

# **Biomass Power Generation Market by Technology (Combustion, Gasification, Anaerobic Digestion, Pyrolysis), Feedstock (Agricultural Waste, Forest Waste, Animal Waste, Municipal Waste), Fuel (Solid, Liquid, Gaseous) and Region - Global Forecast to 2028**

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## **Abstracts**

The global biomass power generation market is estimated to grow from USD 91.3 Billion in 2023 to USD 105.7 Billion by 2028; it is expected to record a CAGR of 3.0% during the forecast period. Increase in the energy demand for in-house electricity generation from industrial sector which drives the biomass power generation market.

“Forest Waste: The largest segment of the biomass power generation market, by feedstock “

Based on feedstock, the biomass power generation market has been split into four types: Agriculture Waste, Forest Waste, Animal Waste and Municipal Waste. The forest waste were estimated to have the largest share of the biomass power generation market in 2022. Forest biomass waste is the by-product of forest harvesting, which includes wood chips, bark, sawdust, mill scrap, and timber slash. Forest waste has been used largely for power generation. As per estimates, China uses 50% of the forest biomass among the available energy resources to generate power and biofuel.

“Gasification segment is expected to emerge as the second-largest segment based on technology”

By technology, the biomass power generation market has been segmented into

combustion, pyrolysis, gasification and anaerobic digestion. Gasification are expected to be the second largest share of the biomass power generation market in 2022. Gasification is becoming increasingly competitive in terms of cost, with the price of combustion and pyrolysis dropping significantly in recent years. They offer an opportunity for countries to reduce their reliance on improve energy security.

“By fuel, the Solid Fuel segment is expected to be the fastest growing market during the forecast period.”

Based on Solid fuel, the biomass power generation market is segmented into solid fuel, liquid fuel and gaseous fuel. The Solid fuel segment is expected to be the fastest-growing segment during the forecast period. Woody biomass is mostly the preferred solid fuel for power generation. The US Department of Energy studied the impact of both fossil fuels and biomass solid fuels on global warming during the life cycle of a power generation facility.

Europe is expected to be the second largest growing region in the biomass power generation market

Europe is expected to be the second fastest biomass power generation market during the forecast period. The European Union implemented the European Green Deal to efficiently use clean energy sources for applications across industries, especially transportation and power. The initiative was implemented to reduce carbon emissions as a part of European net zero goals for waste, energy, and fuel by 2050.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information, as well as to assess future market prospects. The distribution of primary interviews is 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%, Asia Pacific- 25%, Europe- 15%, the Middle East & Africa- 15%, and South America- 10%

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: The biomass power generation market is dominated by a few major players that have a wide regional presence. The leading players in the biomass power generation market are ENGIE (France), Babcock & Wilcox Enterprises, Inc. (US), Xcel Energy Inc. (US), EPH (Czechia) and Ørsted A/S (Denmark).

#### Research Coverage:

The report defines, describes, and forecasts the global biomass power generation market, by component, power source, application, and region. It also offers a detailed qualitative and quantitative analysis of the market. The report provides a comprehensive review of the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates, in terms of value, and future trends in the biomass power generation market.

#### Key Benefits of Buying the Report

Electrification of rural areas and Investments in upgrading and expanding transmission and distribution infrastructure are some of the main factors driving the biomass power generation market. Factors such as high installation costs and lack of common standards for electrification in some countries still restrain the market. Increased government mandates for upgrading electrical infrastructure and reducing power losses provide opportunities for the biomass power generation market to grow. Even though delays in electrical transmission projects are major challenges faced by countries under biomass power plant development.

**Product Development/ Innovation:** The future of the biomass power generation market looks bright for renewable energy or bioenergy to reduce the carbon footprints. As investments are increasing in renewable energy sector, technology become less expensive due to improvements in modules and the ability to connect directly to higher voltage systems.

**Market Development:** Renewable energy sources are becoming increasingly

important in the grid infrastructure for power generation. Renewables include sources such as solar, wind, hydro, geothermal, and biomass, among others. Asia Pacific biomass power generation market is expected to experience significant growth in the coming years, driven by increasing demand for electricity in rural areas.

**Market Diversification:** ENGIE signed an agreement with Alier, a paper recycle specialist, to build and commission a new thermal energy generation plant from sustainable forest management in Rosell's factory, specializing in manufacturing paper for the construction and packaging industries (Lleida)

**Competitive Assessment:** In-depth assessment of market shares, growth strategies, and service offerings of leading players like ENGIE (France), Babcock & Wilcox Enterprises, Inc. (US), Xcel Energy Inc. (US), EPH (Czechia) and Ørsted A/S (Denmark) among others in the biomass power generation market

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\*Business Overview, Products/Services/Solutions Offered, MnM View, Key Strengths

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