

North America Industrial Biomass Boiler Market Forecast 2025-2032

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Report description:

KEY FINDINGS

The North America industrial biomass boiler market is anticipated to develop with a CAGR of 9.71% over the forecast period of 2025-2032. The market was valued at \$3799.22 million in 2024 and is expected to reach a revenue of \$8000.33 million by 2032.

MARKET INSIGHTS

The North America industrial biomass boiler market is on a significant upward trajectory, driven by increasing energy demands, legislative support for renewable energy, and rising concerns about carbon emissions. With the market projected to grow substantially, the emphasis on biomass as a sustainable heating solution is becoming a priority for various industries. The market is also notable for its diversification in fuel sources, with wood-based materials and agricultural residues leading the way.

REGIONAL ANALYSIS

The growth assessment of the North America industrial biomass boiler market includes a comprehensive analysis of the United States and Canada.

In the United States, biomass boilers are receiving substantial backing from federal and state regulations designed to promote renewable energy adoption. The US Department of Agriculture (USDA) has introduced various programs supporting the integration of biomass energy in industrial processes. For example, the USDA has supported multiple biomass-based projects that convert agricultural waste into energy, showcasing effective utilization of available resources in states like California and Iowa. An exemplary project is the installation of a biomass boiler at a paper mill in Oregon, which has significantly reduced greenhouse gas emissions by using locally sourced wood waste for energy. This initiative not only provided energy cost savings for the mill but also supported local forest management practices, making it a successful model for sustainable development.

Canada is another key player in the North American biomass boiler market, leveraging its vast forestry resources to drive biomass energy initiatives. The Canadian government has implemented financial incentives aimed at encouraging industries to shift towards biomass boilers, especially in provinces like British Columbia. The province has established biomass as a critical component of its energy strategy, leading to the installation of several modern biomass facilities that utilize wood pellets and residues for energy production.

Technological advancements in biomass boiler designs have greatly improved efficiency and performance. Integrated systems that combine biomass boilers with combined heat and power (CHP) capabilities are becoming increasingly popular. These systems allow industries to generate both electricity and thermal energy, maximizing the overall utilization of biomass resources. Facilities in the food processing sector are beginning to adopt CHP systems for efficient energy management, demonstrating tangible

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benefits.

Despite the advancements and support for biomass energy, challenges remain in the North American market. High upfront capital costs associated with installing biomass boilers can deter some enterprises, particularly small and medium-sized businesses. Furthermore, volatility in biomass fuel availability and pricing could influence operational stability, presenting risks for dependability and cost management in energy sourcing.

Concerns regarding environmental sustainability associated with biomass sourcing have also surfaced. Although biomass is regarded as a renewable resource, there are ongoing discussions about ensuring responsible harvesting practices to avoid deforestation and maintain ecological balance. Regulatory frameworks are also evolving to address these issues and ensure that biomass energy contributes positively to the overall sustainability goals of the region.

SEGMENTATION ANALYSIS

The North America industrial biomass boiler market segmentation includes feedstock, capacity, application, and type. The application segment is further categorized into combined heat and power (CHP) production, pulp & paper, power generation, sawmill, brewery, and other applications.

In North America, combined heat and power (CHP) systems are essential for maximizing energy efficiency by producing electricity and thermal energy from a single biomass fuel source. Widely used in industries like food processing and manufacturing, biomass-fueled CHP systems reduce energy costs and greenhouse gas emissions. With federal incentives and renewable energy programs, their adoption aligns with the region's focus on sustainable industrial practices and energy efficiency.

The North America industrial biomass boiler market is well-positioned for continued growth and innovation. As industries seek to reduce their carbon impact and comply with stricter environmental regulations, the adoption of biomass systems is expected to rise. The increasing collaboration between governments, industry stakeholders, and research institutions will further foster the development of technologies and practices that enhance the sustainability of biomass utilization in the region.

COMPETITIVE INSIGHTS

The leading companies operating in the North America industrial biomass boiler market include Babcock & Wilcox Enterprises Inc, Hurst Boiler & Welding Co Inc, Industrial Boilers America, KMW Energy Group, etc.

Babcock & Wilcox Enterprises Inc (Babcock & Wilcox) is a leading provider of advanced technology solutions for both fossil and renewable power generation, as well as environmental equipment. The company offers a wide range of biomass-fired boiler products, including supercritical boilers, waste-to-energy boilers, heat recovery steam generators, package boilers, waste heat boilers, and process recovery boilers, among others. Additionally, Babcock & Wilcox provides air pollution control products and associated equipment.

The company also delivers a variety of services, such as field engineering, construction, plant operations and maintenance, and commissioning. Its products are used across several sectors, including coal and natural gas, biomass, municipal solid waste, and other renewable fuels. With operations in Canada, China, Mexico, Sweden, Denmark, Indonesia, and India, Babcock & Wilcox is headquartered in Charlotte, North Carolina, USA.

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