3

From waste to resource
The life cycle of plastic products

In order to understand the life cycle of plastic products it is important to understand that not all plastic products are the same and not all have the same service life. Some are a product in itself (i.e. a bottle) and some are parts of an end-user product (i.e. parts of a car or electronic devices, insulation for a building, etc.). At the end of their life, the end-user products become waste which is collected and treated.
Life service of plastic products
The service life of plastic products goes from less than 1 year to 50 years or more.

Plastics become waste at the end of their service life.

Some plastic products have a lifespan of less than one year, some others of more than 15 years and some have a service life of 50 years or more. Thus, from production to waste, different plastic products show different uses within individual value chains. Therefore, the amount of collected plastic waste does not necessarily correlate with the plastics demand of the same year.

**SOURCE:** Conversio Market & Strategy GmbH

* Littering and unauthorised dumping
Since 2006, the amount of plastic waste sent to recycling has doubled. However, 25% of plastic post-consumer waste was still sent to landfill in 2018.

**2006-2018 evolution** of plastic post-consumer waste treatment (EU28+NO/CH)

- **Recycling**: 100%
- **Energy recovery**: +77%
- **Landfill**: -44%

**Collected plastic post-consumer waste**

- **2006**: 24.5 M t
- **2018**: 29.1 M t

**CAGR**: Compound Annual Growth Rate is the mean annual growth rate over a specific period of time.

**SOURCE**: Conversio Market & Strategy GmbH
In 2018, 29.1 million tonnes of plastic waste were collected in the EU28+NO/CH in order to be treated. Plastic waste exports outside the EU have decreased by 39% from 2016 to 2018.

SOURCE: Conversio Market & Strategy GmbH
Countries with landfill restriction implemented:

- Energy recovery
- Recycling

- Switzerland
- Austria
- Netherlands
- Germany
- Luxembourg
- Sweden
- Finland
- Belgium
- Denmark
- Norway
- Estonia
- Ireland
- UK
- Slovenia
- France
- Italy
- Portugal
- Spain
- Lithuania
- Czechia
- Poland
- Slovak Republic
- Hungary
- Romania
- Latvia
- Croatia
- Bulgaria
- Cyprus
- Greece
- Malta

20%, 40%, 60%, 80%, 100%
Countries with landfill restrictions of recyclable and recoverable waste have, on average, higher recycling rates of plastic post-consumer waste.

Zero landfilling is needed to achieve the circular economy of plastics.

Plastic post-consumer waste rates of recycling, energy recovery and landfill per country in 2018

SOURCE: Conversio Market & Strategy GmbH
Since 2006, the quantity of plastic post-consumer packaging waste sent to recycling has increased by 92%.

2018 data show a positive trend for recycling, however more than 18% of the waste is still sent to landfill.

*From household, industrial and commercial packaging

**CAGR: Compound Annual Growth Rate is the mean annual growth rate over a specific period of time
Plastic PACKAGING* waste treatment in 2018 (EU28+NO/CH)

Recycling is the first option for plastic packaging waste

In 2018, 17.8 million tonnes of plastic post-consumer packaging waste were collected in order to be treated.

*From household, industrial and commercial packaging

**Source:** Conversio Market & Strategy GmbH
More than half of the countries have plastic packaging recycling rates above 40%.

In 2018, 17 countries had recycling rates higher than 40% and 3 countries higher than 50%.

SOURCE: Conversio Market & Strategy GmbH
Plastic packaging recycling

The new Directive (EU) 2018/852 on Packaging and Packaging Waste sets higher recycling targets per material (50% for plastic packaging by 2025 and 55% by 2030), together with a new calculation method of recycling performances. This new method will start to be applicable for data of the year 2020.

Recycling rates of plastic packaging waste in Europe range between 26% and 52%. This wide range can be explained by differences in collection schemes, available infrastructure and consumer behaviour. On average, the 42% recycling of plastic packaging represents an increase of 1.2 points versus 2016, in particular thanks to improved waste collection.

Plastic PACKAGING* recycling rate** per country in 2018

EU 28+2 packaging recycling rate: 42%

* From household, industrial and commercial packaging
** According to the current calculation methods established in Directive 94/62/EC

SOURCE: Conversio Market & Strategy GmbH