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Plastic Mechanical & Chemical Recycling Market Forecasts to 2032 – Global Analysis By Type (Mechanical Recycling and Chemical Recycling), Source, Process Technology, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Plastic Mechanical & Chemical Recycling Market is accounted for $64.7 billion in 2025 and is expected to reach $113.2 billion by 2032 growing at a CAGR of 8.3% during the forecast period. Plastic mechanical and chemical recycling are two complementary methods used to recover and repurpose plastic waste. Mechanical recycling involves sorting, cleaning, shredding, and reprocessing plastics into new products without altering their chemical structure. It is most effective for single-polymer plastics like PET and HDPE. Chemical recycling, on the other hand, breaks down complex or contaminated plastics into their basic chemical components through processes like pyrolysis, gasification, or depolymerization. These components can then be reused to produce virgin-quality plastics. Together, these methods support circular economy goals by reducing landfill waste, conserving resources, and minimizing environmental impact from plastic pollution.

Market Dynamics:

Driver:

Environmental Regulations & Policies

Stringent environmental regulations and global sustainability mandates are driving the growth of plastic recycling. Policies like Extended Producer Responsibility (EPR), bans on single-use plastics, and landfill restrictions are compelling industries to adopt

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mechanical and chemical recycling solutions. Governments and international bodies are promoting circular economy models, encouraging investment in recycling infrastructure. These regulations not only reduce plastic pollution but also create economic incentives for companies to innovate and comply, making regulatory pressure a powerful catalyst for market expansion.

Restraint:

Complexity of Composite Materials

The recycling of composite materials presents a significant challenge for the market. Plastics combined with other materials—such as metal foils, adhesives, or multilayer films—are difficult to separate and process using conventional recycling methods. Mechanical recycling struggles with contamination, while chemical recycling requires advanced technologies and high energy input. These complexities limit the recyclability of many consumer and industrial products, slowing adoption rates and increasing operational costs, thereby restraining the overall growth of the recycling market.

Opportunity:

Technological Advancements

Technological innovations are unlocking new possibilities in plastic recycling. Breakthroughs in chemical recycling—such as depolymerization, enzymatic processes, and solvent-based purification—enable the treatment of previously unrecyclable plastics. Automation, AI-driven sorting systems, and advanced pelletizing techniques are improving efficiency and scalability. These advancements allow for higher recovery rates, better material quality, and reduced environmental impact. As companies invest in R&D and pilot projects, technology becomes a key opportunity to expand market reach and meet global sustainability goals.

Threat:

Economic Challenges

Economic instability poses a threat to the plastic recycling market. Global recessions, inflation, and geopolitical tensions can disrupt supply chains, reduce investment in recycling infrastructure, and slow regulatory enforcement. High operational costs, especially for chemical recycling, may deter adoption during financial downturns.

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Additionally, fluctuating oil prices can make virgin plastic cheaper than recycled alternatives, undermining market competitiveness. These economic pressures can stall progress, making financial resilience and policy support critical for sustained market growth.

Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the plastic recycling market. On one hand, increased use of single-use plastics in medical and packaging sectors led to higher plastic waste generation. On the other hand, lockdowns and economic disruptions slowed recycling operations, reduced workforce availability, and delayed infrastructure projects. Supply chain interruptions and shifting policy priorities temporarily hindered market momentum. However, the pandemic also highlighted the need for resilient waste management systems, prompting renewed focus on recycling innovation post-crisis.

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

The pelletizing segment is expected to account for the largest market share during the forecast period due to its efficiency, scalability, and versatility. Pelletizing transforms plastic waste into uniform pellets, which are easily reused in manufacturing processes across industries like packaging, automotive, and consumer goods. Its compatibility with various polymer types and ability to produce high-quality recycled material make it a preferred method. Growing demand for sustainable raw materials and advancements in pelletizing technology further reinforce its market leadership.

The polyvinyl chloride (PVC) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the polyvinyl chloride (PVC) segment is predicted to witness the highest growth rate due to its widespread use and increasing recyclability. Found in construction, healthcare, and packaging applications, PVC has historically posed recycling challenges. However, recent innovations in chemical recycling—such as depolymerization and solvent-based purification—have improved its recovery and reuse potential. Rising environmental awareness, regulatory pressure, and demand for sustainable materials are driving industries to invest in PVC recycling, making it one of the fastest-growing segments in the market.

Region with largest share:

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During the forecast period, the Asia Pacific region is expected to hold the largest market share owing to rapid industrialization, urbanization, and high plastic consumption in countries like China, India, and Japan contribute to substantial waste generation. Government initiatives promoting circular economy practices and investments in recycling infrastructure are accelerating growth. The region's strong manufacturing base, presence of key recycling companies, and favorable policy frameworks position Asia Pacific as a central hub for plastic recycling innovation and capacity.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR because region benefits from stringent environmental regulations, corporate sustainability commitments, and advanced recycling technologies. Increasing consumer demand for eco-friendly products and public-private partnerships are driving investment in mechanical and chemical recycling infrastructure. Innovations in sorting, processing, and chemical conversion methods are enhancing efficiency and scalability, positioning North America as a leader in sustainable plastic waste management and recycling growth.

Key players in the market

Some of the key players in Plastic Mechanical & Chemical Recycling Market include Veolia Environnement S.A., Econic Technologies, SUEZ SA, Mura Technology, Waste Management, Inc., PureCycle Technologies, Republic Services, Inc., Loop Industries, REMONDIS SE & Co. KG, Biffa, Indorama Ventures Public Company Limited, The Shakti Plastic Industries, ALPLA Group, KW Plastics and Paprec Group.

Key Developments:

In July 2025, Veolia and AFD have inked a three-year strategic partnership to bring Veolia's technical strength together with AFD's local presence, targeting water, waste, energy sectors in developing regions (Latin America, Africa, Balkans, Middle East) to drive ecological transformation.

In February 2025, Veolia and ADNOC signed a memorandum of understanding during the UAE-France High-Level Business Council meeting. This strategic partnership aims to optimize water consumption and reduce carbon footprints across ADNOC's industrial operations. Leveraging Veolia's global expertise, the collaboration focuses on

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evaluating water management strategies, conducting comprehensive water cycle assessments, and enhancing flow monitoring systems.

Types Covered:

- Mechanical Recycling
- Chemical Recycling

Sources Covered:

- Polyethylene Terephthalate (PET)
- Polyvinyl Chloride (PVC)
- High-Density Polyethylene (HDPE)
- Polystyrene (PS)
- Polypropylene (PP)
- Low-Density Polyethylene (LDPE)

Process Technologies Covered:

- Extrusion
- Pelletizing
- Solvent-Based Recycling

End Users Covered:

- Packaging
- Construction

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- Automotive
- Electronics & Electrical
- Textiles
- Consumer Goods
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan

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China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants

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- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- 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 Middle East & Africa Regions are also represented in the same manner as above.

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