

Food Waste Valorization Technologies Market Forecasts to 2034 – Global Analysis By Waste Source (Fruit & Vegetable Waste, Dairy Waste, Meat, Poultry & Seafood Waste, Cereal & Grain Waste, Food Processing Waste, Retail & Supermarket Waste, and Food Service & Household Waste), Technology, Product Type, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Food Waste Valorization Technologies Market is accounted for \$12.9 billion in 2026 and is expected to reach \$22.9 billion by 2034 growing at a CAGR of 7.4% during the forecast period. Food waste valorization technologies refer to the industrial processes and equipment systems that convert organic waste streams from food production, processing, retail, and consumption into valuable products including biofuels, animal feed ingredients, biofertilizers, bioplastics, and functional food compounds. These technologies encompass biochemical conversion processes including anaerobic digestion and fermentation, thermochemical conversion methods including pyrolysis and gasification, mechanical processing systems for sorting and size reduction, and extraction technologies for recovering bioactive compounds and nutritional ingredients from waste biomass.

Market Dynamics:

Driver:

Circular Economy Policy Push

The accelerating global adoption of circular economy principles and food waste reduction targets is driving substantial investment in valorization technologies that transform waste streams from disposal liabilities into revenue-generating resource assets. The European Union Waste Framework Directive and national food waste reduction strategies are mandating significant decreases in landfill disposal while promoting waste hierarchy principles that prioritize reuse, recycling, and energy recovery through advanced valorization processes. Government incentive programs including tax credits, grants, and feed-in tariffs for renewable energy and bio-based products are improving the economic viability of food waste valorization facilities that produce biogas, biofuels, and biochemical commodities.

Restraint:

Feedstock Supply Inconsistency

The inherent variability in food waste feedstock composition, quality, and seasonal availability presents significant operational challenges for valorization facilities seeking to maintain consistent production outputs and product quality specifications. Food waste streams from different sources including fruit and vegetable processing, dairy operations, meat processing, and retail distribution exhibit widely varying moisture contents, nutrient profiles, and contaminant levels that complicate process optimization and equipment design. The perishable nature of many food waste streams requires rapid collection and processing to prevent spoilage and pathogen proliferation, creating logistical constraints and transportation cost burdens that reduce facility economics.

Opportunity:

Bioplastics Feedstock Demand

The rapidly expanding global demand for biodegradable and bio-based plastics is creating substantial market opportunities for food waste valorization technologies capable of producing polylactic acid precursors, polyhydroxyalkanoates, and other biopolymer feedstocks from organic waste carbohydrates and lipids. Major consumer goods companies including Unilever, Nestle, and PepsiCo have committed to significant reductions in virgin petroleum-based plastic usage, creating procurement demand for bio-based alternatives that food waste-derived feedstocks can supply at competitive scales. Advances in microbial fermentation and enzymatic conversion technologies are improving the efficiency and yield of bioplastic precursor production from heterogeneous

food waste streams, reducing production costs and expanding the range of waste types suitable for biopolymer feedstock applications.

Threat:

Conventional Disposal Cost Competition

The historically low cost of conventional food waste disposal through landfill tipping and municipal incineration in many regions presents persistent competitive threats to valorization technologies, particularly when fossil fuel energy prices decline and waste management infrastructure is already well-established. Municipal solid waste management contracts and long-term landfill operating agreements create institutional inertia that favors continued conventional disposal over capital-intensive valorization facility development, even when lifecycle environmental benefits favor waste-to-resource conversion.

Covid-19 Impact:

The COVID-19 pandemic initially disrupted food waste valorization technology supply chains through manufacturing facility closures and transportation restrictions that delayed equipment deliveries and postponed processing plant construction projects. Mid-pandemic restaurant closures and food service disruptions dramatically altered food waste stream compositions and volumes, forcing valorization facilities to rapidly adapt processing protocols for surges in retail food surplus while managing declines in commercial food preparation waste. Post-pandemic emphasis on supply chain resilience and domestic resource recovery has sustained investment in food waste valorization infrastructure, with the technology now positioned as essential for building circular food systems capable of converting pandemic-exposed waste vulnerabilities into economic opportunities while reducing dependence on imported agricultural inputs and fossil fuel-derived commodities.

The biofuels segment is expected to be the largest during the forecast period

The biofuels segment is expected to account for the largest market share during the forecast period, due to the established commercial viability of anaerobic digestion and fermentation processes for converting diverse food waste streams into biogas, biomethane, and bioethanol products with established markets and distribution infrastructure. Biofuel production from food waste benefits from mature technology platforms, extensive regulatory support through renewable energy mandates, and

established offtake agreements with energy utilities and transportation fuel blenders that provide revenue certainty for valorization facility investors. Major waste management companies including Veolia, SUEZ, and Engie have developed extensive anaerobic digestion facility portfolios that process food waste alongside other organic streams to produce renewable natural gas for grid injection and vehicle fuel applications.

The biochemical conversion technologies segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the biochemical conversion technologies segment is predicted to witness the highest growth rate, driven by technological advances in anaerobic digestion, fermentation, and enzymatic hydrolysis processes that are achieving improved conversion efficiencies and broader substrate compatibility across diverse food waste compositions. Anaerobic digestion systems are increasingly incorporating advanced pretreatment methods including thermal hydrolysis and mechanical size reduction that accelerate biogas production rates and increase methane yields from complex food waste matrices. Fermentation technologies for producing organic acids, enzymes, and biochemical precursors from food waste carbohydrates are achieving commercial scale with improved strain engineering and process control capabilities that enhance product selectivity and titers.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to advanced waste management infrastructure, stringent landfill diversion regulations, and substantial commercial food processing operations that generate consistent high-volume waste streams suitable for valorization processing. The United States maintains extensive food manufacturing and retail sectors that produce millions of tonnes of organic waste annually, creating substantial feedstock availability for large-scale anaerobic digestion and composting facilities. Canadian agricultural processing and food manufacturing operations are increasingly deploying valorization technologies to comply with provincial organic waste diversion mandates while generating renewable natural gas for injection into distribution pipelines.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to rapid urbanization and food consumption growth across China, India, and Southeast Asia that is generating escalating food waste volumes requiring sustainable

management solutions. Chinese government initiatives promoting circular economy development and food waste reduction are channeling significant investment into anaerobic digestion and biogas facilities for municipal and industrial organic waste processing. Indian government programs supporting waste-to-energy development and organic fertilizer production are creating favorable policy environments for food waste valorization technology adoption across urban municipal solid waste management systems.

Key players in the market

Some of the key players in Food Waste Valorization Technologies Market include Veolia Environment S.A., SUEZ S.A., Kanadevia Corporation, ANDRITZ AG, Novonesis A/S, Buehler Group, GEA Group AG, TOMRA Systems ASA, Valmet Oyj, BTA International GmbH, Eisenmann SE, ReFood GmbH & Co. KG, Divert Inc., Renewi plc, Biogen (UK) Ltd., ENGIE SA, and Waste Management, Inc..

Key Developments:

In June 2026, Veolia Environment S.A. launched an integrated food waste biorefinery platform combining anaerobic digestion with nutrient recovery systems for simultaneous biogas production and organic fertilizer generation.

In May 2026, Novonesis A/S expanded its enzymatic food waste processing portfolio with novel cellulase formulations designed for efficient fiber hydrolysis in fruit and vegetable waste valorization applications.

In April 2026, ANDRITZ AG introduced an advanced mechanical processing line for food waste pretreatment featuring automated sorting and size reduction capabilities optimized for subsequent biochemical conversion stages.

Product Types Covered:

Biofuels

Animal Feed Ingredients

Biofertilizers

Bioplastics & Biopolymers

Functional Food Ingredients

Industrial Chemicals

Energy & Biogas

Waste Sources Covered:

Fruit & Vegetable Waste

Dairy Waste

Meat, Poultry & Seafood Waste

Cereal & Grain Waste

Food Processing Waste

Retail & Supermarket Waste

Food Service & Household Waste

Technologies Covered:

Biochemical Conversion Technologies

Thermochemical Conversion Technologies

Mechanical Processing Technologies

Extraction Technologies

Applications Covered:

Food & Beverage Industry

Agriculture

Animal Nutrition

Energy Generation

Pharmaceuticals & Nutraceuticals

Cosmetics & Personal Care

Chemical Manufacturing

End Users Covered:

Food Processing Companies

Waste Management Companies

Biotechnology Companies

Agricultural Enterprises

Research Institutes & Universities

Government & Municipal Organizations

Other End Users

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

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY WASTE SOURCE

- 5.1 Fruit & Vegetable Waste
- 5.2 Dairy Waste
- 5.3 Meat, Poultry & Seafood Waste
- 5.4 Cereal & Grain Waste
- 5.5 Food Processing Waste
- 5.6 Retail & Supermarket Waste
- 5.7 Food Service & Household Waste

6 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY TECHNOLOGY

- 6.1 Biochemical Conversion Technologies
- 6.2 Thermochemical Conversion Technologies
- 6.3 Mechanical Processing Technologies
- 6.4 Extraction Technologies

7 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY PRODUCT TYPE

- 7.1 Biofuels
- 7.2 Animal Feed Ingredients
- 7.3 Biofertilizers
- 7.4 Bioplastics & Biopolymers
- 7.5 Functional Food Ingredients
- 7.6 Industrial Chemicals
- 7.7 Energy & Biogas

8 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY APPLICATION

- 8.1 Food & Beverage Industry
- 8.2 Agriculture

- 8.3 Animal Nutrition
- 8.4 Energy Generation
- 8.5 Pharmaceuticals & Nutraceuticals
- 8.6 Cosmetics & Personal Care
- 8.7 Chemical Manufacturing

9 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY END USER

- 9.1 Food Processing Companies
- 9.2 Waste Management Companies
- 9.3 Biotechnology Companies
- 9.4 Agricultural Enterprises
- 9.5 Research Institutes & Universities
- 9.6 Government & Municipal Organizations
- 9.7 Other End Users

10 GLOBAL FOOD WASTE VALORIZATION TECHNOLOGIES MARKET, BY GEOGRAPHY

- 10.1 North America
 - 10.1.1 United States
 - 10.1.2 Canada
 - 10.1.3 Mexico
- 10.2 Europe
 - 10.2.1 United Kingdom
 - 10.2.2 Germany
 - 10.2.3 France
 - 10.2.4 Italy
 - 10.2.5 Spain
 - 10.2.6 Netherlands
 - 10.2.7 Belgium
 - 10.2.8 Sweden
 - 10.2.9 Switzerland
 - 10.2.10 Poland
 - 10.2.11 Rest of Europe
- 10.3 Asia Pacific
 - 10.3.1 China
 - 10.3.2 Japan

- 10.3.3 India
- 10.3.4 South Korea
- 10.3.5 Australia
- 10.3.6 Indonesia
- 10.3.7 Thailand
- 10.3.8 Malaysia
- 10.3.9 Singapore
- 10.3.10 Vietnam
- 10.3.11 Rest of Asia Pacific
- 10.4 South America
 - 10.4.1 Brazil
 - 10.4.2 Argentina
 - 10.4.3 Colombia
 - 10.4.4 Chile
 - 10.4.5 Peru
 - 10.4.6 Rest of South America
- 10.5 Rest of the World (RoW)
 - 10.5.1 Middle East
 - 10.5.1.1 Saudi Arabia
 - 10.5.1.2 United Arab Emirates
 - 10.5.1.3 Qatar
 - 10.5.1.4 Israel
 - 10.5.1.5 Rest of Middle East
 - 10.5.2 Africa
 - 10.5.2.1 South Africa
 - 10.5.2.2 Egypt
 - 10.5.2.3 Morocco
 - 10.5.2.4 Rest of Africa

11 STRATEGIC MARKET INTELLIGENCE

- 11.1 Industry Value Network and Supply Chain Assessment
- 11.2 White-Space and Opportunity Mapping
- 11.3 Product Evolution and Market Life Cycle Analysis
- 11.4 Channel, Distributor, and Go-to-Market Assessment

12 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 12.1 Mergers and Acquisitions

- 12.2 Partnerships, Alliances, and Joint Ventures
- 12.3 New Product Launches and Certifications
- 12.4 Capacity Expansion and Investments
- 12.5 Other Strategic Initiatives

13 COMPANY PROFILING

- 13.1 Veolia Environment S.A.
- 13.2 SUEZ S.A.
- 13.3 Hitachi Zosen Corporation
- 13.4 ANDRITZ AG
- 13.5 Novonesis A/S
- 13.6 B?hler Group
- 13.7 GEA Group AG
- 13.8 TOMRA Systems ASA
- 13.9 Valmet Oyj
- 13.10 BTA International GmbH
- 13.11 Eisenmann SE
- 13.12 ReFood GmbH & Co. KG
- 13.13 Divert Inc.
- 13.14 Renewi plc
- 13.15 Biogen (UK) Ltd.
- 13.16 Engie SA
- 13.17 Kanadevia Corporation

List Of Tables

LIST OF TABLES

Table 1 Global Food Waste Valorization Technologies Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Food Waste Valorization Technologies Market Outlook, By Waste Source (2023-2034) (\$MN)

Table 3 Global Food Waste Valorization Technologies Market Outlook, By Fruit & Vegetable Waste (2023-2034) (\$MN)

Table 4 Global Food Waste Valorization Technologies Market Outlook, By Dairy Waste (2023-2034) (\$MN)

Table 5 Global Food Waste Valorization Technologies Market Outlook, By Meat, Poultry & Seafood Waste (2023-2034) (\$MN)

Table 6 Global Food Waste Valorization Technologies Market Outlook, By Cereal & Grain Waste (2023-2034) (\$MN)

Table 7 Global Food Waste Valorization Technologies Market Outlook, By Food Processing Waste (2023-2034) (\$MN)

Table 8 Global Food Waste Valorization Technologies Market Outlook, By Retail & Supermarket Waste (2023-2034) (\$MN)

Table 9 Global Food Waste Valorization Technologies Market Outlook, By Food Service & Household Waste (2023-2034) (\$MN)

Table 10 Global Food Waste Valorization Technologies Market Outlook, By Technology (2023-2034) (\$MN)

Table 11 Global Food Waste Valorization Technologies Market Outlook, By Biochemical Conversion Technologies (2023-2034) (\$MN)

Table 12 Global Food Waste Valorization Technologies Market Outlook, By Thermochemical Conversion Technologies (2023-2034) (\$MN)

Table 13 Global Food Waste Valorization Technologies Market Outlook, By Mechanical Processing Technologies (2023-2034) (\$MN)

Table 14 Global Food Waste Valorization Technologies Market Outlook, By Extraction Technologies (2023-2034) (\$MN)

Table 15 Global Food Waste Valorization Technologies Market Outlook, By Product Type (2023-2034) (\$MN)

Table 16 Global Food Waste Valorization Technologies Market Outlook, By Biofuels (2023-2034) (\$MN)

Table 17 Global Food Waste Valorization Technologies Market Outlook, By Animal Feed Ingredients (2023-2034) (\$MN)

Table 18 Global Food Waste Valorization Technologies Market Outlook, By Biofertilizers

(2023-2034) (\$MN)

Table 19 Global Food Waste Valorization Technologies Market Outlook, By Bioplastics & Biopolymers (2023-2034) (\$MN)

Table 20 Global Food Waste Valorization Technologies Market Outlook, By Functional Food Ingredients (2023-2034) (\$MN)

Table 21 Global Food Waste Valorization Technologies Market Outlook, By Industrial Chemicals (2023-2034) (\$MN)

Table 22 Global Food Waste Valorization Technologies Market Outlook, By Energy & Biogas (2023-2034) (\$MN)

Table 23 Global Food Waste Valorization Technologies Market Outlook, By Application (2023-2034) (\$MN)

Table 24 Global Food Waste Valorization Technologies Market Outlook, By Food & Beverage Industry (2023-2034) (\$MN)

Table 25 Global Food Waste Valorization Technologies Market Outlook, By Agriculture (2023-2034) (\$MN)

Table 26 Global Food Waste Valorization Technologies Market Outlook, By Animal Nutrition (2023-2034) (\$MN)

Table 27 Global Food Waste Valorization Technologies Market Outlook, By Energy Generation (2023-2034) (\$MN)

Table 28 Global Food Waste Valorization Technologies Market Outlook, By Pharmaceuticals & Nutraceuticals (2023-2034) (\$MN)

Table 29 Global Food Waste Valorization Technologies Market Outlook, By Cosmetics & Personal Care (2023-2034) (\$MN)

Table 30 Global Food Waste Valorization Technologies Market Outlook, By Chemical Manufacturing (2023-2034) (\$MN)

Table 31 Global Food Waste Valorization Technologies Market Outlook, By End User (2023-2034) (\$MN)

Table 32 Global Food Waste Valorization Technologies Market Outlook, By Food Processing Companies (2023-2034) (\$MN)

Table 33 Global Food Waste Valorization Technologies Market Outlook, By Waste Management Companies (2023-2034) (\$MN)

Table 34 Global Food Waste Valorization Technologies Market Outlook, By Biotechnology Companies (2023-2034) (\$MN)

Table 35 Global Food Waste Valorization Technologies Market Outlook, By Agricultural Enterprises (2023-2034) (\$MN)

Table 36 Global Food Waste Valorization Technologies Market Outlook, By Research Institutes & Universities (2023-2034) (\$MN)

Table 37 Global Food Waste Valorization Technologies Market Outlook, By Government & Municipal Organizations (2023-2034) (\$MN)

Table 38 Global Food Waste Valorization Technologies Market Outlook, By Other End Users (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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