



# THE PLASTICS RECYCLING CHAIN

Plastics recycling = recovering used plastic products and packaging at the end of their useful life and reprocessing the material for use in new products and packaging.

Recycling plastics to make new products - rather than using fossil resources - conserves natural resources, saves energy, reduces greenhouse gas emissions, contributes to the economy and creates jobs. And it helps keep plastic waste out of the environment.

Plastics recycling is key to creating a circular economy for plastics, in which plastics are sustainably produced, designed, used, reused and recycled instead of discarded.



**Learn how** creating a circular economy for plastics helps achieve UN Sustainable Development Goals.

Plastics recycling is at various stages of development in different parts of the world. We can dramatically increase recycling by creating the right enabling conditions in a global agreement on plastic pollution.



**Learn about** our ambition for a global agreement for a sustainable, circular economy.



## The Players in the Plastics Recycling Chain

To recycle plastics, an interwoven chain of players must work in concert. The plastic recycling chain can be viewed as a virtuous circle in which each player in turn enables another player. This infographic depicts that circle.

In reality, there is no start or finish to the plastics recycling chain, just as there is no start or finish to a circle.



**These three players must collaborate to design products and packaging that are reusable and recyclable.**

## Let's follow the players and their role in creating a circular economy for plastics...

### CONSUMERS



People who buy products

#### Role: Enable Collectors by recovering plastic products/packaging

While we could start anywhere in this circle, let's start with the demand. People (and companies) all over the world buy shoes, packaged food, autos, toys, clothing and so on, which typically are made with plastic materials.

#### Learn how and where plastics are made and used.

While today most of these items are discarded, successful recycling requires all of us to recover them (and to choose products made with recycled plastics). Behavioral change through incentivizing people that leads to broad participation in waste collection programs is **essential to create a circular economy**.

## Approximately 3 billion people

lack access to basic waste management. Creating universal access to collection and environmentally sound waste management is the first step toward circularity. Eliminating plastic pollution is not realistic until we close this gap and create a circular economy in which used plastics are no longer perceived as waste.



### COLLECTORS



Companies and people who collect plastics for recycling

#### Role: Enable Sorters by collecting plastic products/packaging

After consumers deposit plastics into recycling bins, collectors pick up and consolidate the materials. This responsibility varies widely across the world. Some collectors are government entities, others are private industry paid by fees, and still others are individuals who collect materials informally, outside typical regulated entities (sometimes known as the informal sector or waste pickers). Regardless, wider collection of plastics is **essential to create a circular economy**.

### SORTERS



Companies and people who divvy up plastics for reprocessing

#### Role: Enable Re-processors by sorting plastics

There are many types of plastics, and it's often necessary to sort them before re-processing. While some collectors also are sorters, there are multiple entities that play this role. Innovative technologies and systems are also needed (and are under advanced development) to sort plastics more efficiently and effectively, which is **essential to create a circular economy**.

## RE-PROCESSORS



Companies that mechanically or chemically re-process plastics

### Role: Enable Plastic Material Makers and Converters by creating recycled content feedstocks

Re-processors, or often called recyclers, convert plastics into materials that are used to make new plastic products and packaging.

Mechanical re-processors use heat and pressure to essentially melt plastics and then return them to their original solid form (typically small pellets). Chemical re-processors convert plastics into their liquid/gas building blocks. Plastic material makers then convert these liquids/gases into solid form plastics (again, typically pellets). At this point, these mechanically or chemically re-processed materials are called “recycled plastics”. These materials then are sold to companies (typically called “converters”) that make plastic products and packaging.

Both mechanical and chemical re-processing help displace the need for fossil resources for making plastics and keep these used plastics out of our environment – key environmental benefits of recycling plastics. A significant increase in recycled feedstocks for plastics is **essential to create a circular economy**.



## PLASTIC MATERIAL MAKERS



Companies that make the materials for plastic products and packaging

### Role: Enable Converters by creating recycled plastic materials

In the plastic recycling chain, plastic material makers use the materials from re-processors to create the materials used by the “converters” that make plastic products or packaging. Materials companies often purchase mechanically recycled plastics and blend them with virgin plastics before sale. And/or they purchase the “feedstocks” from chemical re-processors to make new plastics. Significantly increased recycled content plastic materials are **essential to create a circular economy**.

FYI: Some companies play more than one role in the plastics recycling chain. For example, some plastic material makers also re-process used plastics to make new plastic materials.



## CONVERTERS



Companies that use plastic materials to make products and packaging

**Role: Enable Product Companies & Retailers by making products & packaging from recycled plastics**

This large and diverse business sector uses plastic materials to make everything from auto parts to building insulation to food packaging. A growing number of these companies want to use as much recycled plastic materials as possible. This helps their customers – Product Companies & Retailers – meet their sustainability goals, such as using more recycled content, which is **essential to create a circular economy**.

## PRODUCT COMPANIES & RETAILERS



Companies that sell plastic products and packaging to Consumers

**Role: Enable Consumers by designing for recycling**

Products and packaging made with plastics typically are valued for being lightweight, efficient and economical. This helps reduce energy use, waste, and greenhouse gas emissions from products and packaging compared to many available alternative materials – which is a central reason companies choose plastics. But these products/packaging can be difficult to recycle and often are excluded from recycling/collection programs. Collaboration between Product Companies & Retailers and Plastic Material Makers and Converters is necessary to design products that are accepted in Consumer's collection programs, which is **essential to create a circular economy**.

And we're back to Consumers again in a circular loop. **A loop that never begins and never ends.** As long as all players do their part.

**Learn how** a global agreement on plastic pollution can contribute to a circular economy for plastics.

