

Bio-LNG Market Sets New Record, Projected at USD 3.4 Billion By 2032 at 17.9% CAGR: AMR

Bio-LNG Market to Discern Magnified Growth during 2023 - 2032

PORTLAND, OREGON, UNITED STATES, November 21, 2023 / EINPresswire.com/ -- Allied Market Research published a report on the Bio-LNG Market by Source (Agriculture Residues, Industrial Waste, Household Waste, Others), by Application (Automotive, Ships, Power Generation, Others): Global Opportunity Analysis and Industry Forecast, 2023-2032. The



bio-LNG market was valued at \$0.7 billion in 2022, and is estimated to reach \$3.4 billion by 2032, growing at a CAGR of 17.9% from 2023 to 2032.

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Environment concerns & renewable energy policies, energy security & waste management & low emissions & compatibility with existing infrastructure are the upcoming trends of Bio-LNG Market in the world"

Allied Market Research

A sustainable and renewable kind of liquefied natural gas (LNG), bio-LNG is produced from biomass sources. As part of the biomass feedstock collection step in the manufacture of bio-LNG, organic resources are first gathered. Animal manure, sewage sludge, food waste, and energy crops are among the organic wastes used as biomass feedstock. When biomass feedstock is treated to anaerobic digestion in the absence of oxygen, microorganisms break down organic material. Methane and carbon dioxide make up the majority of the biogas produced by the process. The resultant biogas is

subsequently processed to remove impurities and CO2. It causes a methane concentration increase of more than 90% to equal natural gas quality, depending on the intended usage.

The biogas is cooled to extremely low temperatures, frequently below -160°C (-256°F), in order to

purify the methane present. During the purification process, methane in biogas is refrigerated to extremely low temperatures, frequently below -160°C (-256°F). Bio-LNG is made by converting a gas into a liquid. Numerous uses of bio-LNG exist, including the production of energy and heating. It's also used to power ships, buses, and other kinds of transportation. Bio-LNG can be utilized independently or in conjunction with conventional LNG. It is a more environmentally friendly and cleaner alternative to conventional LNG derived from fossil fuels. The environmental benefits of bio-LNG include lower greenhouse gas emissions and the encouragement of organic waste management for energy production. As a result, the economy becomes more sustainable and circular.

Given that it is made from organic waste products that are continuously produced from numerous sources, bio-LNG is regarded as a renewable energy source. Its consumption and production greatly reduce greenhouse gas emissions, particularly methane emissions from the decomposition of organic waste, making it a more environmentally friendly LNG alternative to traditional LNG derived from fossil fuels. By converting organic waste into energy, bio-LNG promotes waste diversion and sustainable energy production, thus contributing to a more circular economy.

Moreover, bio-LNG enhances energy security by providing an alternative and locally sourced energy supply, reducing reliance on fossil fuel imports. It will be an efficient and cost-effective solution for several sectors because of its compatibility with existing LNG infrastructure and applications. It can significantly reduce greenhouse gas emissions as compared to conventional LNG made from fossil sources. Since bio-LNG can be used in existing LNG infrastructure and in natural gas cars, integrating it into the current energy system is made easier.

Securing and maintaining a consistent supply of organic waste feedstock for biogas generation can be difficult in some locations, particularly in places with a weak waste collection and processing infrastructure. The expense of building the infrastructure needed for the production and delivery of bio-LNG could act as a barrier to entry. The feasibility of the business may be impacted by the fact that creating bio-LNG currently costs more than producing conventional LNG using fossil fuels. By exploiting economies of scale and improving the productivity of bio-LNG production, the technology is scaled up and made more affordable.

The <u>Bio-LNG industry's</u> key market players adopt various strategies such as product launch, product development, collaboration, partnership, and agreements to influence the market. It includes details about the key players in the market's strengths, product portfolio, market size and share analysis, operational results, and market positioning.

- Titan LNG
- Linde Plc
- DBG Group B.V.
- BoxLNG Pvt. Ltd.
- TotalEnergies SE
- Shell Plc.
- Nordsol
- Flogas Britain Ltd.
- EnviTec Biogas AG
- BIOKRAFT INTERNATIONAL AB

Furthermore, policies, incentives, and regulations that are open and supportive are essential to promoting the creation and use of bio-LNG as a sustainable energy source. The development and management of successful and economical bio-LNG production systems can be challenging and time-consuming. R&D efforts are required to optimize the entire bio-LNG value chain. Lack in R&D and technological disadvantages also pose a major hindrance to the bio-LNG market growth.

One of the most prospective applications for bio-LNG is decarbonizing transportation, especially for large, heavy-duty vehicles like trucks, buses, and ships. In order to reduce emissions from the transportation industry, which is a large contributor to greenhouse gas emissions, bio-LNG can be utilized as a sustainable fuel for long-distance travel. By offering a locally produced alternative energy source made from renewable feedstocks, bio-LNG can increase energy security. Reducing dependence on fossil fuel imports can help countries mitigate supply chain vulnerabilities and geopolitical risks.

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The bio-LNG market size is studied on the basis of source, application, and region. By source, the bio-LNG market is divided into agriculture residues, industrial waste, household waste, and others. household waste segment dominated the bio-LNG market share in 2022. The same is expected to grow at the fastest rate during the bio-LNG market forecast period. This is attributed to the fact that it encourages a circular economy, where waste materials are utilized to create valuable resources, reduce environmental impacts, and promote bio-LNG market opportunities.

By application, the market is categorized into automotive, ships, power generation, and others. The automotive segment is projected to grow at a higher CAGR during the bio-LNG market analysis for the forecast years. Because bio-LNG has a high energy density, it provides a greater driving range than other alternative fuels such as compressed natural gas. Furthermore, existing infrastructure for liquefied natural gas (LNG) can be utilized for bio-LNG storage, transportation, and dispensing, making integration into the transportation sector easier.

By region, the bio-LNG market analysis is done across North America, Europe, Asia-Pacific, and LAMEA. Policies and programs of the European Union (EU) are also essential in encouraging the usage of bio-LNG among its member states. The use of renewable energy sources like bio-LNG is encouraged by the EU's ambitious climate and energy targets, which are designed to reduce greenhouse gas emissions and promote sustainability and hence contribute to current bio-LNG market trends.

The drivers, restraints, and opportunities are explained in the report to better understand the market dynamics. This report further highlights the key areas of investment and bio-LNG market scope. In addition, it includes Porter's five forces analysis to understand the competitive scenario of the industry and the role of each stakeholder. The report features strategies adopted by key market players to maintain their foothold in the market. Furthermore, it highlights the competitive landscape of key players to increase their market share and sustain the intense competition in the industry.

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- By source, the household waste segment is projected to grow at the highest CAGR of approximately 18.2%, in terms of during the bio-LNG market forecast period.
- By application, the automotive segment dominated the bio-LNG market share growing at a CAGR of 18.3% in 2021.
- By region, Europe dominated the bio-LNG market and is expected to grow at a high CAGR during the forecast period.

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