

# **Plastic Recycling and Advanced Recycling Technologies Market Forecasts to 2034 – Global Analysis By Plastic Type (PET (Polyethylene Terephthalate), HDPE (High-Density Polyethylene), LDPE (Low-Density Polyethylene), PP (Polypropylene), PVC (Polyvinyl Chloride) and Engineering Plastics), Recycling Technology, Circular Economy Model, End User and By Geography**

<https://marketpublishers.com/r/P6634F4B00FFEN.html>

Date: June 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: P6634F4B00FFEN

## **Abstracts**

According to Statistics MRC, the Global Plastic Recycling and Advanced Recycling Technologies Market is accounted for \$86.2 billion in 2026 and is expected to reach \$182.1 billion by 2034 growing at a CAGR of 9.8% during the forecast period. Plastic recycling and modern recycling innovations are reshaping waste management by improving the recovery and reuse of plastic materials. While mechanical recycling is common, it faces challenges like contamination and reduced material quality. Advanced techniques including chemical recycling, pyrolysis, and depolymerization convert plastics into their basic components, producing superior-quality materials. These approaches promote a circular economy by minimizing landfill accumulation and lowering reliance on new plastic production. Growing investments, supportive policies, and technological progress are driving wider implementation, positioning advanced recycling as an essential strategy to tackle global plastic waste issues in a sustainable manner.

According to OECD's Global Plastics Outlook (2022), data show that global plastic production reached approximately 8,300 million tonnes between 1950 and 2015, with only about 9% recycled, nearly 50% landfilled, and around 19% incinerated.

## **Market Dynamics:**

### **Driver:**

Increasing environmental concerns and plastic waste crisis

Growing concern over the environmental damage caused by plastic waste is significantly driving the plastic recycling and advanced recycling technologies market. Governments, businesses, and consumers are prioritizing efforts to minimize pollution in oceans and landfills. The persistent buildup of non-degradable plastics has created an urgent demand for sustainable waste solutions. Advanced recycling methods provide efficient ways to handle complex plastic materials, aligning with environmental objectives. Increased public awareness and international initiatives are pushing industries toward greener practices, leading to higher investments in recycling technologies and infrastructure across both developed and developing regions globally.

### **Restraint:**

High capital and operational costs

Elevated initial investment and running expenses pose a major challenge to the growth of the plastic recycling and advanced recycling technologies market. Setting up modern recycling plants demands significant financial resources for machinery, technology, and infrastructure. Ongoing costs, including energy usage, maintenance, and workforce requirements, add to the burden. These economic challenges hinder participation from smaller businesses and delay widespread implementation. Although the long-term advantages are promising, the upfront expenditure often discourages investment, especially in developing economies with limited funding support, thereby slowing the overall expansion of the market.

### **Opportunity:**

Technological innovation and process efficiency improvements

Ongoing technological progress is creating promising opportunities for the plastic recycling and advanced recycling technologies market. Innovations such as chemical recycling, AI-driven sorting systems, and enhanced processing techniques are boosting efficiency and product quality. These advancements allow for better handling of mixed

and contaminated plastic waste. Over time, improved technologies also help lower energy use and operational expenses. Increased research and development efforts are introducing scalable and cost-effective solutions. This continuous innovation is set to drive significant growth and strengthen the adoption of advanced recycling technologies across global markets.

#### Threat:

##### Supply chain disruptions and waste collection challenges

Weak waste management systems and supply chain interruptions pose a significant risk to the plastic recycling and advanced recycling technologies market. Irregular collection, poor sorting, and transportation issues limit the availability of recyclable plastic materials. Factors such as economic fluctuations, workforce shortages, and logistical constraints can further disrupt operations. These issues increase costs and reduce efficiency for recycling companies. A lack of consistent feedstock supply prevents advanced recycling facilities from functioning effectively, restricting their scalability and slowing the expansion of recycling technologies across various regions.

#### Covid-19 Impact:

The outbreak of COVID-19 had a notable effect on the plastic recycling and advanced recycling technologies market, causing interruptions in supply chains and slowing recycling operations. Movement restrictions and lockdowns resulted in workforce shortages, suspended waste collection, and delays in processing activities. The surge in single-use plastics, especially in healthcare and sanitation, increased pressure on waste systems. Lower crude oil prices made new plastics more affordable, decreasing the demand for recycled alternatives. Despite these challenges, the pandemic emphasized the need for robust waste management, encouraging greater investment in advanced recycling solutions for future sustainability.

The PET (polyethylene terephthalate) segment is expected to be the largest during the forecast period

The PET (polyethylene terephthalate) segment is expected to account for the largest market share during the forecast period, primarily due to its extensive application in packaging such as bottles and containers. Its ease of recycling, well-developed collection infrastructure, and rising demand for recycled PET products support its leading role. Manufacturers favor PET because it can be converted into high-grade

recycled materials for various uses. Supportive regulations and sustainability initiatives by companies have further boosted its recycling rates. Its suitability for both conventional and advanced recycling processes reinforces its dominance in the global market.

The healthcare & medical devices segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the healthcare & medical devices segment is predicted to witness the highest growth rate, driven by rising demand for eco-friendly medical materials and stricter waste management regulations. Large volumes of plastic waste from disposable medical products are pushing the adoption of advanced recycling methods. Increased awareness of environmental concerns and the importance of proper waste handling are fostering technological advancements in this area. Moreover, healthcare organizations are embracing circular economy practices to minimize waste, supporting strong growth and creating new opportunities for recycling technologies in this sector worldwide.

### **Region with largest share:**

During the forecast period, the Asia-Pacific region is expected to hold the largest market share, driven by fast-paced industrial growth, significant plastic usage, and ongoing improvements in waste management systems. Nations in this region are making substantial investments in recycling facilities to tackle environmental issues and increasing urban waste. A strong industrial presence and growing need for recycled materials across industries like packaging and construction support its dominance. Government initiatives encouraging recycling and circular economy practices further boost the market, while increasing awareness and collaboration enhance the region's global leadership.

### **Region with highest CAGR:**

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, supported by robust regulations, continuous technological innovation, and rising investments in eco-friendly waste solutions. The region is increasingly adopting advanced techniques like chemical recycling to process difficult plastic waste. Strong corporate focus on sustainability and circular practices is boosting the demand for recycled materials. Furthermore, supportive government policies and partnerships between industries and authorities are enhancing infrastructure and innovation, making

North America a rapidly expanding hub for advanced recycling technologies.

### **Key players in the market**

Some of the key players in Plastic Recycling and Advanced Recycling Technologies Market include Agilyx, Honeywell International, Chevron Phillips Chemical Company, Plastic Energy, Enerkem, Loop Industries, Carbios SA, Stena Metall, Pyrowave, Mura Technology Limited, Quantafuel ASA, Gr3n Recycling, BASF SE, LyondellBasell Industries N.V., Dow Inc., Eastman Chemical Company, PureCycle Technologies, Inc. and Brightmark.

### **Key Developments:**

In December 2025, Honeywell International Inc. has been awarded a \$58.79 million contract modification from the U.S. Department of War for work related to the automotive gas turbine 1500 engine platform. The modification, identified as P00026 to contract W56HZV-20-D-0062, is for program services and systems technical support engineering services. This latest award increases the total cumulative value of the contract to \$2.69 billion.

In October 2025, BASF SE and ANDRITZ Group have signed a license agreement for the use of BASF's proprietary gas treatment technology, OASE® blue, in a carbon capture project planned to be implemented in the city of Aarhus, Denmark. The project aims to capture approximately 435,000 tons of CO<sub>2</sub> annually from the flue gases of a waste-to-energy plant for sequestration; the city of Aarhus has set itself the goal of becoming CO<sub>2</sub>-neutral by 2030.

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.

### **Plastic Types Covered:**

PET (Polyethylene Terephthalate)

HDPE (High-Density Polyethylene)

LDPE (Low-Density Polyethylene)

PP (Polypropylene)

PVC (Polyvinyl Chloride)

Engineering Plastics

#### Recycling Technologies Covered:

Mechanical Recycling

Advanced Recycling

AI-enabled Sorting & Robotics

#### Circular Economy Models Covered:

Closed-loop Recycling

Open-loop Recycling

Upcycling & Value-added Reuse

#### End Users Covered:

Packaging

Automotive

Construction

Electronics & Electricals

Textiles & Apparel

Healthcare & Medical Devices

## 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

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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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