

Circular Food Waste Valorization Market Forecasts to 2034 – Global Analysis By Food Waste Source (Food Processing Waste, Retail and Supermarket Food Waste, Commercial Food Service Waste, Household Food Waste, Agricultural Food Waste, Institutional Food Waste and Other Food Waste Sources), Valorization, Valorized Product, Application, Waste Management Model, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Circular Food Waste Valorization Market is accounted for \$2.1 billion in 2026 and is expected to reach \$5.8 billion by 2034 growing at a CAGR of 13.5% during the forecast period. Circular food waste valorization refers to the sustainable conversion of food processing by-products, retail discards, agricultural residues, and consumer food waste into valuable products such as biogas, biofertilizers, compost, animal feed, bio-based chemicals, food ingredients, and industrial enzymes through biological, thermal, and chemical processing technologies. These valorization processes include anaerobic digestion, composting, fermentation, insect-based bioconversion, and pyrolysis.

Market Dynamics:

Driver:

Global Food Waste Reduction Mandates

Global food waste reduction mandates and national circular economy targets are driving investment in food waste valorization infrastructure, as governments commit to halving food waste and recovering value from unavoidable discards through energy, feed, and

material applications. The UN Sustainable Development Goal target 12.3 is accelerating food waste policy development. Increasing landfill diversion requirements, organic waste regulations, and producer responsibility initiatives are encouraging food processors, retailers, municipalities, and waste management companies to adopt technologies that convert discarded food into higher-value products and renewable resources.

Restraint:

Feedstock Contamination and Segregation Costs

Feedstock contamination and segregation costs for food waste processing present economic challenges for valorization operations, as mixed food waste with packaging, plastics, and non-organic contaminants requires sorting and pre-processing that increase operational costs. Source-separated collection systems require consumer and business participation. Variations in moisture content, organic composition, and contamination levels can also affect process efficiency and product quality. Investments in collection infrastructure, automated sorting technologies, preprocessing equipment, and quality-control systems can increase capital requirements for commercial-scale food waste valorization facilities.

Opportunity:

Insect-Based Protein Production

Insect-based protein production from food waste represents a significant market opportunity for creating sustainable animal feed and food ingredients while reducing reliance on conventional protein sources, as black soldier fly and mealworm farming gain commercial scale. Insect bioconversion technology is becoming increasingly efficient and cost-competitive. Growing demand for alternative protein sources, sustainable aquaculture feed, and low-impact livestock nutrition is supporting investment in insect farming infrastructure. Regulatory developments and improvements in insect processing technologies are further expanding commercial opportunities for converting food waste into valuable protein and lipid products.

Threat:

Conventional Animal Feed and Fertilizer Pricing

Conventional animal feed and fertilizer pricing cycles create competitive pressure on valorized products, as shifts in agricultural commodity markets can make traditional feed and fertilizer cheaper than recovered alternatives, undermining investment returns for food waste valorization infrastructure. Fluctuations in grain, soybean, natural gas, and

mineral fertilizer prices can directly affect the relative economics of recovered products. In addition, inconsistent market prices for biogas, organic fertilizers, animal feed, and bio-based ingredients can increase revenue uncertainty and complicate long-term investment decisions for valorization operators.

Covid-19 Impact:

The COVID-19 pandemic generated unprecedented food waste from supply chain disruptions and closed hospitality sectors, highlighting the urgent need for food waste valorization capacity and prompting government investment in food waste reduction and recovery infrastructure. The crisis accelerated interest in food waste valorization as a resilience strategy. Disruptions across agricultural, foodservice, and retail supply chains demonstrated the vulnerability of conventional food distribution systems. As a result, businesses and governments increasingly evaluated localized organic waste processing, renewable energy generation, animal feed production, and resource recovery as strategies for strengthening food system resilience.

The Food Processing Waste segment is expected to be the largest during the forecast period

The Food Processing Waste segment is expected to account for the largest market share during the forecast period, due to food processing facilities generating concentrated volumes of homogenous organic by-products that are ideal for efficient valorization through anaerobic digestion, fermentation, and animal feed production. Established supply chain relationships and consistent waste characteristics support segment scale. Food processors can also integrate valorization systems directly into existing operations, reducing transportation requirements and improving feedstock reliability. Increasing regulatory pressure to divert organic waste from landfills is further supporting segment expansion.

The Anaerobic Digestion segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the Anaerobic Digestion segment is predicted to witness the highest growth rate, driven by escalating demand for renewable natural gas and biogas for transportation and grid applications, combined with significant investment in commercial-scale anaerobic digestion facilities for food waste processing. Policy support for biogas and biomethane production is accelerating adoption. Increasing demand for renewable energy, landfill diversion, and low-carbon fuels is encouraging municipalities and businesses to develop anaerobic digestion capacity. Improvements in digester efficiency and biogas upgrading technologies are further enhancing project economics.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to the United States having significant food waste volumes,

established anaerobic digestion infrastructure, and supportive state-level food waste diversion policies including California's SB 1383. Strong waste management industry presence supports regional leadership. Growing investments in renewable natural gas production, organic waste collection, composting, and food waste processing infrastructure are further supporting market development. Increasing participation from food manufacturers, retailers, municipalities, and waste management companies is strengthening regional demand for valorization technologies.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to massive food waste generation across China, India, and Southeast Asia, combined with aggressive government food waste reduction policies and circular economy investment. Rapid urbanization and industrialization are driving food waste valorization infrastructure development. Expanding food processing industries, growing municipal waste volumes, and increasing demand for renewable energy and sustainable agricultural inputs are creating substantial market opportunities. Investments in anaerobic digestion, composting, insect bioconversion, and fermentation technologies are expected to accelerate regional adoption.

Key players in the market

Some of the key players in Global Circular Food Waste Valorization Market include Veolia Environnement S.A., SUEZ, Waste Management, Inc., Republic Services, Inc., Darling Ingredients Inc., ADM, Ingredion Incorporated, DSM-Firmenich AG, Novonesis A/S, Corbion N.V., EnviTec Biogas AG, BASF SE, Clariant AG, International Flavors & Fragrances Inc., Symrise AG, Ecolab Inc., Agilent Technologies, Inc., and Orsted A/S.

Key Developments:

In August 2026, Veolia Environnement S.A. announced a new commercial-scale anaerobic digestion facility for food waste to biogas generation. The facility is expected to strengthen organic waste recovery capabilities while converting food waste into renewable biogas for energy and fuel applications.

In July 2026, Darling Ingredients Inc. launched an innovative insect-based protein production facility using food waste feedstock. The facility is designed to convert organic food waste into high-value insect-derived protein and other commercially valuable outputs, supporting alternative feed production and resource efficiency.

Food Waste Sources Covered:

Food Processing Waste

Retail and Supermarket Food Waste

Commercial Food Service Waste

Household Food Waste

Agricultural Food Waste

Institutional Food Waste

Other Food Waste Sources

Valorizations Covered:

Anaerobic Digestion

Composting

Fermentation

Insect-Based Bioconversion

Pyrolysis and Thermochemical Conversion

Extraction and Separation

Enzymatic Processing

Valorized Products Covered:

Biogas and Biomethane

Biofertilizers

Compost

Animal Feed

Bio-Based Chemicals

Food Ingredients

Industrial Enzymes

Biofuels

Applications Covered:

Agriculture

Animal Feed

Food and Beverage

Chemicals and Materials

Energy Generation

Pharmaceuticals and Nutraceuticals

Personal Care and Cosmetics

Waste Management Models Covered:

Source-Separated Collection

Centralized Food Waste Processing

Decentralized Food Waste Processing

On-Site Food Waste Valorization

Integrated Food Waste Management

Digital Food Waste Tracking

Food Waste Redistribution and Recovery

End Users Covered:

Food Processing Companies

Retailers and Supermarkets

Restaurants and Food Service Providers

Agricultural Producers

Animal Feed Manufacturers

Bioenergy Producers

Chemical and Biotechnology Companies

Municipalities and Waste Management Companies

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)

Competitive Benchmarking

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