

Biomethane Market Forecasts to 2034 – Global Analysis By Feedstock (Agricultural Residues, Energy Crops, Organic Municipal Solid Waste, Industrial Organic Waste and Sewage Sludge), Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Biomethane Market is accounted for \$21.1 billion in 2026 and is expected to reach \$152.2 billion by 2034 growing at a CAGR of 28.0% during the forecast period. Biomethane is an eco-friendly gas derived from refining biogas obtained from organic materials such as farm waste, municipal waste, and wastewater. Primarily composed of methane, it serves as a cleaner alternative to conventional fossil fuels across power generation, heating, and transport sectors. The process includes anaerobic breakdown of organic matter and subsequent upgrading to eliminate unwanted gases like carbon dioxide and hydrogen sulfide. This renewable fuel contributes to lowering carbon emissions, improving waste utilization, and strengthening energy independence. Rising environmental concerns, strict emission norms, and growing renewable energy investments are accelerating the global demand for biomethane solutions.

According to the International Energy Agency (IEA), today's sustainable production potential for biogases (including biomethane) is nearly 1,000 billion cubic meters annually, equivalent to about 25% of global natural gas demand.

Market Dynamics:

Driver:

Rising demand for renewable energy

Increasing demand for clean and renewable energy sources is significantly boosting the biomethane market. With global efforts focused on reducing fossil fuel usage and minimizing environmental impact, biomethane is emerging as an effective alternative fuel. Its compatibility with current gas networks makes it easier to adopt without major infrastructure changes. Governments are supporting this transition through favorable regulations, financial incentives, and clean energy targets. Moreover, rising environmental awareness among industries and individuals is accelerating the shift toward sustainable fuels, contributing to the steady expansion of the biomethane market worldwide.

Restraint:

High production and upgrading costs

Elevated costs related to production and upgrading processes act as a major constraint for the biomethane market. Transforming organic waste into usable biomethane involves complex technologies, expensive machinery, and high initial investments. Expenses linked to gas purification, compression, and distribution infrastructure increase overall project costs. Smaller facilities particularly face difficulties in achieving cost efficiency due to limited scale. In regions with insufficient financial incentives or policy support, these economic barriers become more pronounced. As a result, high costs can limit investor interest and hinder the large-scale deployment of biomethane technologies worldwide.

Opportunity:

Expansion of biomethane in transportation sector

Rising use of biomethane in the transportation industry offers a strong growth opportunity for the market. With global efforts aimed at lowering emissions from vehicles, biomethane is gaining attention as a sustainable substitute for conventional fuels like diesel and petrol, especially in buses and heavy trucks. Its ability to utilize existing CNG infrastructure simplifies adoption and reduces transition costs. Government incentives, clean mobility initiatives, and increased funding for alternative fuels are further supporting this shift. As a result, the transportation sector is becoming a key driver for biomethane demand and long-term market development worldwide.

Threat:

Competition from alternative renewable energy sources

Growing competition from other renewable energy options represents a major threat to the biomethane market. Energy solutions like solar power, wind energy, and green hydrogen are expanding quickly and attracting strong financial backing and government support. Their relatively lower costs and ease of large-scale deployment make them appealing alternatives. This situation can limit investment opportunities and reduce the market share available for biomethane projects. Furthermore, ongoing technological improvements in these competing sectors may diminish the appeal of biomethane, potentially restricting its growth even though it offers environmental and waste management benefits.

Covid-19 Impact:

The biomethane market experienced both challenges and opportunities during the COVID-19 pandemic. Early stages saw disruptions in supply chains, halted projects, and reduced investments due to lockdowns and limited industrial activities. Collection of organic waste from businesses declined, affecting feedstock availability. Despite these setbacks, the crisis emphasized the need for reliable and sustainable energy sources, boosting interest in renewable energy. Governments incorporated green energy measures into economic recovery plans, promoting biomethane development. With the gradual reopening of economies, the market began to recover, driven by stronger focus on clean energy transition, improved energy resilience, and growing adoption of waste-to-energy technologies.

The organic municipal solid waste segment is expected to be the largest during the forecast period

The organic municipal solid waste segment is expected to account for the largest market share during the forecast period, primarily because of its widespread availability and steady generation in urban environments. Materials such as household garbage, food waste, and other biodegradable components serve as a dependable source for producing biogas, which can be refined into biomethane. Growing emphasis on waste-to-energy practices and improved municipal waste management systems supports the increased use of this feedstock. Furthermore, strict regulations aimed at reducing landfill usage and encouraging sustainable disposal methods are strengthening the dominance of this segment in global biomethane production.

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

Over the forecast period, the transportation sector segment is predicted to witness the highest growth rate, driven by rising initiatives to lower carbon emissions and promote cleaner mobility solutions. Biomethane is increasingly being used as an eco-friendly substitute for traditional fuels, particularly in buses, trucks, and fleet vehicles. Its ability to integrate with existing compressed natural gas systems simplifies its implementation. Supportive government policies, strict emission standards, and funding for green transportation are further boosting its adoption. Increasing environmental concerns and demand for sustainable fuel options are contributing to the rapid expansion of biomethane usage in the transportation sector worldwide.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share, supported by robust environmental regulations, efficient waste management practices, and early implementation of renewable energy solutions. Governments in the region encourage biomethane production through incentives, policy support, and emission reduction goals. The availability of advanced infrastructure for upgrading biogas and integrating it into gas networks enhances market development. A large number of operational facilities and ongoing investments in green energy projects further reinforce its leading position. Emphasis on circular economy strategies and minimizing landfill usage continues to drive the adoption of biomethane throughout Europe.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, driven by increasing urban development, rising energy needs, and stronger emphasis on efficient waste management practices. Governments across the region are investing heavily in renewable energy to lower reliance on conventional fuels and tackle environmental issues. The widespread availability of agricultural residues and municipal waste offers significant opportunities for biomethane production. Supportive policies and initiatives promoting clean energy and waste-to-energy solutions are boosting market expansion. Growing awareness of sustainability, emission control, and energy independence is further contributing to the rapid development of the biomethane market in Asia-Pacific.

Key players in the market

Some of the key players in Biomethane Market include Shell Biogas, BP p.l.c., Air Liquide, TotalEnergies SE, Chevron Corporation, Gasum Ltd, Engie, E.ON SE, Kinder Morgan, Inc., Clean Energy Fuels, Archaea Energy Inc., VERBIO Vereinigte BioEnergie AG, EnviTec Biogas AG, Waga Energy, OPAL Fuels, Future Biogas Ltd., Ameresco and Veolia Group.

Key Developments:

In February 2026, Veolia has secured two 15-year operations and maintenance (O&M) contracts for Mumbai's upcoming Bhandup and Panjrapur Water Treatment Plants (WTPs), strengthening its presence in India's municipal water sector. The contracts mark the largest municipal water sector agreements signed by a French company in India. The combined treatment capacity of the two plants will be 2,910 million litres per day (MLD), equivalent to 2.91 million cubic metres per day.

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).

Feedstocks Covered:

Agricultural Residues

Energy Crops

Organic Municipal Solid Waste

Industrial Organic Waste

Sewage Sludge

Technologies Covered:

Anaerobic Digestion

Gasification

Pyrolysis

Mechanical Biological Treatment

Applications Covered:

Power Generation

Heat Generation

Transportation Fuel

Industrial Use

Residential Use

End Users Covered:

Utilities

Industrial Enterprises

Commercial Establishments

Residential Consumers

Transportation Sector

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

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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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