

Rising Investments in Renewable Energy to Propel Biomass Power Generation Market Growth

Afforestation and sustainable forestry capture CO2 via photosynthesis, storing carbon in biomass and soil, aiding carbon sequestration efforts.

WILMINGTON, DE, UNITED STATES, March 5, 2025 /EINPresswire.com/ -- Allied Market Research published a report, titled, "[Biomass Power Generation Market](#) by Feedstock (Forest Waste, Agriculture Waste, Animal Waste and Municipal Waste), Fuel (Solid, Liquid and Gaseous), Technology (Gasification, Combustion, Anaerobic Digestion and Pyrolysis):

Global Opportunity Analysis and Industry Forecast, 2024-2033". According to the report, the biomass power generation market was valued at \$91.3 billion in 2023, and is estimated to reach \$124.5 billion by 2033, growing at a CAGR of 3.2% from 2024 to 2033.

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Prime determinants of growth

The global biomass power generation market is experiencing growth due to increase in demand for stable baseload or dispatchable power systems. However, high initial setup costs for biomass power plants is expected to hamper the market. Moreover, innovations in biomass conversion technologies, such as gasification and anaerobic digestion are expected to offer lucrative opportunities in the market during the forecast period.

Key factors driving the market include the increasing adoption of biomass energy in industrial, residential, and commercial applications, along with supportive government policies and incentives promoting renewable energy projects. Additionally, advancements in biomass conversion technologies such as combustion, gasification, and anaerobic digestion are further accelerating market growth.



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The agriculture waste segment is expected to remain the largest type throughout the forecast period

By feedstock, harnessing agricultural waste for biomass power generation offers a compelling solution to these challenges. By converting these residues into energy, biomass power plants can produce electricity, heat, or biofuels. The process typically involves combustion, gasification, or anaerobic digestion, depending on the feedstock and desired end product.

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The solid segment dominated the market throughout the forecast period

By fuel, biomass power generation utilizing solid biomass holds significant promise as a sustainable alternative to fossil fuels, contributing to renewable energy targets globally. Solid biomass refers to organic materials derived from plants and animals that are used directly as fuel or converted into biofuels. This biomass can include wood, agricultural residues, forestry residues, and dedicated energy crops like switchgrass or miscanthus. Harnessing solid biomass for power generation involves several processes, each crucial to its efficiency, environmental impact, and economic feasibility.

The combustion segment is expected to lead throughout the forecast period

By technology, biomass combustion involves burning organic materials directly to generate heat, which can be used to produce steam to drive turbines and generate electricity. Crop residues such as straw and husks, as well as wood waste, are commonly used in combustion-based biomass power plants. This method is straightforward and well-established but requires careful management to minimize emissions and ensure efficient energy conversion.

Asia-Pacific to maintain its dominance by 2033

Region wise, biomass power generation in the Asia-Pacific region has seen significant growth and adoption in recent years, driven by various factors including environmental concerns, energy security, and economic development. This renewable energy source utilizes organic materials such as agricultural residues, wood waste, and municipal solid waste to produce electricity and heat, making it a versatile and sustainable option for many countries in the region.

China has emerged as a leader in biomass power generation in Asia-Pacific. The country's vast agricultural sector provides ample feedstock for biomass plants, including crop residues like rice husks and straw. India is another prominent player in the biomass power sector. With a large agricultural base and significant biomass resources, India has leveraged these advantages to expand its renewable energy portfolio. Biomass power plants in India utilize a variety of feedstocks, including agricultural residues, forestry residues, and organic municipal waste.

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Players: -

- Drax Global
- ENGIE
- Babcock & Wilcox Enterprises, Inc
- Xcel Energy Inc.
- Ørsted A/S
- Ameresco
- Vattenfall AB
- MITSUBISHI HEAVY INDUSTRIES, LTD.
- Sumitomo Corporation
- Hurst Boiler & Welding Co, Inc

The report provides a detailed analysis of these key players in the global biomass power generation market. These players have adopted different strategies such as new product launches, collaborations, expansion, joint ventures, agreements, and others to increase their market share and maintain dominant shares in different regions. The report is valuable in highlighting business performance, operating segments, product portfolio, and strategic moves of market players to showcase the competitive scenario.

David Correa

Allied Market Research

+15038946022 ext.

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