Black Pellets Market Size, Share Global Outlook and Forecast 2024-2030

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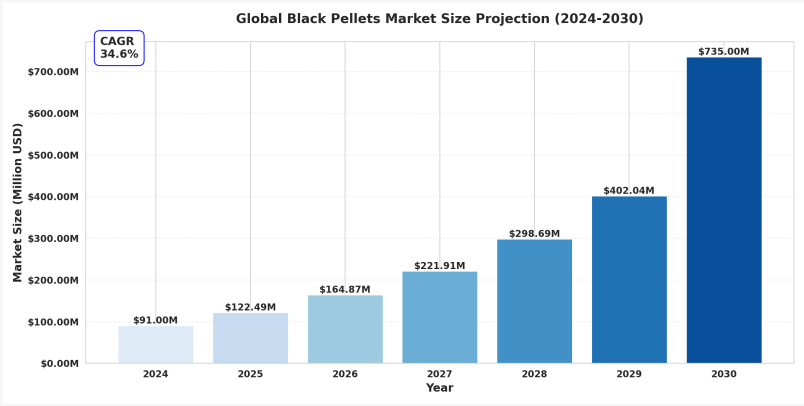

Black Pellets Market

PUNE, INDIA, December 3, 2024 /EINPresswire.com/ -- The global "Black Pellets market" was valued at US$ 91 million in 2024 and is projected to reach US$ 735 million by 2030, at a CAGR of 34.6 % during the forecast period.

Black Pellets are produced through torrefaction or steam exploded, during which water content, cellulose sugars, and other volatile organic compounds are removed from the biomass to produce a solid biofuel with characteristics similar to those of fossil coal.

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The black pellets industry, a segment of the bioenergy market, focuses on producing high-density, thermally treated biomass pellets. These dark pellets are primarily used as a clean, renewable energy source for electricity generation in place of coal. Black wood pellets, as opposed to conventional white wood pellets, undergo steam explosion or torrefaction, which increases their energy density, durability, and hydrophobic qualities, making them simpler to carry and store. Growing worldwide demand for sustainable energy, carbon emission-reduction policies, and technological breakthroughs in pellet production are major factors propelling the industry's expansion. The growth of the market is still hampered by issues including high production costs and competition from other renewable energy sources like solar and wind. Europe and North America are the primary markets, with increasing interest in Asia-Pacific due to its growing

energy needs and environmental commitments.

Segmental Analysis

Torrefaction to hold the highest market share: By type

On the basis of type, the global Black pellets market has been segmented as Torrefaction and Steam Explosion.

The global black pellets market is dominated by the torrefaction type when compared to steam explosion (SE).The main reason for this domination is the higher qualities of torrefied pellets, which are made by heating biomass without oxygen during a thermal treatment procedure. By enhancing their energy density, the pellets are better suited for combustion in the production of electricity. Additionally, torrefaction increases the pellets' hydrophobicity, which lessens their absorption of moisture and enhances their suitability for transportation and storage. Torrefied pellets also typically have a longer shelf life and produce fewer emissions when burned, which fits in nicely with the growing emphasis on sustainability and clean energy solutions throughout the world. Its cost-effectiveness and well-established infrastructure for torrefaction further contribute to its market-leading position. On the other hand, compared to torrefaction, steam explosion has lower market penetration due to its higher production costs and more complicated processing requirements, even if it provides advantages including better biomass conversion for biofuel applications.

Power Generation to hold the highest market share: By Application

In the global black pellet market, the largest market share belonged to the power generating category. Compared to ordinary wood pellets, black pellets—a type of advanced biofuel made from biomass—have a higher energy density, a lower moisture content, and fewer emissions, which makes them an ideal replacement for coal in power generation.

Companies that generate electricity have been using black pellets more frequently as they shift to renewable energy sources, especially in Europe and some regions of Asia. These pellets are a desirable alternative for achieving carbon reduction targets while utilising the current coal infrastructure because they may be utilised in dedicated biomass power plants or co-fired with coal. Due to greater prices and lower demand compared to large-scale power generation needs, other applications, and their use in industrial or residential heating, account for lesser market shares.

Regional Analysis

In terms of Region the global black pellets industry has been segmented as North America, Europe, Asia Pacific, Middle East and Africa and South America.

Due in significant part to its strict carbon emission reduction targets and strong governmental support for renewable energy, Europe is the largest regional market for black pellets. Various nations, including the UK, Germany, and the Netherlands, have implemented regulations and incentives to promote the use of black pellets in the production of electricity. As part of a larger plan to decarbonise the energy industry, biomass energy is also supported by the Renewable Energy Directive (RED II) of the European Union. Demand is further increased by the fact that many coal-fired power stations in Europe have been converted to use black pellets.

Though marginally smaller than Europe, North America—more specifically, the United States and Canada—represents a sizable market as well. Because of its plentiful biomass resources, the region is a major producer of black pellets, mostly for export to Europe. Black pellets are being used more frequently in the United States to co-fire with coal, and Canada, with its big forestry industry, has an abundance of raw materials to sustain manufacturing. However, because renewable energy policies have taken longer to adopt domestically, demand is still smaller than it is in Europe.

For black pellets, the Asia-Pacific area—especially Japan and South Korea—is a developing market. Both nations are working to fulfil their international climate pledges by moving away from coal and cutting back on greenhouse gas emissions. For example, Japan has a sizable biomass import market, and the country is using more and more black pellets to generate electricity. The Renewable Portfolio Standard (RPS) in South Korea encourages the use of biomass, which increases demand in the area.

Black pellets are still in the early stages of being adopted by other regions for the production of electricity, such as Latin America, the Middle East, and Africa. Because of their inadequate infrastructure and laxer renewable energy goals, these areas have not yet seen a substantial increase in demand for black pellets. Nonetheless, some nations with an abundance of biomass resources, such as regions of Southeast Asia and Brazil, may end up becoming major producers of black pellets in the future.

Competitive Analysis

Blackwood Technology B.V.
Idemitsu Kosan Co., Ltd
Zilkha Biomass Energy (NextGen Black Pellets LLC)
Arbaflame AS
Bionet

Airex Energie Inc.
Verdo Holding A/S
Biomass Secure Power Inc.

The global market for black pellets is competitive, with a mix of well-known energy firms, biomass producers, and growing businesses seeking to take advantage of the rising demand for renewable energy. Arbaflame, Zilkha Biomass Energy, Blackwood Technology are some of the major companies in the sector. These businesses set themselves apart with improvements in manufacturing techniques, efficient supply chains, and long-term energy contracts. Bigger businesses like Enviva and Pinnacle Renewable Energy rule the market because of their vast production capabilities, robust logistics networks, and connections for worldwide export, particularly with Europe and Asia. In the meantime, new players are concentrating on technology developments such torrefaction and pellet durability in order to lower costs and improve the energy efficiency of black pellets.

Recent Development

May 10th 2024, Blackwood announced that its FlashTordemonstration factory in Lampang Province, Thailand, had successfully produced a test amount of ultra Black pellets.. Mr. Maarten Herrebrugh, CEO of Blackwood, commented: “the Demo plant was originally designed to produce regular black pellets from wood as well as agricultural residues. Those pellets are aimed at replacing fossil coal in power stations and industrial boilers. However, our FlashTor technology is sufficiently versatile to also produce highly carbonized products, with gross calorific values ranging from 25 to 30 MJ/kg and fixed carbon content varying between 50% and 80%. This positions our FlashTor technology as a proven solution to serve the needs of the different biocarbon market segments.”

March 29th 2023, Thailand's first commercial black pellet mill has chosen Blackwood Technology B.V. as its torrefaction technology partner. For the supply of a 10 tonne per hour FlashTor® torrefaction system for this new torrefaction plant in the Thai province of Lampang, Blackwood and TTCL Public Company Ltd have signed a deal.

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Industry Dynamics

Industry Trend

Decarbonization and the increasing adoption of renewable energy sources

The global push for decarbonisation and the growing uptake of renewable energy sources are causing a dramatic change in the black pellet market. One significant trend is the increasing use

of black pellets in power plants as a co-firing material with coal, particularly in regions like Asia and Europe where governments have set very strict carbon reduction objectives. Technological developments like steam explosion and torrefaction, which improve the energy density, durability, and transportability of black pellets and increase their competitiveness with fossil fuels, are also supporting this shift.

The growing demand in the Asia-Pacific area, especially in South Korea and Japan, which are looking to phase out coal and increase their reliance on bioenergy to satisfy their energy demands, is another significant trend. Furthermore, North American businesses are concentrating on increasing their manufacturing capabilities, mostly for export, in order to take advantage of the rising global demand.

Initiatives related to sustainability and the circular economy are also gaining traction, and a lot of the companies in the black pellet industry are trying to get biomass from agricultural leftovers or sustainable forestry. Furthermore, as businesses look to improve their market positions, scale up production, and broaden their global reach, strategic alliances and mergers and acquisitions are happening more frequently.

Report Scope

The report includes Global & Regional market status and outlook for 2017-2028. Further, the report provides breakdown details about each region & countries covered in the report. Identifying its sales, sales volume & revenue forecast. With detailed analysis by Types, Application. The report also covers the key players of the industry including Company Profile, Product Specifications, Production Capacity/Sales, Revenue, Price, and Gross Margin 2017-2028 & Sales with a thorough analysis of the market's competitive landscape and detailed information on vendors and comprehensive details of factors that will challenge the growth of major market vendors.

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By Type

Zilkha Biomass Energy
New Biomass Energy

By Feedstock Type

Woody Biomass
Agricultural Residues
Forest Residues

□□Others (e.g., Industrial Waste Biomass)

By Technology

□□Steam Explosion
□□Torrefaction
□□Hydrothermal Carbonization
□□Others

By Application

□□Residential Heating
□□Commercial Heating
□□Industrial Heating
□□Power Generation
□□Cofiring in Coal Power Plants

By End-User Industry

□□Residential Sector
□□Commercial Sector
□□Industrial Sector
□□Power Utilities
□□Agriculture
□□Others

Report Coverage

□□Industry Trends
□□SWOT Analysis
□□PESTEL Analysis
□□Porter's Five Forces Analysis
□□Market Competition by Manufacturers
□□Key Companies Profiled
□□Marketing Channel, Distributors and Customers
□□Market Dynamics
□□Production and Supply Forecast
□□Demand Forecast
□□Research Findings and Conclusion

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Outline of Major Chapters:

Chapter 1: Introduces the definition of Black Pellets, market overview.

Chapter 2: Global Black Pellets market size in revenue and volume.

Chapter 3: Detailed analysis of Black Pellets manufacturers competitive landscape, price, sales and revenue market share, latest development plan, merger, and acquisition information, etc.

Chapter 4: Provides the analysis of various market segments by type, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different market segments.

Chapter 5: Provides the analysis of various market segments by application, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different downstream markets.

Chapter 6: Sales of Black Pellets in regional level and country level. It provides a quantitative analysis of the market size and development potential of each region and its main countries and introduces the market development, future development prospects, market space of each country in the world.

Chapter 7: Provides profiles of key players, introducing the basic situation of the main companies in the market in detail, including product sales, revenue, price, gross margin, product introduction, recent development, etc.

Chapter 8: Global Black Pellets capacity by region & country.

Chapter 9: Introduces the market dynamics, latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

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