polymers used in the purification and processing stages.

Threat:

Policy and regulatory uncertainty

+357 96 030922
info@marketpublishers.com

The carbon capture industry is heavily reliant on government incentives, tax credits, and stable climate policies. Sudden political shifts or delays in implementing supportive frameworks can destabilize project financing and investor confidence. Moreover, the lack of a globally unified carbon pricing strategy creates an uneven playing field, potentially stifling investment in new technologies and delaying the widespread deployment of carbon capture polymers.

Covid-19 Impact:

The COVID-19 pandemic initially disrupted the carbon capture polymers market, causing supply chain interruptions and delays in final investment decisions for large-scale projects due to economic uncertainty and lockdowns. However, the crisis also accelerated the focus on a green recovery, with many governments integrating carbon capture into their economic stimulus packages. This renewed emphasis on building back sustainably has ultimately bolstered long-term market prospects and policy support post-pandemic.

The polymeric membranes segment is expected to be the largest during the forecast period

The polymeric membranes segment is expected to account for the largest market share during the forecast period due to its well-established application in gas separation processes, particularly in pre-combustion capture and natural gas processing. Their operational efficiency, scalability, and relatively lower energy consumption compared to liquid amine systems drive adoption. Additionally, continuous innovation in membrane materials, such as mixed matrix membranes, enhances separation performance and chemical resistance, cementing their dominance in this sector.

The direct air capture (DAC) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the direct air capture (DAC) segment is predicted to witness the highest growth rate, fueled by its potential to address emissions from distributed sources and achieve negative emissions. Technological advancements and growing corporate investment in carbon removal credits are key growth catalysts. Moreover, supportive government policies specifically targeting carbon dioxide removal (CDR) are creating a nascent but rapidly expanding market for specialized sorbents and polymers essential for DAC technologies.

+357 96 030922
info@marketpublishers.com

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, driven by supportive federal policies such as the 45Q tax credit in the US, which provides a strong financial incentive for carbon capture and storage (CCS) projects. Furthermore, a high concentration of industrial emitters and significant investments in enhanced oil recovery (EOR) operations create a robust demand for capture technologies. The presence of leading technology providers and extensive CO? pipeline infrastructure further solidifies its dominant position.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, owing to rapidly expanding industrial manufacturing and power generation sectors, particularly in China and India. Growing governmental focus on meeting net-zero commitments is prompting increased investment in clean technology. Additionally, international collaborations and funding for CCS demonstration projects in the region are accelerating technology adoption, creating a high-growth environment for the carbon capture polymers market.

Key players in the market

Some of the key players in Carbon Capture Polymers Market include Air Products and Chemicals, Inc., Air Liquide S.A., Honeywell International Inc., Evonik Industries AG, Fujifilm Corporation, Linde Engineering (Linde plc), UBE Corporation, Grasys JSC, Covestro AG, Novomer Inc., TotalEnergies SE, BASF SE, Shell plc, SK Innovation Co., Ltd., Carbon Clean Solutions Ltd. and Newlight Technologies, Inc.

Key Developments:

In November 2024, UBE Corporation announced today that it has launched new composite products designed to help reduce greenhouse gas (GHG) emissions and environmental impact. These composite products employ recycled carbon fiber with traceability, leveraging the technologies behind UBE's long track-record in developing engineering plastics.

In July 2023, Vallourec and Evonik Industries AG have recently signed a Memorandum of Understanding (MoU) for the development of tubular solutions for Carbon Capture, Utilization and Storage (CCUS). As part of the collaboration, the companies will work to

+357 96 030922
info@marketpublishers.com

develop an innovative, corrosion-resistant CO2 transportation technology for the CCUS industry and thereby address one of the key challenges of CO2 transportation and storage.

In April 2023, Linde announced it has signed an agreement with Heidelberg Materials, one of the world's largest building materials companies, to jointly build, own and operate a large-scale carbon capture and liquefaction facility.

Polymer Types Covered:

- Polymeric Ionic Liquids (PILs)
- Polymeric Membranes
- Porous Organic Polymers (POPs)
- Polyimides
- Other Polymer Types

Capture Methods:

- Post-Combustion Capture
- Pre-Combustion Capture
- Direct Air Capture (DAC)

End Users Covered:

- Power Generation
- Oil and Gas
- Cement Manufacturing
- Iron and Steel Production

+357 96 030922
info@marketpublishers.com

- Chemical and Petrochemical
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India
  - Australia

+357 96 030922
info@marketpublishers.com

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

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 2024, 2025, 2026, 2028, and 2032
- 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

+357 96 030922
info@marketpublishers.com

- 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

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

9 KEY DEVELOPMENTS

10 COMPANY PROFILING

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Carbon Capture Polymers Market Forecasts to 2032 – Global Analysis By Polymer Type (Polymeric Ionic Liquids, Polymeric Membranes, Porous Organic Polymers, Polyimides and Other Polymer Types), Capture Method (Post-Combustion Capture, Pre-Combustion Capture and Direct Air Capture), End User and By Geography

Product link: https://marketpublishers.com/r/C68ECC2204EBEN.html

Price: US$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/C68ECC2204EBEN.html