

Unpacking Circular Value Chains: Reuse & Recycling in Plastic Packaging

Circular strategies such as reuse and recycling in the plastic packaging industry rely on distinct value chains that work together to reduce waste and close the loop.



RECYCLING VALUE CHAIN



1. Collection

Collection points and waste management systems for plastic packaging (e.g., PET bottles, food containers).

Fact: "Globally, only 9% of all plastic waste ever produced has been recycled, highlighting the need for improved collection systems."



2. Sorting

Separation of plastic materials by type (e.g., PET, HDPE) at sorting facilities.

Fact: Advanced sorting technologies can increase plastic recovery rates by up to 90%.



3. Processing

Cleaning, shredding, and transforming plastics into new raw materials (e.g., recycled plastic pellets).

Fact: Producing recycled plastic uses 88% less energy than producing virgin plastic.



4. Manufacturing

Production of new items using recycled plastic (e.g., packaging, textiles).

Example: Bottles made with rPET (recycled PET) can reduce carbon emissions by up to 79% compared to virgin plastic bottles.

REUSE VALUE CHAIN



1. Reusable Packaging Production

Manufacturing durable plastic packaging designed for multiple uses (e.g., refillable bottles, containers).

Fact: "Reusable plastic containers can replace hundreds of single-use alternatives during their lifecycle."



2. Distribution

Implementing logistics systems for returning and refilling reusable plastic packaging.

Fact: Reverse logistics systems for reusable packaging can reduce transportation-related emissions by up to 25%.



3. Reuse Cycle

Cleaning and refilling the plastic packaging for repeated use.

Fact: Refilling a reusable plastic bottle 10 times saves up to 50% of the resources needed to produce 10 single-use bottles.

Synergies Between Recycling and Reuse

Combining reuse and recycling strategies can double the waste reduction impact compared to using only one strategy.

Recycling and reuse are complementary strategies that extend the life of plastic resources and reduce overall plastic waste.

Reusing a plastic container just 10 times can reduce carbon emissions by up to 60%.

1 ton of recycled plastic saves 5,774 kWh of energy—enough to power an average home for six months.



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