

# **Bioderived Feedstock Chains Market Forecasts to 2034 – Global Analysis By Feedstock Type (Agricultural Residues, Forestry Residues, Energy Crops, Food & Beverage Byproducts and Municipal Solid Waste), Conversion Pathway, End User, and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Bioderived Feedstock Chains Market is accounted for \$15.1 billion in 2026 and is expected to reach \$28.0 billion by 2034 growing at a CAGR of 8.0% during the forecast period. Bioderived feedstock chains are systems that obtain raw inputs from renewable biological sources, including crops, algae, and agricultural waste. These supply chains enable more sustainable manufacturing by decreasing reliance on fossil fuels and minimizing carbon emissions. They consist of key steps such as growth, collection, pretreatment, transformation, and delivery to industries like energy, chemicals, and materials. Progress in biotechnology and supply chain management has enhanced their performance and expansion potential. Despite this, issues like land availability, seasonal supply fluctuations, and high processing expenses persist. Overall, these chains are essential for supporting circular economy strategies and encouraging sustainable industrial practices worldwide. According to the European Union's Renewable Energy Directive (RED III, adopted in 2023), the EU set a binding target of at least 42.5% renewable energy share in gross final energy consumption by 2030, with an aspirational goal of 45%.

Market Dynamics:

Driver:

Growing demand for sustainable and low-carbon materials

Rising attention toward environmental sustainability significantly drives the bioderived feedstock chains market. Businesses are increasingly replacing fossil-based materials

with renewable biological sources to lower emissions and comply with environmental standards. Regulatory frameworks and government incentives are encouraging the adoption of greener production methods. At the same time, consumers are becoming more conscious of environmentally friendly products, influencing manufacturers to use sustainable inputs. Consequently, industries including packaging, chemicals, and energy are incorporating these materials into their supply networks to support sustainability objectives and strengthen their environmental performance.

#### Restraint:

##### High production and processing costs

Elevated costs related to production and processing significantly hinder the growth of bioderived feedstock chains. Transforming biomass into valuable outputs involves complex technologies, costly equipment, and energy-demanding operations, increasing overall expenditure. Expenses linked to gathering, transporting, and storing raw biological materials further intensify the financial challenge. In comparison to fossil-based options, bioderived feedstocks often lack price competitiveness, particularly at scale. Smaller enterprises face greater difficulties due to insufficient infrastructure and capital. These financial constraints reduce investor interest and slow adoption rates, ultimately restricting the widespread development and scalability of bioderived feedstock supply systems across global markets.

#### Opportunity:

##### Advancements in waste-to-value technologies

Progress in waste-to-value technologies provides significant growth opportunities for bioderived feedstock chains. Modern innovations allow agricultural waste, food residues, and industrial byproducts to be transformed into useful fuels, chemicals, and materials. These advancements improve resource utilization while lowering environmental impact. With the rising adoption of circular economy practices, using waste as a feedstock source is gaining momentum. This approach creates additional supply channels and reduces reliance on conventional biomass. Ongoing improvements in technology efficiency and affordability are enhancing the viability of waste-based feedstocks, supporting the expansion and diversification of bioderived feedstock supply systems worldwide.

#### Threat:

##### Competition for land and resources

Rising competition for land and natural resources poses a threat to bioderived feedstock chains. Land is needed for multiple purposes, including food crops, livestock, and biomass production, creating conflicts in resource utilization. Increasing demand for feedstocks can strain land availability, water supplies, and ecosystems. This pressure may result in higher costs and reduced access to necessary raw materials. Concerns about food security and environmental protection could also lead to stricter regulations

on biomass cultivation. These factors limit the ability of feedstock supply systems to expand efficiently while maintaining a balance between economic growth and sustainability objectives.

**Covid-19 Impact:**

The impact of the COVID-19 pandemic on bioderived feedstock chains was both challenging and transformative. Supply chain interruptions, workforce limitations, and transport restrictions disrupted biomass sourcing and processing activities. Several facilities faced reduced operations, leading to delays in production and investment plans. At the same time, the situation strengthened focus on sustainability and the importance of resilient supply networks. During recovery, governments and industries prioritized renewable resources and circular economy strategies. Demand for bio-based materials, especially in packaging and healthcare, remained relatively steady. Overall, the pandemic exposed system weaknesses while encouraging increased adoption of sustainable feedstock solutions.

The agricultural residues segment is expected to be the largest during the forecast period

The agricultural residues segment is expected to account for the largest market share during the forecast period because of their high availability and economic advantages. Materials such as straw, husks, and crop leftovers are produced extensively from agricultural operations, ensuring a steady and dependable supply. Since their use does not interfere with food production, they are considered a sustainable option. Well-developed collection practices and compatibility with current supply systems further strengthen their position. Many industries favour agricultural residues for manufacturing biofuels, chemicals, and materials due to their consistent availability and lower processing expenses when compared with alternative feedstock categories.

The hybrid processes segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the hybrid processes segment is predicted to witness the highest growth rate as they merge the benefits of biochemical and thermochemical techniques. This combination improves conversion efficiency, increases output quality, and allows diverse biomass materials to be processed effectively. These systems maximize resource use while minimizing waste, supporting sustainability goals. Industries are showing growing interest in hybrid solutions to enhance both economic returns and environmental outcomes. Ongoing technological progress and rising investments in integrated processing methods are driving their expansion, positioning hybrid processes as the most rapidly growing segment within bioderived feedstock supply systems.

**Region with largest share:**

During the forecast period, the North America region is expected to hold the largest

market share owing to its developed agricultural systems and emphasis on renewable energy solutions. The region has access to significant biomass resources, including agricultural residues, forest by-products, and energy crops. Favourable government support, ongoing research, and investments in bio-based sectors contribute to its strong market position. Efficient supply chain infrastructure and advanced technologies facilitate smooth handling and processing of feedstock's. Moreover, increasing demand for biofuels and eco-friendly materials across various industries reinforces its leadership.

#### Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, driven by strong industrial growth, population expansion, and rising sustainability awareness. The region produces significant amounts of biomass from agriculture and organic waste, ensuring ample feedstock availability. Government initiatives supporting renewable energy, biofuels, and sustainable practices are accelerating market development. Increasing environmental concerns and expanding industries are boosting the use of bioderived resources. Furthermore, advancements in infrastructure and technology are improving supply chain operations.

#### Key players in the market

Some of the key players in Bioderived Feedstock Chains Market include BASF SE, DSM, Dow Inc., Clariant AG, Enerkem Inc., GranBio, VIRENT, Inc., Abengoa S.A., INEOS Bio, Beta Renewables S.p.A., Amyris, Inc., Braskem S.A., Cargill, Incorporated, Corbion N.V., NatureWorks LLC, ADM, Evonik Industries and Novozymes.

#### Key Developments:

In November 2025, Clariant announced that it has signed a 10-year agreement with SECCO Petrochemicals to provide CLARITY Prime digital services. The new customer will use the AI-powered catalyst performance monitoring platform to enhance production efficiency at its 900-KTA ethylene plant in Shanghai, Jinshan District. CLARITY Prime was previously only available to customers of Clariant's ammonia, methanol, and hydrogen catalysts.

In October 2025, Dow and MEGlobal have finalized an agreement for Dow to supply an additional equivalent to 100 KTA of ethylene from its Gulf Coast operations. The ethylene will serve as a key feedstock for MEGlobal's ethylene glycol (EG) manufacturing facility co-located at Dow's and MEGlobal's Oyster Creek site.

In March 2025, Evonik has entered into an exclusive agreement with the Cleveland-based Sea-Land Chemical Company for the distribution of its cleaning solutions in the U.S. The agreement builds on a long-standing relationship with the distributor and expands the reach of Evonik's cleaning solutions to the entire U.S. region.

#### Feedstock Types Covered:

Agricultural Residues

Forestry Residues

Energy Crops

Food & Beverage Byproducts

Municipal Solid Waste

Conversion Pathways Covered:

Biochemical

Thermochemical

Hybrid Processes

End Users Covered:

Biofuels

Bioenergy

Biochemicals

Biomaterials

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

#### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

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