

Asia-Pacific Biomass Power Market Forecast 2024-2032

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Report description:

KEY FINDINGS

The Asia-Pacific biomass power market is evaluated to progress with a CAGR of 6.52% over the forecasting years of 2024 to 2032, reaching a revenue of \$53816.06 million by 2032. In terms of volume, the market was valued at 477.33 million MWh in 2023 and is projected to reach 952.34 million MWh by 2032, growing with a CAGR of 8.07% during the forecast years.

MARKET INSIGHTS

Rapid industrialization, urbanization, and economic development are driving the need for sustainable and reliable energy sources in the Asia-Pacific. Biomass power, in this regard, is being adopted across various sectors to reduce greenhouse gas emissions, enhance energy security, and support rural development. Advances in biomass conversion technologies and investments in infrastructure are expected to further propel the biomass power market's expansion in the coming years. However, the Asia-Pacific biomass power market is likely to be hindered by high initial capital investments, supply chain complexities, and competition from other renewable energy sources.

REGIONAL ANALYSIS

The Asia-Pacific biomass power market growth evaluation covers the analysis of China, Japan, India, South Korea, Australia & New Zealand, and the Rest of Asia-Pacific.

China's market growth is propelled by supportive government policies, abundant biomass resources, and technological advancements. According to recent data, by the end of 2023, China's installed biomass power capacity reached 44.14 GW (gigawatts), marking a fourfold increase compared to 2013. Biomass energy, derived from sources such as agricultural residues, forestry wastes, and organic urban waste, has become a vital part of the nation's renewable energy strategy. In 2022 alone, China generated 182.4 billion kWh (kilowatt-hours) of electricity from biomass, supplying green power to nearly 200 million people. China's biomass resources are abundant, with around 3.5 billion metric tons of raw biomass materials produced annually, including agricultural waste, forestry residues, and organic waste from urban areas. Of this, about 500 million tons are currently used for energy production. Looking forward, China aims to expand its biomass capacity further, targeting 50 GW by 2030, with biomass heating expected to cover 1 billion square meters by that time. This expansion is part of a broader effort to substitute more than 130 million tons of coal and attract investments of around 610 billion yuan (\$88 billion).

SEGMENTATION ANALYSIS

The Asia-Pacific biomass power market is segmented into feedstock, technology, and application. The feedstock segment is

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further classified into solid biomass, liquid biomass, biogas, and municipal solid waste.

Municipal solid waste (MSW) is a significant feedstock segment in the Asia-Pacific biomass power market. MSW refers to everyday waste collected from residential, commercial, and institutional sources, including organic waste, paper, plastics, and other materials. Utilizing MSW as a feedstock for biomass power generation addresses the growing waste disposal challenges in rapidly urbanizing regions of Asia-Pacific. With increasing population and urbanization, the volume of MSW has surged, leading to environmental concerns such as landfill overflows, pollution, and greenhouse gas emissions.

The growth of the MSW segment is driven by supportive government policies, increasing environmental awareness, and the need for sustainable waste management solutions. Governments in countries like China, Japan, and India are investing in waste-to-energy (WtE) projects as part of their waste management strategies and renewable energy goals. Advanced technologies enable the conversion of MSW into energy through processes like combustion, gasification, and anaerobic digestion, reducing landfill usage and mitigating environmental impacts. As efforts to reduce carbon footprints intensify, utilizing MSW for biomass power generation plays a crucial role in advancing sustainable energy solutions in the Asia-Pacific region.

COMPETITIVE INSIGHTS

Some of the top players operating in the Asia-Pacific biomass power market include Mitsubishi Heavy Industries Ltd, Acciona SA, Drax Group PLC, Enel Green Power, etc.

Mitsubishi Heavy Industries Ltd (MHI), headquartered in Japan, is a multinational engineering, electrical equipment, and electronics company involved in various sectors, including energy, aerospace, shipbuilding, and machinery. In the biomass power market, MHI plays a significant role by providing advanced technologies and solutions for biomass power generation.

MHI's portfolio includes biomass power systems such as boilers and turbines designed for biomass fuels, Integrated Gasification Combined Cycle (IGCC) systems, and environmental solutions for emissions control and waste treatment. The company is actively involved in waste-to-energy projects, utilizing municipal solid waste as a feedstock for power generation. MHI provides technology and equipment for MSW incineration plants, which generate electricity while reducing waste volume. Additionally, MHI offers Engineering, Procurement, and Construction (EPC) services for biomass power plants.

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