

Biomethane Market by Feedstock (Energy Crops, Agriculture Residues & Animal Manure, Municipal Waste), Production Process (Anaerobic Digestion, Thermal Gasification), End-use (Transportation, Power Generation, Industrial) Region - Global Forecast to 2030

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Report description:

The global biomethane market is estimated to grow from USD 10.3 Billion in 2023 to USD 60.2 Billion by 2030; it is expected to record a CAGR of 28.7% during the forecast period. Increase in the energy demand for in-house electricity generation from industrial sector which drives the biomethane market.

"Municipal Waste: The largest segment of the biomethane market, by feedstock"

Based on feedstock, Municipal waste stands as the predominant feedstock in the biomethane market, representing the largest segment. This is attributed to the increasing recognition of municipal waste as a valuable resource for biomethane production. As municipalities worldwide strive for sustainable waste management practices, anaerobic digestion of organic components in municipal waste emerges as a key method for biomethane generation. Governments and waste management authorities are increasingly investing in facilities that convert organic waste into biomethane, aligning with circular economy principles. The versatility and abundance of municipal waste make it a crucial feedstock, underscoring its pivotal role in driving the growth of the biomethane market.

"Transportation segment is expected to emerge as the second-largest segment based on end-use application"

By end-use application, The transportation segment is poised to become the second-largest segment in the biomethane market based on end-use applications. This growth is driven by the increasing adoption of biomethane as a sustainable and low-carbon alternative in the transportation sector. As concerns about greenhouse gas emissions and environmental sustainability escalate, biomethane presents itself as a viable solution, particularly for heavy-duty vehicles such as buses, trucks, and even ships. The transportation industry's shift towards cleaner fuel options, coupled with advancements in biomethane production technologies

and the establishment of refueling infrastructure, is fostering a significant uptick in biomethane utilization as a vehicle fuel. Government incentives and regulations promoting the use of renewable fuels further contribute to the anticipated expansion of biomethane in transportation, positioning it as a key player in the global effort to reduce carbon emissions in the mobility sector. "By production process, the anaerobic digestion & fermentation segment is expected to be the fastest growing market during the forecast period."

The anaerobic digestion and fermentation segment is poised to be the fastest-growing market within the biomethane sector during the forecast period. This accelerated growth can be attributed to the increasing recognition of anaerobic digestion and fermentation as efficient and sustainable methods for biomethane production. These processes involve the breakdown of organic materials, such as agricultural residues, municipal solid waste, and wastewater, by microorganisms in the absence of oxygen, resulting in the generation of biogas that can be upgraded to biomethane. The appeal of these production methods lies in their ability to convert various organic feedstocks into a renewable energy resource, aligning with circular economy principles and contributing to waste reduction. With governments worldwide promoting sustainable waste management practices and renewable energy initiatives, the anaerobic digestion and fermentation segment is positioned to experience robust growth, driven by its eco-friendly approach and versatility in utilizing diverse organic materials for biomethane production.

North America is expected to be the second largest-growing region in the biomethane market

North America is anticipated to emerge as the second-largest growing region in the biomethane market. This growth is underpinned by several factors, including the region's increasing focus on renewable energy sources and sustainable practices. The United States and Canada, in particular, are witnessing a surge in biomethane projects, with investments in facilities that convert organic waste into renewable natural gas. Government initiatives, such as renewable energy targets and incentives, further bolster the biomethane market's expansion in North America. Additionally, the growing awareness of the environmental benefits of biomethane, coupled with advancements in production technologies, is driving its adoption in various applications, including power generation and transportation. As North America continues to prioritize clean and renewable energy solutions, the biomethane market is positioned for significant growth in the region.

Breakdown of Primaries:

In order to gather and validate crucial qualitative and quantitative data and evaluate potential market opportunities, in-depth interviews have been carried out with a range of significant industry players, subject-matter experts, C-level executives of significant market players, and industry consultants, among other experts. Primary interviews were distributed as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Levels- 25%, and Others- 45%

By Region: North America- 35%, Europe- 15%, Asia Pacific- 25%, and Rest of the World - 25%

Note: Others include product engineers, product specialists, and engineering leads.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2021. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: < USD 500 million

There are a few major players in the biomethane market that are well-established geographically. Air Liquide (France), Gasum Ltd. (Finland), Archae Energy (Texas), and OPAL Fuels (US) are the top companies in the biomethane market.

Research Coverage:

The worldwide biomethane market is defined, explained, and projected in this report according to component, power source, application, and geography. A thorough qualitative and quantitative analysis of the market is also provided. The study offers a thorough analysis of the main market factors, opportunities, obstacles, and restraints. It also discusses a number of significant market facets. These comprise a study of the market's competitive environment, market dynamics, value estimates, and potential future developments in the biomethane industry.

Key Benefits of Buying the Report

- Some of the key factors propelling the biomethane market are investments in upgrading and expanding transmission and distribution infrastructure, as well as the electrification of rural areas. The market is still constrained by elements like high installation costs and certain countries' lack of uniform standards for electrification. The market for biomethane is expected to expand as a result of increased government regulations aimed at modernising electrical infrastructure and decreasing power

outages. Despite the fact that developing nations dealing with biomass power plant development face significant obstacles due to delays in electrical transmission projects.

-**Product Development/ Innovation:** In order to reduce carbon emissions, the bioenergy or renewable energy market for biomethane appears to have a bright future. Technology is becoming more affordable as investments in the renewable energy sector rise because of advancements in module design and the capacity to interface directly with higher voltage systems.

-**Market Development:** The role of renewable energy sources in the power generation grid infrastructure is growing. Renewable energy comes from a variety of sources, including biomass, geothermal, solar, wind, and hydro. In the upcoming years, the Asia Pacific biomethane market is anticipated to grow significantly due to the rising demand for electricity in rural areas.

-**Market Diversification:** Alier, a paper recycling expert, and ENGIE inked a contract for Rosello's factory, which produces paper for the packaging and construction industries, to construct and operate a new thermal energy generating plant from sustainable forest management (Lleida).

Competitive Assessment: In-depth analysis of the market shares, expansion plans, and service provisions of the industry's top companies, including Archae Energy (Texas), Gasum Ltd. (Finland), Air Liquide (France), and OPAL Fuels (US).

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