



The Belgian plastics industry and the circular economy

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HOW FAR HAVE WE COME?

.AGORIA



essencia



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Discover in this brochure the results of a study carried out by Conversio Market & Strategy GmbH, at the request of the sectoral federations **Agoria** and **essenscia** and with the support of **PlasticsEurope**. In the current context and given the environmental challenges related to the use of plastics, it seemed pertinent to gather figures, for the first time, on the amount of recycled material reused in the manufacture of new plastic products in Belgium.

The figures in this study result from extrapolations and are therefore estimates. During the production process, production waste is immediately reintegrated into the production process and so is not considered in this report. **The study focuses on the main challenge facing society today, post-consumer waste.**



Since the 1950's, the diversity of plastics and their number of applications has constantly increased. With a variety of physical properties such as the capability to act as a barrier to certain gases, corrosion resistance, antiseptic properties, **plastic materials are an integral part of modern life.** Because of their light weight and resistance they are important to help address environmental challenges. Plastic packaging helps prolong the shelf-life of food products and avoids food waste. Plastics improve our quality of life when used in electronic goods and furniture. In the automotive industry, lightweight parts help reduce fuel consumption. In construction, plastics are used in window profiles, water storage systems and insulation materials. Plastic materials are also essential in the medical sector.

But...

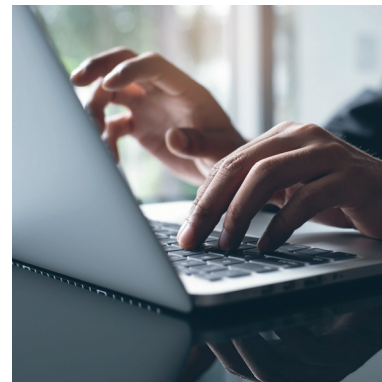
Nevertheless, there is an urgent need to **promote the circularity of plastic** so that these materials, so essential to our quality of life, are used in the most optimal way, **without harming the environment**. This brochure will help you to better understand where the Belgian plastics sector stands in terms of circularity and how circularity can be increased.

Saskia Walreadt, director essenscia PolyMatters
Julie Leroy, Business Group Leader plastic sector at Agoria

NB PlasticsEurope presents the results at European level in their publication CIRCULAR ECONOMY OF PLASTICS.

We thank all the companies and associations that agreed to take part in the interviews.

Plastic
products
are
essential
to our
quality
of life







01

What should you know about the plastics sector in Belgium?

The plastics sector is a major player in the Belgian manufacturing industry.

Plastics production and converting makes a significant contribution to the prosperity of the Belgian economy. It ranks high at European level too:





2018
30,113 jobs
of which 72%
in plastics converting



2018
14.2
billion EUR in
turnover



2017
Value added
3.8
billion EUR, 1% of GDP



2018
Investments
630
million EUR



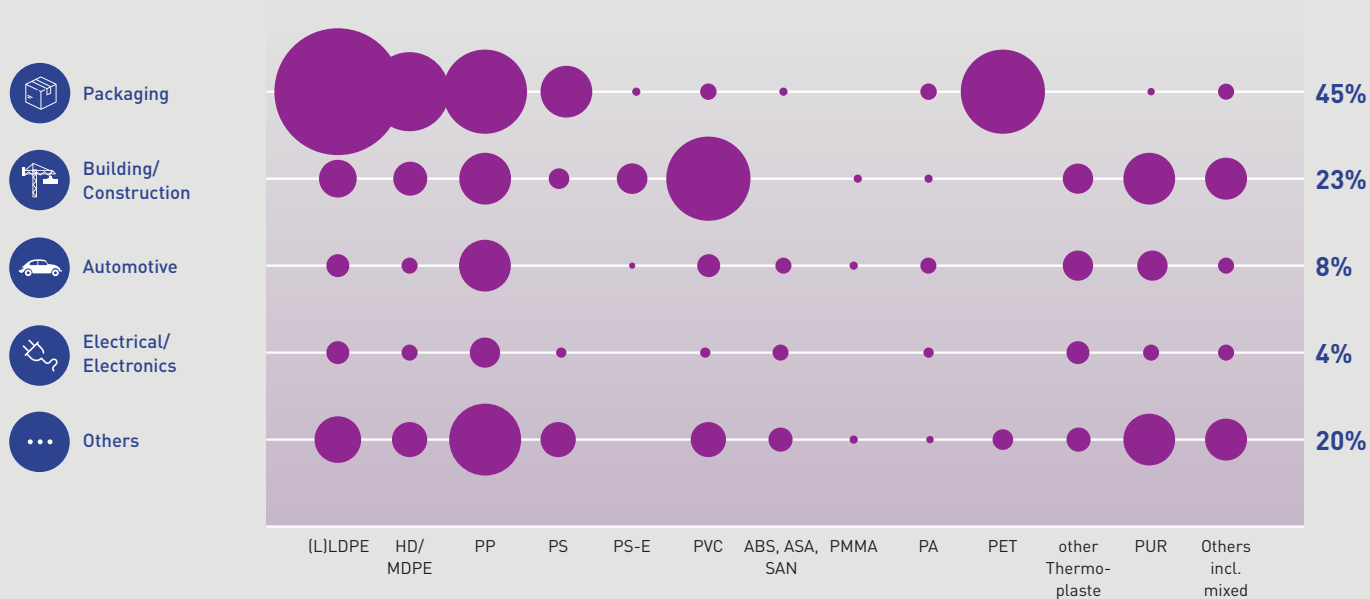
2018
Productivity
118,000€
per worker*

*industry average: 112,000€

SOURCES

VAT declarations; SBS; Eurostat

Belgian demand of plastic converting industry by type of plastic and by application



There isn't just “one” plastic

Comparing two types of plastic is like comparing steel with glass; they have different properties and need to be recycled differently.

Although there are many types of plastics, the six main ones are: (L)LDPE, HDPE, PP, PS, PVC and PET. They are **mainly used in packaging, construction and the automotive industry.**



02

The plastics sector and the circular economy in Belgium

Did you know that in Belgium :



more than
50%

of plastic products or parts
have a **life-span of 2 to 50 years**



more than
200,000 tonnes

of consumer plastic waste was **sent
for recycling** in 2018.



in 2018
64%

of plastic waste from **selective collection**
(blue bags, container parks, electronic
waste...) was sent for recycling,
compared to only 7% of plastic waste
from mixed waste collection

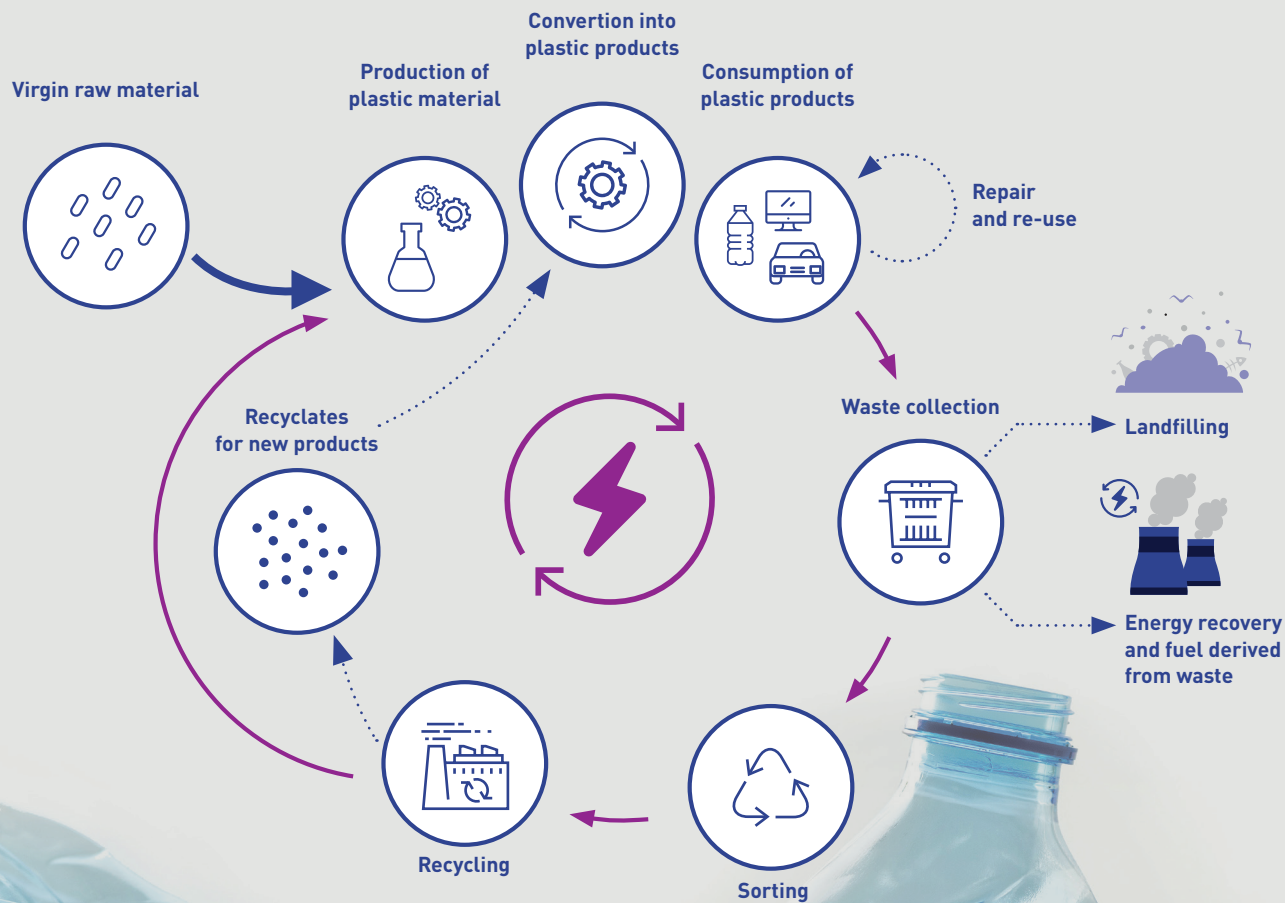




The plastic loop

The plastics industry works on a circular economy system, which aims to promote the reuse of plastics in order to optimise the use of resources.

In this system, **recyclates are valuable raw materials**. The use of this new resource should be optimized in the manufacture of new plastic products.



What proportion of Belgian plastic waste is recycled

Belgium is a major exporter of plastic raw materials and plastic products. **Approximately 2/3 of plastic raw materials produced in Belgium are exported**, mainly to neighbouring countries. The consumption of plastic products in Belgium represents 47% of the volume of plastic products manufactured in Belgium.*

* taking into account both imported and exported finished products.



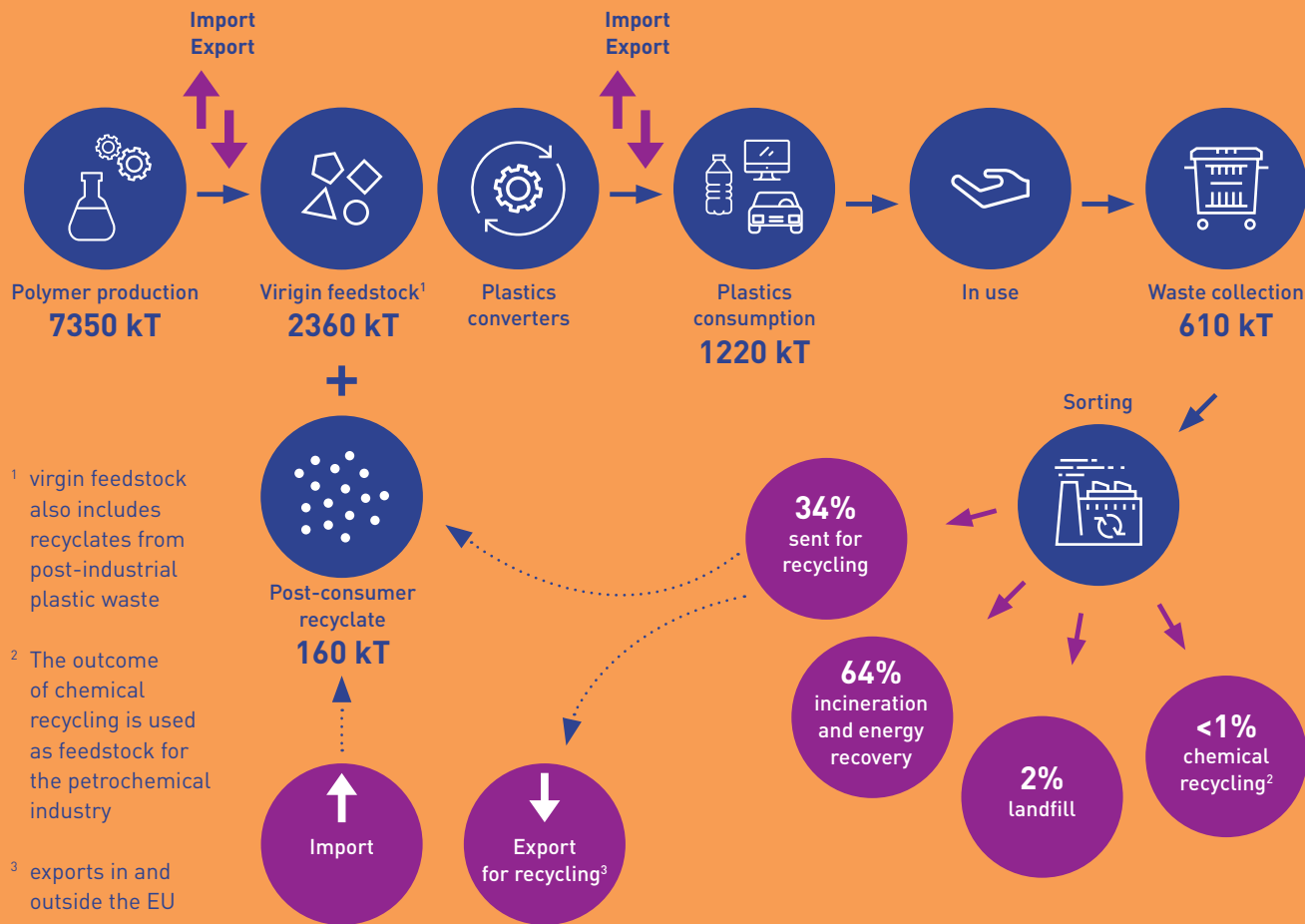
160 kT

In 2018, 160 ktonnes of post-consumer plastic waste was reinjected into the manufacture of new plastic products.



Twice as high

In Belgium, in 2018, consumption of plastic products was twice as high as the amount of plastic waste generated. This means that **a large proportion of plastic products that are put on the market are destined to remain in service for several years, taking as long to become waste.**





How much consumer waste is plastic?

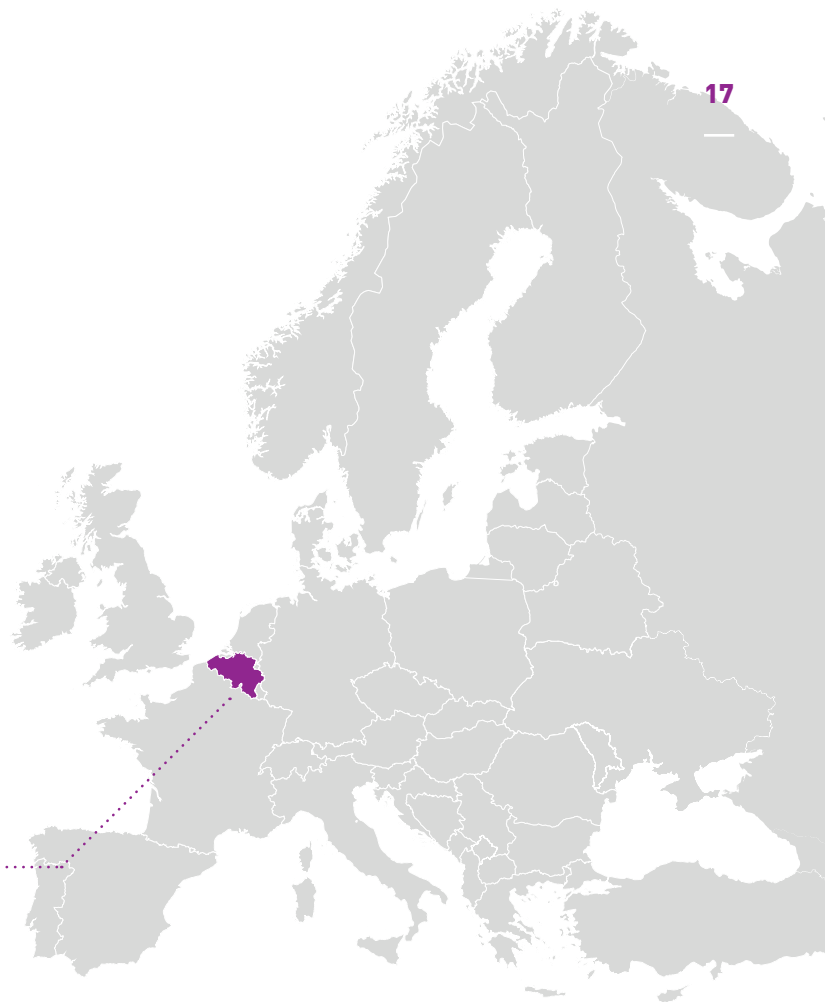
Post-consumer waste comes from products that have reached the end of their life cycle, from trade, industry (e.g. construction) and households.

In Belgium, plastic waste represents 2% (in quantity) of all post-consumer waste, each year.



In Belgium,
38000 kT
of post-consumer waste is
collected, in total

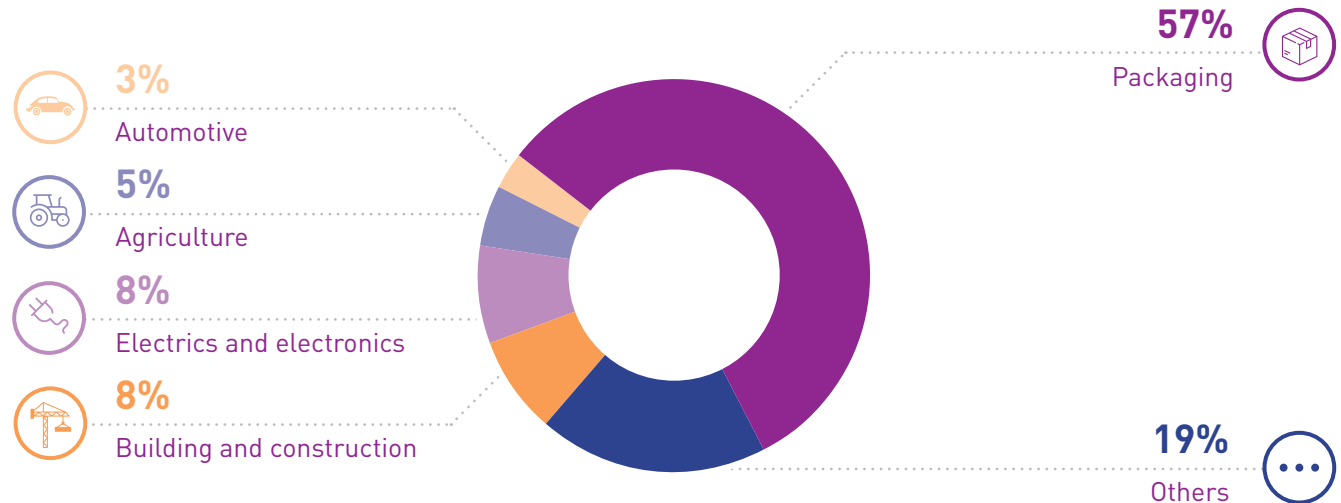
The fraction of plastic in
post-consumer waste is
610 kT in total.



Where does our plastic waste come from?

The 610 ktonnes of plastic waste produced in 2018 come mainly from the packaging and construction sectors.

Origin of the 610 kT of plastic waste



Share of plastic waste sent to recycling, by sector



43%
Packaging



29%
Building and construction



28%
Electrics and electronics



43%
Agriculture



29%
Automotive

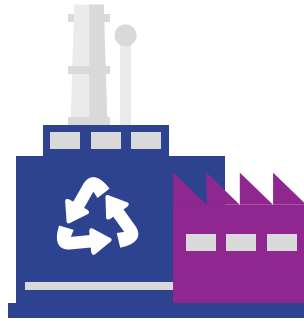
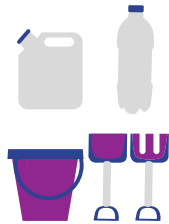


23%
Others



What happens to our waste?

Post-consumer plastic waste
610 kT



Energy recovery
390 kT



Recycling
210 kT



Landfill
10 kT



Mechanical recycling
> 99%

Chemical recycling
<1%

2018
34%



In 2018, 34% of post-consumer plastic waste was sent for recycling*.

*European average 32%

Plastics are too valuable raw materials to be incinerated... Research is underway to develop new separation technologies for multi-layer films for example and new recycling processes such as chemical recycling, an R&D activity which opens up new ways to make the use of plastics even more circular.

More intense selective collection of plastic waste, such as extending the use of the PMD blue bag to include all plastic packaging, would help to further increase the proportion of plastic waste available for recycling.



More
and more
plastic waste
is sent
to recycling.



The evolution of plastic waste treatment

In Belgium, landfilling has been significantly limited, legally and now accounts for only 2% of plastic waste treatment.

This is in sharp contrast to the average European numbers, which show that 25% of waste is still sent to landfill.



We welcome this decision by Belgium. Clearly, it is very important to limit the landfill of plastics in order to avoid pollution and to increase recycling potential.



Landfill



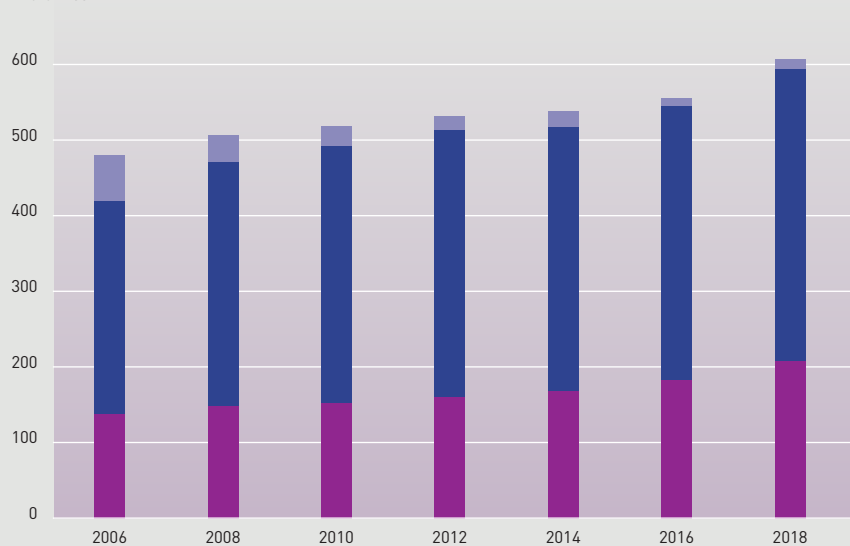
Incineration/
energy recovery

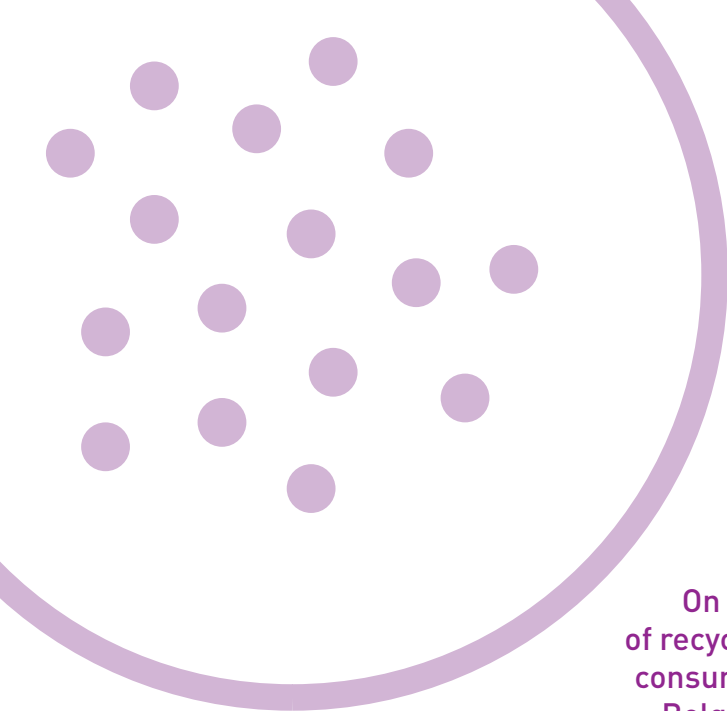


Recycling

Evolution of plastic waste treatment

kilotonnes





6%

On average, the use of recyclates from post-consumer waste by the Belgian converters is estimated at 6% of the total amount of plastic raw materials they consume.

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03

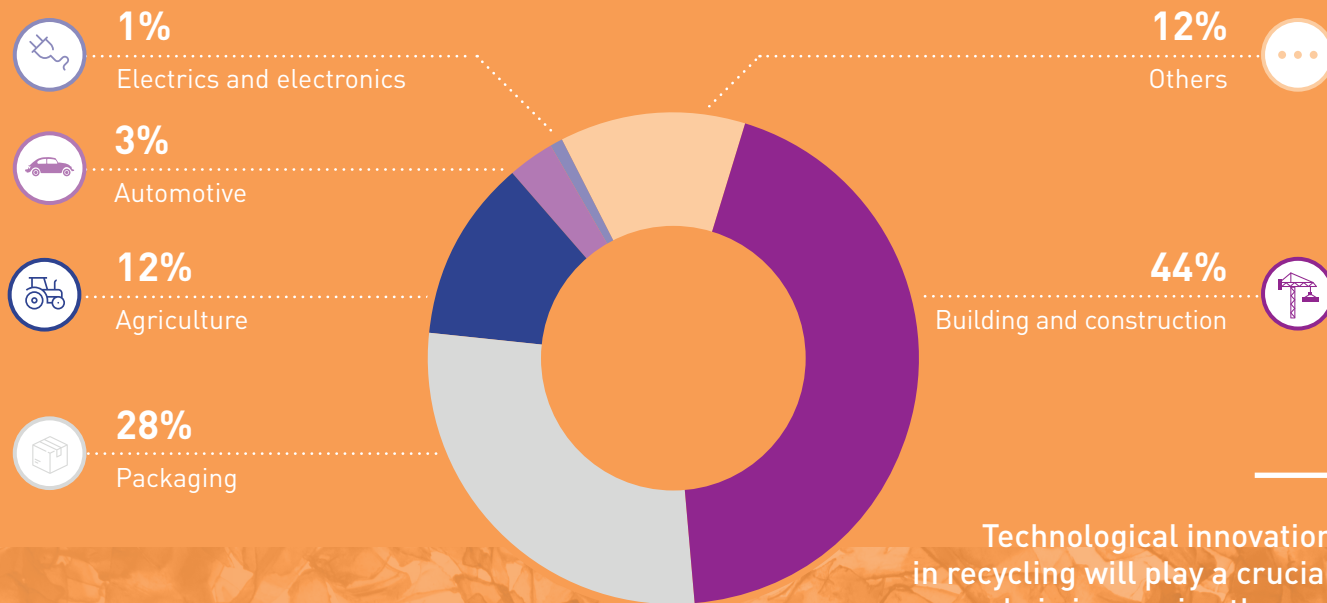
Recyclates re-entering the value chain

What happens to recyclates?

Recycled materials can be found in almost all sectors, but predominantly in the **packaging and construction** sectors.

The quality and available quantity of recyclates are essential criteria that limit their use in certain applications. Normative requirements also exclude the use of recyclates in certain cases (food packaging, technical automotive parts...)

In which sectors are the 160 kT plastic recyclates used in Belgium?



Technological innovation in recycling will play a crucial role in increasing the use of recyclates in a growing number of applications.



04

“The future is circular”

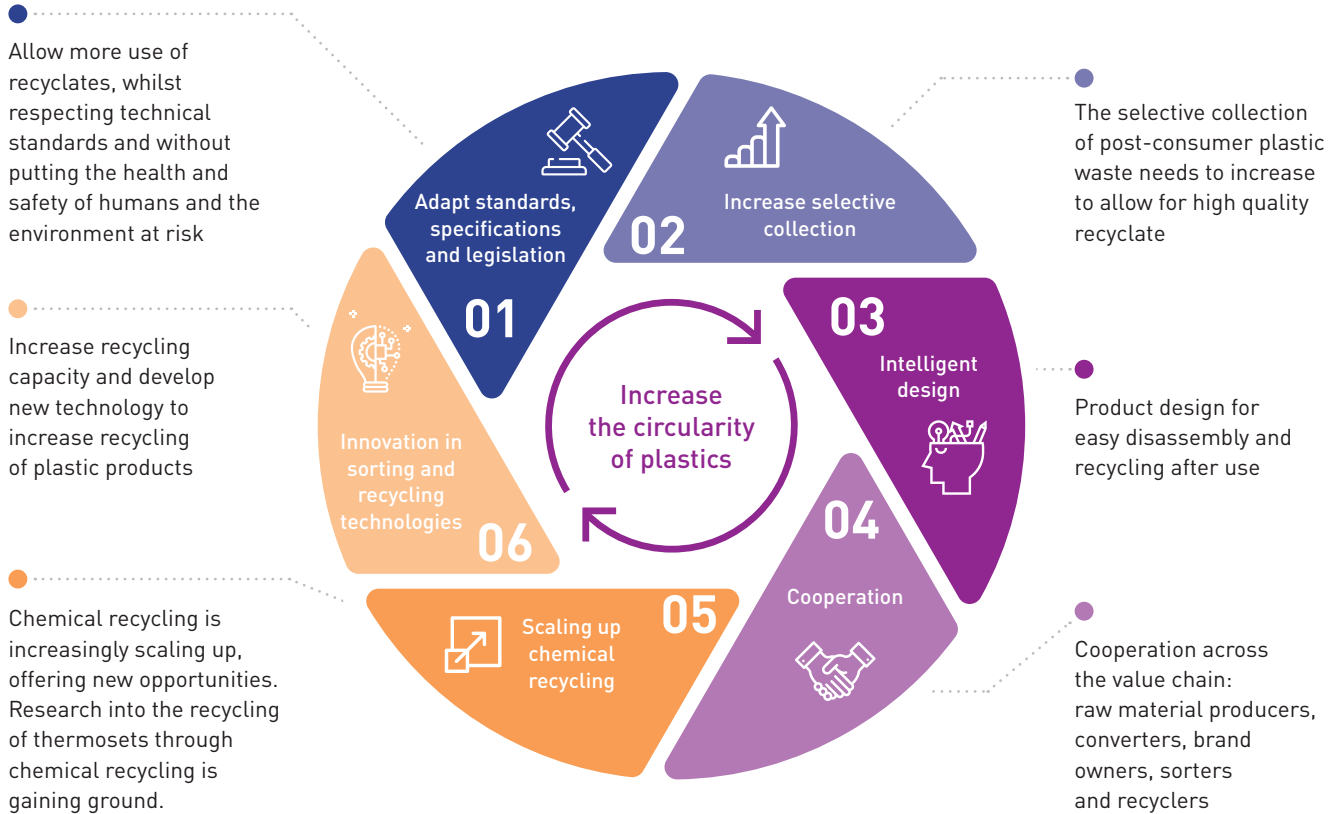
How can we increase the circularity of plastics?

The study shows that plastics converters are already making progress in their **transition towards a circular plastics industry**.

Nevertheless, it notes that the sector faces a major challenge, which is to increase the recycling rate and drastically reduce the incineration of plastic waste.

This requires commitment from all players within the industry value chain, as well as from consumers.

Several ways to address this challenge are set out below:





Agoria and essenscia are committed to guiding members through this transition

That's why Agoria has submitted
a voluntary pledge to the European
Commission and essenscia has joined
the Circular Plastics Alliance.

Methodology

- The document « The Belgian plastics industry in a circular economy » gives a detailed overview of the plastics flows in Belgium for the reference year 2018. It provides information on the production of plastic raw materials and their transformation into parts and plastic products as well as on the collection and treatment of plastic waste, including recycling and the use of recycled materials.
 - To learn more about the plastics value chain, 45 in-depth interviews were conducted with producers, processors, waste management companies, sorting facilities and plastic recyclers.
 - The study ran from December 2018 to September 2019. All figures in the survey have been rounded. The report is limited in that it does not include waste that has not been formally collected or that has been stored or disposed of.
 - The analysis includes a detailed review of recycled materials by origin (packaging, building and construction, electronics etc.), by type of polymers (PE, PP, PET) and by application area of recyclates. Thanks to import and export data throughout the value chain, a detailed picture of plastics in a circular economy model has emerged.
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- Official data and statistics on packaging waste, ELV's (end-of-life vehicles) and WEEE (waste, electrical and electronic products) from associations, work groups, private entities, environmental agencies and European NGO's have been used. Post-consumer waste is subdivided into waste streams from private households, municipal waste collected by commercial activities and post-consumer waste collected by economic activities such as packaging, construction and agriculture etc.

- Primary research includes data collection, including conducting interviews with stakeholders throughout the plastics value chain, e.g. processors, recyclers, waste management companies and EPR (extended producer responsibility) systems. Additional analyses on the life time were done for selected applications and product groups in order to align and cross-reference plastics data.
- Conversio Market & Strategy GmbH evaluated statistical data and analysis of waste streams from sectoral organisations and stakeholders in the Belgian recycling sector.
- The multimethodological approach makes it possible to optimise access to accurate data.



Types of polymers

(L)LDPE	(linear) Low Density Polyethylene
HD/MDPE	high density/ medium density Polyethylene
PP	Polypropylene
PS	Polystyrene
PS-E	Expanded polystyrene
PVC¹⁾	Polyvinyl chloride
ABS, ASA, SAN	Acrylnitril-Butadien-Styrene, Acrylester-Styrene-Acrylnitril, Styrene-Acrylnitril

PMMA	Polymethylmethacrylate
PA	Polyamide
PET	Polyethylene Terephthalate
Other thermoplastic	e.g. POM, PC, PBT (Polyoxymethylene, Polycarbonate, Polybutylene terephthalate), mixed
PUR	Polyurethane
Others	For example: thermoset plastic



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