

Industrial Wood Pellets Market - Global Industry Size, Share, Trends, Opportunity, and Forecast Segmented By Application (Heating and Electricity Production), By End User (Power Generation, Food Processing, Waste Management & Recycling, Others), By Region & Competition, 2020-2030F

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Abstracts

Global Industrial Wood Pellets Market was valued at USD 7.85 billion in 2024 and is expected to reach USD 15.20 billion by 2030 with a CAGR of 11.48% through 2030. Governments worldwide are implementing policies to reduce carbon emissions, with substantial incentives and subsidies promoting biomass energy. This regulatory support, especially prominent in regions like Europe and North America, is a major catalyst for market expansion. Technological advancements in pellet production and combustion efficiency are enhancing the competitiveness of wood pellets compared to fossil fuels. Improved manufacturing processes and combustion systems are resulting in higher quality pellets with better energy output and reduced emissions. Additionally, the rising cost of fossil fuels is pushing industries and consumers towards more stable and affordable energy alternatives, further boosting the industrial wood pellets market.

The industrial sector's increasing energy demands, coupled with heightened environmental awareness, are driving the adoption of wood pellets. Businesses and consumers are prioritizing sustainability, and wood pellets offer a renewable and carbon-neutral energy solution. As a result, the market is witnessing robust growth, with expanding applications in heating and power generation sectors, ensuring its continued development and relevance in the global energy landscape.

Key Market Drivers

Growing Demand for Renewable Energy and Carbon Neutrality Goals

The increasing emphasis on renewable energy sources and global carbon neutrality goals is a significant driver for the industrial wood pellets market. Governments and organizations worldwide are implementing strict environmental regulations to reduce greenhouse gas emissions, prompting industries and power plants to transition from fossil fuels to sustainable alternatives like wood pellets. Industrial wood pellets serve as a viable substitute for coal in power generation, significantly lowering carbon footprints while maintaining energy efficiency. The European Union, for instance, has set ambitious targets under the Renewable Energy Directive (RED II), which mandates increased reliance on renewable energy sources, driving the demand for industrial wood pellets. Similarly, North America and Asia-Pacific countries, including Japan and South Korea, are adopting biomass energy solutions to meet carbon reduction commitments. Utilities and large-scale energy providers are increasingly co-firing wood pellets with coal to meet emission standards without major infrastructure overhauls, making industrial wood pellets an attractive solution. Additionally, carbon pricing mechanisms and emission trading systems further encourage industries to adopt low-carbon energy sources, reinforcing the growth of the market. With increasing government subsidies, policy incentives, and private investments in biomass power generation, the industrial wood pellets market is poised for sustained expansion in the coming years. Renewable energy capacity globally reached approximately 3,300 GW by the end of 2023, accounting for about 39% of the world's total power generation capacity. The share of renewable energy in global electricity generation reached 29% in 2023, with wind and solar accounting for 17.9% and 10.3% of the total global generation, respectively.

Key Market Challenges

Supply Chain Disruptions and Raw Material Availability

The Industrial Wood Pellets Market faces significant challenges due to supply chain disruptions and raw material availability, which directly impact production costs, delivery timelines, and market stability. Wood pellets are primarily derived from sawdust, wood chips, and forestry residues, making the market highly dependent on the forestry industry and timber supply chains. Fluctuations in raw material availability caused by deforestation regulations, environmental restrictions, and logging bans in key regions, such as North America and Europe, create uncertainties in production. Additionally, climate change-induced factors such as forest fires, pests, and extreme weather events further threaten the steady supply of biomass feedstock, leading to price volatility. The

COVID-19 pandemic exposed vulnerabilities in global supply chains, with labor shortages, transportation bottlenecks, and restrictions on cross-border trade affecting raw material procurement and pellet distribution. Rising costs of fuel and logistics add further strain to manufacturers, making it difficult to maintain competitive pricing. Moreover, geopolitical tensions and trade policies, such as tariffs on timber imports and export restrictions on biomass, have disrupted the smooth flow of raw materials between major producing and consuming countries.

The industrial wood pellet market is also facing challenges in securing sustainable and certified sources of biomass, as regulatory bodies impose stricter sustainability requirements to reduce carbon footprints. Many governments and international organizations now mandate compliance with environmental standards like the Sustainable Biomass Program (SBP) and Forest Stewardship Council (FSC) certifications, which add to operational complexities and costs. Additionally, competition for biomass from other industries, such as pulp and paper, bioenergy, and wood-based panels, further limits raw material availability for pellet production. This supply chain instability can lead to production delays, increased costs for end-users, and difficulties in meeting contractual obligations for long-term energy supply agreements. To address these challenges, market players must invest in diversified sourcing strategies, enhance supply chain resilience, and explore alternative biomass feedstocks such as agricultural residues or waste wood. Collaboration between policymakers, industry stakeholders, and supply chain partners is crucial to developing sustainable forestry management practices that ensure long-term raw material availability while minimizing environmental impacts.

Key Market Trends

Rising Demand for Biomass Co-Firing in Coal Power Plants

A significant trend shaping the Industrial Wood Pellets Market is the increasing adoption of biomass co-firing in coal power plants, driven by stringent carbon reduction policies and the global shift towards cleaner energy sources. Many countries, particularly in Europe, North America, and Asia, are implementing policies that encourage the gradual phase-out of coal while utilizing existing infrastructure for biomass-based energy production. Co-firing, which involves blending wood pellets with coal in power plants, allows utilities to reduce carbon emissions without requiring complete overhauls of their facilities. This transition is particularly attractive because it minimizes capital investment compared to building entirely new renewable energy plants. Governments are supporting biomass co-firing through renewable energy subsidies, tax incentives, and

carbon credit schemes, making wood pellets a cost-effective alternative to traditional fossil fuels.

In Europe, countries like the United Kingdom, Germany, and the Netherlands have been leading the adoption of biomass co-firing. Major power stations, such as Drax Power Station in the UK, have successfully converted their coal units to operate primarily on industrial wood pellets, setting a precedent for other utilities. Similarly, Japan and South Korea have emerged as major markets, leveraging government-backed incentives to promote biomass use in thermal power generation. The growing demand in Asia-Pacific is particularly crucial, as many nations are still reliant on coal and are looking for practical decarbonization strategies without immediate infrastructure retirement.

However, the expansion of biomass co-firing comes with challenges, such as supply chain constraints, cost fluctuations, and regulatory uncertainties regarding biomass sustainability. Ensuring that wood pellets come from responsibly managed forests and certified sources is essential to meeting international environmental standards, such as the Sustainable Biomass Program (SBP) and Forest Stewardship Council (FSC) certifications. The industry is witnessing increased investments in supply chain optimization, including dedicated pellet manufacturing facilities and improved logistics networks to ensure consistent availability for power plants. As nations accelerate their net-zero targets, biomass co-firing is expected to remain a dominant trend in the industrial wood pellet market, providing a transitional energy solution while renewables like solar and wind continue to expand.

Key Market Players

Drax Group PLC

Enviva Inc.

The Westervelt Company

Fram Renewable Fuels LLC

Rentech Inc.

German Pellets GmbH

Energex American Inc.

LIGNETICS Inc

Report Scope:

In this report, the Global Industrial Wood Pellets Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Industrial Wood Pellets Market, By Application:

Heating

Electricity Production

Industrial Wood Pellets Market, By End User:

Power Generation

Food Processing

Waste Management & Recycling

Others

Industrial Wood Pellets Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Netherlands

Belgium

Asia-Pacific

China

India

Japan

Australia

South Korea

Thailand

Malaysia

South America

Brazil

Argentina

Colombia

Chile

Middle East & Africa

South Africa

Saudi Arabia

UAE

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Industrial Wood Pellets Market.

Available Customizations:

Global Industrial Wood Pellets Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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