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Oil and Gas Carbon Capture and Storage Market Forecasts to 2032 – Global Analysis By Technology (Pre-Combustion Capture, Post-Combustion Capture and Oxy-Fuel Combustion Capture), Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Oil and gas carbon capture and storage Market is accounted for $4.6 billion in 2025 and is expected to reach $12.4 billion by 2032 growing at a CAGR of 15.2% during the forecast period. Oil and gas carbon capture and storage (CCS) lowers carbon dioxide (CO?) emissions from fossil fuel activities. In this method, CO? generated during extraction and processing is captured, transported via pipelines, and stored in subterranean geological formations such as deep saline aquifers or depleted oil fields. By keeping CO? from entering the atmosphere, CCS enhances the production of cleaner energy in the oil and gas sector and helps slow down global warming.

According to the International Energy Agency (IEA), the oil and gas industry is involved in 90% of current global carbon capture, utilization, and storage (CCUS) capacity.

Market Dynamics:

Driver:

Corporate sustainability initiatives

Corporate sustainability initiatives are substantially propelling the carbon capture and storage market in the oil and gas sector as corporations encounter mounting pressure to diminish their carbon emissions. Prominent oil companies such as ExxonMobil, Shell,

and Chevron are using carbon capture and storage technology to meet their net-zero emissions objectives. These activities are reinforced by shareholder demands for ecologically sustainable practices and the increasing emphasis on ESG (environmental, social, and governance) performance measures. The dual advantage of sequestering CO? for improved oil recovery and mitigating emissions offers economic incentives that render sustainability measures financially feasible for oil and gas enterprises.

Restraint:

Regulatory uncertainties

Regulatory ambiguities are substantial obstacles to the expansion of the oil and gas carbon capture and storage business. The absence of uniform regulations across areas generates compliance challenges for organizations operating globally. Unresolved inquiries persist concerning long-term accountability for sequestered CO?, permitting protocols, and monitoring obligations across numerous jurisdictions. Moreover, changing political environments might result in policy reversals, complicating long-term planning. The lack of clear and consistent legal frameworks heightens investment risks and dissuades potential stakeholders from engaging in CCS projects; hence, it impeds market growth and technological adoption within the oil and gas industry.

Opportunity:

Government investments and incentives

Government investments and incentives offer significant prospects for the carbon capture and storage business in the oil and gas sector. Policies such as the U.S. 45Q tax credits and the Inflation Reduction Act offer substantial financial assistance, rendering CCS projects economically feasible. In 2022, the U.S. Department of Energy designated $8.5 billion for carbon capture and storage infrastructure. Furthermore, global climate accords are compelling governments across the globe to establish conducive frameworks for emission reduction technologies. These incentives diminish financial obstacles to entrance and expedite technology implementation, fostering advantageous conditions for industry growth.

Threat:

CO? leakage risks

The hazards of CO? leakage provide a substantial threat to the carbon capture and storage sector within the oil and gas industry. Possible leakage from subterranean storage facilities may compromise the environmental advantages of CCS and adversely affect the public image of the technology. Geological variables, such as seismic activity and formation integrity, exacerbate these hazards, especially at offshore storage sites. Moreover, legacy oil and gas wells in designated storage regions present possible conduits for CO? leakage. These safety concerns not only present technological obstacles but also hinder regulatory clearances and insurance coverage.

Covid-19 Impact:

The COVID-19 epidemic exerted diverse effects on the oil and gas carbon capture and storage business. The construction and execution of CCS projects saw considerable delays due to supply chain disruptions, workforce shortages, and lockdown restrictions. The economic downturn diminished industrial operations and carbon emissions, momentarily alleviating the necessity for CCS systems. Furthermore, corporations deferred numerous proposed initiatives as they reallocated resources to address urgent pandemic-related issues. Post-pandemic economic recovery policies have progressively integrated CCS investments into sustainable growth programs, thereby underscoring the enduring significance of carbon capture technologies.

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. This supremacy arises from its adaptability in retrofitting current oil and gas infrastructures without necessitating significant operational modifications. The method efficiently isolates CO? from flue gases post-combustion, rendering it especially appropriate for power plants and industrial industries. Moreover, continual progress in solvents, membrane technologies, and absorption processes is enhancing efficiency while diminishing energy penalties and operational expenses. The segment benefits from extensive commercial deployment experience, providing proven reliability that attracts investment from cautious industry stakeholders.

The midstream CO? transport & storage operators segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the midstream CO? transport & storage operators segment is

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predicted to witness the highest growth rate, propelled by the swift development of carbon capture infrastructure and storage facilities. This sector is experiencing advantages from rising investments in pipeline networks and geological storage facilities, especially in areas with conducive subsurface formations such as depleted oil fields and saline aquifers. Moreover, the establishment of CO? transport and storage hubs facilitates economies of scale by servicing many capture plants, thereby substantially decreasing per-ton handling expenses. Additionally, midstream operators are using their existing skills in oil and gas infrastructure while developing new abilities for long-term CO? management, which helps create new sources of income in the changing low-carbon economy.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. This supremacy is ascribed to strong governmental backing, encompassing significant tax incentives such as the 45Q credit program and the terms of the Inflation Reduction Act. The region possesses considerable expertise in CCS technology, originating from its initial deployment in 1978 in California. Moreover, North America has extensive geological storage capacity and a robust infrastructure for CO? transportation. Furthermore, prominent energy corporations based in the region are committing substantial resources to extensive CCS initiatives, exemplified by ExxonMobil's Houston CCS Hub, which intends to sequester up to 100 million tons of CO? each year by 2040.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Swift industrialization and heightened promises of decarbonization in significant economies like China, Japan, and India propel this rapid expansion. The region, accountable for almost 50% of global CO? emissions, is experiencing significant governmental activities, including China's 14th Five-Year Plan, which prioritizes CCUS to diminish emissions by 10 million tons per year by 2030. Moreover, developments in catalytic conversion are generating economic incentives by converting captured CO? into useful products. Furthermore, heightened expenditures in infrastructure and public-private partnerships are expediting the deployment of CCS across several industrial sectors.

Key players in the market

Some of the key players in Oil and gas carbon capture and storage Market include ExxonMobil Corporation, Shell plc, Chevron Corporation, Occidental Petroleum, Aker Carbon Capture, Air Liquide, Air Products and Chemicals Inc., Schlumberger Limited (SLB), Baker Hughes, Equinor ASA, TotalEnergies SE, Linde PLC, Canadian Natural Resources Ltd, QatarEnergy, Fluor Corporation, Mitsubishi Heavy Industries Ltd., ENEOS Corporation and Eni SpA.

Key Developments:

In December 2025, Exxon Mobil is “well along” in a plan to build its first commercial power plant, fueled by natural gas, to directly supply electricity to data centers, the company announced. It’s a new venture for the Spring-based oil and gas giant, which has in previous years defied pressure to get into the electricity business as other oil majors experimented with — and then moved away from — renewable energy.

In September 2024, Shell opens new tab, Equinor (EQNR.OL), opens new tab and TotalEnergies (TTEF.PA), opens new tab said on Thursday their carbon dioxide (CO2) storage project on Norway's west coast is now completed and ready to receive CO2, with its first deliveries expected next year.

In August 2024, Chevron was awarded a greenhouse gas assessment permit offshore Western Australia. The G-18-AP permit covers an area of approximately 8,467 km? with water depths of 50-1100m. The permit area will be evaluated as part of a hub for storing third-party emissions, including those from Chevron's operated LNG assets.

Technologies Covered:

- Pre-Combustion Capture
- Post-Combustion Capture
- Oxy-Fuel Combustion Capture

Applications Covered:

- CO? Utilization
- CO? Storage

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End Users Covered:

- Upstream Oil & Gas Companies
- Midstream CO? Transport & Storage Operators
- Downstream Operations
- Natural Gas Processing Plants
- Power Generation from Oil & Gas

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

Asia Pacific

Japan

China

India

Australia

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

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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 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
- 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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