

Enhanced Oil Recovery (EOR) with CO₂ Market Forecasts to 2034 – Global Analysis By Reservoir Type (Sandstone Reservoirs, Carbonate Reservoirs and Shale Reservoirs), Injection Technique, CO₂ Source, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Enhanced Oil Recovery (EOR) with CO₂ Market is accounted for \$5.2 billion in 2026 and is expected to reach \$7.3 billion by 2034 growing at a CAGR of 4.2% during the forecast period. CO₂-based Enhanced Oil Recovery (EOR) is a sophisticated oil extraction method applied in depleted reservoirs where conventional recovery techniques lose effectiveness. Carbon dioxide is injected into underground formations, where it interacts with trapped crude oil, lowering its viscosity and enabling easier movement toward production wells. The injected gas helps sustain reservoir pressure and may partially dissolve in the oil, improving overall recovery rates. This approach increases output from mature oil fields while providing a use for captured CO₂ emissions. It supports improved hydrocarbon recovery and aligns with environmental efforts to manage carbon and enhance resource efficiency in the energy sector.

According to the U.S. Department of Energy (DOE), CO₂-EOR projects in the United States have the potential to recover up to 85 billion barrels of technically recoverable oil, while simultaneously storing large volumes of CO₂ underground. This positions CO₂-EOR as both an energy security and carbon management strategy.

Market Dynamics:

Driver:

Rising energy demand & mature field depletion

Growing global energy needs combined with declining production from aging oil fields are key factors driving the CO₂ enhanced oil recovery market. As easily accessible reserves diminish operators turn to advanced recovery methods to extract more crude oil from existing wells. Injecting carbon dioxide improves oil flow characteristics and increases overall recovery efficiency making mature fields economically productive again. Rising energy consumption particularly in emerging economies further accelerates adoption. Oil producers aim to prolong field life and reduce dependence on new exploration. This imbalance between supply and demand encourages widespread investment in CO₂ based recovery technologies across global oil regions.

Restraint:

High capital and operational costs

Substantial upfront investment and high operating expenses significantly limit the growth of the CO₂ enhanced oil recovery market. Establishing such projects involves costly infrastructure like pipelines compression units and injection equipment. Moreover continuous costs related to capturing carbon dioxide transporting it and monitoring reservoir performance add to financial burden. Smaller oil companies often struggle to afford these requirements particularly where funding options are limited. Extended recovery periods and uncertain profitability further reduce attractiveness. Compared to traditional extraction methods the economic pressure of setting up and maintaining CO₂ based systems makes adoption challenging across several developing and mature oil producing regions globally.

Opportunity:

Expansion of carbon capture and storage (CCS) integration

Combining carbon capture and storage systems with CO₂ enhanced oil recovery creates a strong growth opportunity for the market. Captured carbon dioxide from industrial processes can be reused in oil extraction while also lowering overall emissions. This dual advantage encourages funding from both energy producers and environmental organizations. Supportive government policies and incentives for CCS development further drive adoption. As industries focus on reducing carbon footprints CO₂ EOR provides an effective method for utilizing captured emissions efficiently. Expanding CCS infrastructure such as transport networks and storage sites will improve

CO2 availability and support large scale implementation of recovery projects worldwide.

Threat:

Transition toward renewable energy sources

The worldwide movement toward renewable energy represents a major challenge for the CO2 enhanced oil recovery market. Increasing investments in solar wind and other clean energy sources are reducing reliance on fossil fuels which directly impacts oil demand. Government commitments to net zero emissions and climate goals are accelerating this transition. As a result, energy companies are shifting capital away from traditional oil extraction toward renewable energy projects. This long term change in the global energy structure reduces the necessity for enhanced oil recovery methods. Gradually this transition may limit expansion opportunities for CO2 based oil recovery technologies across global markets.

Covid-19 Impact:

The COVID-19 outbreak severely affected the CO2 enhanced oil recovery market as worldwide restrictions disrupted industrial activity and reduced energy demand. Sharp declines in oil prices created financial pressure on operators forcing many projects to be postponed or stopped temporarily. Oil companies reduced investments and capital spending due to uncertain market conditions. Workforce limitations and travel bans further delayed construction maintenance and operational activities. Supply chain disruptions also impacted the availability of equipment and CO2 transport systems. Lower global fuel consumption reduced short term demand for enhanced oil recovery methods. However, the market has started recovering gradually as economic conditions improved globally.

The sandstone reservoirs segment is expected to be the largest during the forecast period

The sandstone reservoirs segment is expected to account for the largest market share during the forecast period because of their suitable geological characteristics and extensive global presence. These formations generally exhibit good permeability and porosity enabling efficient movement of injected carbon dioxide and better interaction with trapped oil which enhances recovery performance. Their more consistent and uniform structure allows easier prediction of reservoir behaviour and simplifies CO2 injection planning compared to other reservoir types. Furthermore, a large number of

aging oil fields worldwide are located in sandstone formations making them highly suitable for enhanced oil recovery operations. The ease of use and proven effectiveness support their leading market position.

The independent oil & gas operators segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the independent oil & gas operators segment is predicted to witness the highest growth rate as they increasingly focus on boosting output from mature and marginal oil fields. These operators typically manage smaller assets where CO₂ injection offers an economical way to improve recovery without investing heavily in new exploration. Their flexible operational structure enables quicker adoption of advanced recovery technologies compared to larger state owned companies. Furthermore collaborations with technology firms and carbon capture providers are improving access to CO₂ supply and technical expertise. This combination of agility and partnership driven growth supports strong expansion potential in this segment.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share because of its highly developed oil production systems and long standing expertise in enhanced recovery techniques. The region especially the United States contains numerous mature oil fields where carbon dioxide injection has been implemented extensively for many years. Abundant CO₂ supply from industrial emissions and natural underground sources enables large scale project execution. Supportive government policies regulatory approval systems and continuous technological innovation further strengthen market leadership. In addition, the presence of major energy corporations and sustained investments in recovery technologies reinforce North America's position as the leading region in the global CO₂ EOR market.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by surging energy consumption and a strong emphasis on boosting local oil output. Nations including China India and Indonesia are increasingly investing in advanced recovery methods to lower reliance on imported crude. The region also contains numerous mature and partially developed oil fields that provide significant opportunities for CO₂ injection based recovery. Government policies promoting energy independence and industrial expansion further support market growth. In addition,

collaborations with global oil companies and technology providers are speeding up development making Asia Pacific the most rapidly expanding region worldwide.

Key players in the market

Some of the key players in Enhanced Oil Recovery (EOR) with CO₂ Market include Occidental Petroleum, Chevron Corporation, ExxonMobil, Shell plc, BP plc, TotalEnergies, Denbury Inc., Kinder Morgan, Pemex, Petrobras, Eni S.p.A., Equinor ASA, China National Petroleum Corporation (CNPC), Sinopec, Repsol, Schlumberger (SLB) and Halliburton.

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 April 2026, TotalEnergies and Masdar have signed a binding agreement to establish a \$2.2 billion joint venture aimed at expanding renewable energy capacity in nine countries across Asia. The joint venture will have a portfolio capacity of 3 GW of operational assets and 6 GW of assets in advanced development, which are expected to be operational by the end of the decade.

In October 2025, bp pulse has extended its agreement with Transport for London (TfL) to 2029, continuing its commitment to providing reliable charging solutions across London. Since the framework began in 2018, bp pulse has been instrumental in supporting the adoption of electric vehicles, particularly for the ride-hail and taxi sectors.

Reservoir Types Covered:

Sandstone Reservoirs

Carbonate Reservoirs

Shale Reservoirs

Injection Techniques Covered:

Miscible CO₂ Flooding

Immiscible CO₂ Flooding

CO₂ Sources Covered:

Natural CO₂ Reservoirs

Industrial Emissions

Applications Covered:

Onshore Oilfields

Offshore Oilfields

End Users Covered:

Crude Oil Producers

Independent Oil & Gas Operators

National Oil Companies (NOCs)

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

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

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

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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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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