

Annual press conference, 21 January 2025



Umwelt
Bundesamt

Agenda





- ◆ The packaging waste cycle: from private final consumption to recycling
- New data, positive trends and remaining challenges in packaging recycling
- Sorting and recovery in practice: how properly disposed packaging ends up in high-quality recycling
- Clean and correct waste separation: a key to effective circularity
- What it takes for effective recycling loops in light of the European Packaging and Packaging Waste Regulation

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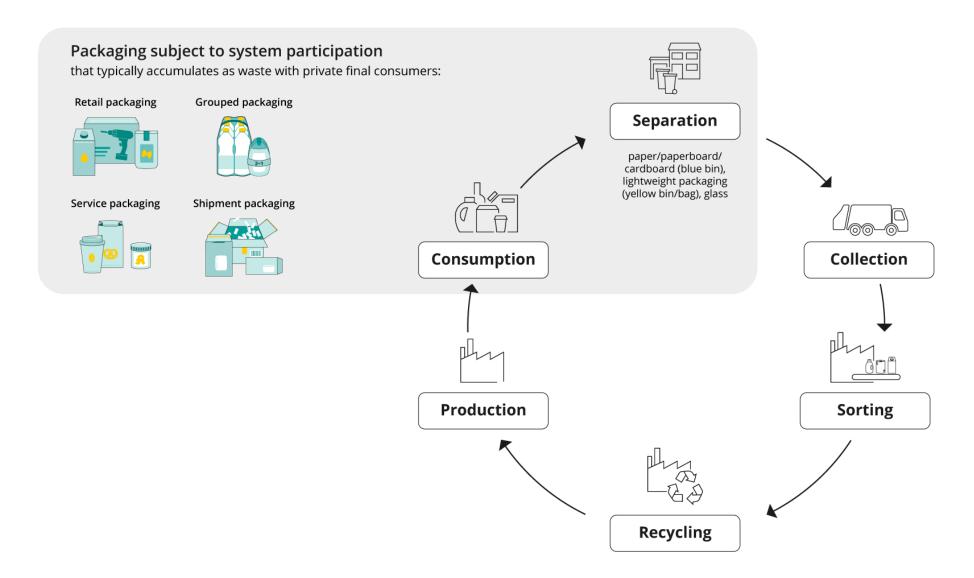
The packaging waste cycle: from private final consumption to recycling

What happens with packaging waste ...





... from private final consumption?



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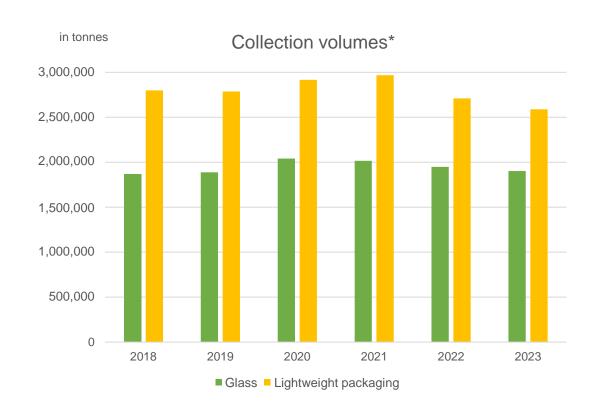
New data, positive trends and remaining challenges in packaging recycling

How much packaging waste are we talking about?





Packaging volumes collected by dual systems



Packaging waste volumes from private final consumption saw another slight decline in 2023, with reductions noted across all material groups. The main reasons behind the decline are:

- Overall use of packaging continues to decrease due to the ongoing recession and subdued consumer sentiment.
- A further reduction in the number of glass collection container sites in 2023 has once again led to a drop in glass collection volumes.

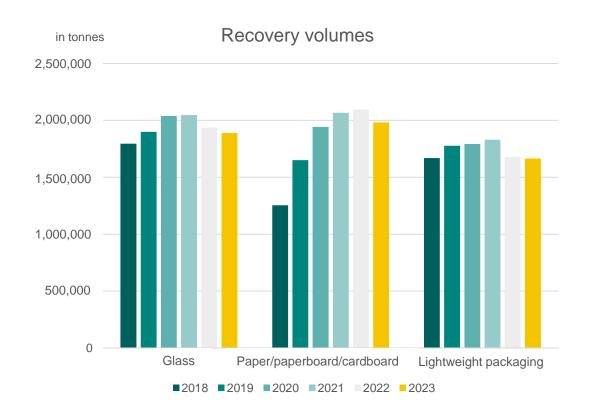
^{*} With paper/paperboard/cardboard packaging and non-packaging collected together, packaging-only numbers are unavailable. Lightweight packaging collections also include residual waste (sorting errors) and other volumes. In regions where recycling bins are used, only packaging shares are taken into account (retail, grouped and shipment packaging).

Packaging waste volumes from private final consumption





... that were transferred for recovery (2018 - 2023)



- As a result, recovery volumes also declined in 2023 across all material groups.
- In addition to the reasons listed on slide 6, consumers often place recyclable materials in the wrong waste bin. These sorting errors prevent these materials from being transferred for recovery.
- This highlights the need for action to help consumers sort their waste correctly. Pre-sorting by consumers is a crucial precursor to high-quality recycling.

Total recovery rate





... for packaging waste from private final consumption

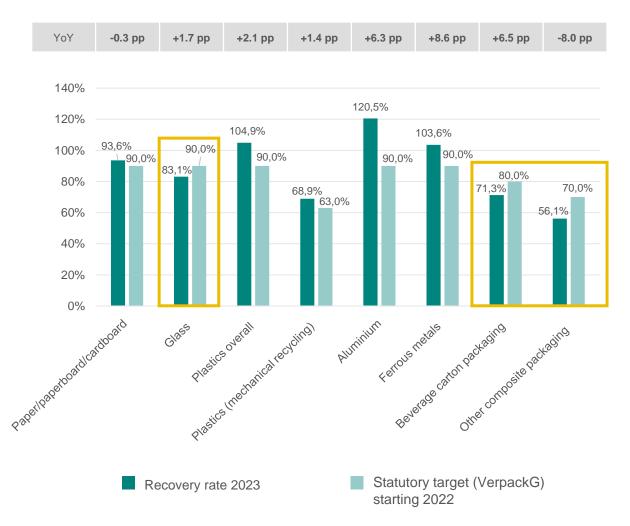
- The total recovery rate based on packaging volumes participated with dual systems was around 82 percent in 2018 (more than 4.7 million tonnes of packaging waste recovered across all material types).
- By 2023, the rate had increased to over 90 percent (around 5.5 million tonnes of packaging waste recovered across all material types).

Recovery rates 2023*





The systems achieved the following recycling rates in the 2023 reference year:



- Recycling increased year-on-year in 2023, except for paper/paperboard/cardboard and other composite packaging.
- Five out of eight statutory recycling quotas were exceeded, with plastics, aluminium and ferrous metal significantly surpassing their targets.
- The rates for glass, other composite packaging and beverage cartons fell short of the statutory quotas.
- Despite this, progress was made in the glass and beverage carton groups, with year-on-year increases in recycling rates. The recycling rate for beverage cartons remained below pre-2022 levels.
- In the composite packaging group, the statutory quota was missed by a wide margin – 13.9 percentage points – and lagged an additional 8 percentage points further behind the target compared to the previous year.
- For lightweight packaging, 51.2% of collected volumes were transferred for recovery, exceeding the requirement of 50%.

^{*} Ratio of recovery volumes to participation volumes; transfer for recycling, in the case of plastics: transfer for recovery (including energy recovery) or mechanical recovery Source: ZSVR; last updated: December 2024

Legal framework ...





... and development of packaging recycling in Germany

- Germany has the necessary conditions for a well-functioning and well-monitored system.
- ◆ Based on the Verpackungsgesetz (Packaging Act), the LUCID Packaging Register and the Zentrale Stelle Verpackungsregister (Central Agency Packaging Register – ZSVR) were established to create transparency in the packaging recycling market.
- ◆ The Act's goal is high-quality recycling. Statutory recovery and recycling quotas were introduced and raised in two stages starting in 2018. These quotas have remained at consistently high levels since 2022.
- The quality of the collected packaging waste mix has declined across all waste containers. This is due to reduced sorting discipline and consumer sorting errors. It is estimated that between 20% and 40% of waste in yellow bins is incorrectly sorted. This complicates the sorting process and negatively impacts recovery and recycling outcomes.

Material	Until 2018	2019	2022
Glass	75%	80%	90%
Paper, paperboard, cardboard	70%	85%	90%
Ferrous metals	70%	80%	90%
Aluminium	60%	80%	90%
Beverage cartons	60%	75%	80%
Other composite packaging	60%	55%	70%
Plastics (mechanical)	36%	58%	63%

What does missing the quotas mean?





Progress, challenges and possible solutions

- Overall, recycling levels have increased. Positives in 2023:
 - Sorting and recycling facilities were able to significantly increase high-quality mechanical recycling of plastic and aluminium packaging.
 - Additionally, sorting facilities for lightweight packaging are increasingly capable of sorting and making small-size flexible PE films available for recycling.
- Challenges remain, particularly in the following areas:
 - Other composite packaging, especially fibre-based composites: recyclability and shortage of recycling capacities due to the closure of a key composite recovery plant in Germany in Q4/2022. In addition, the use of this packaging type continues to rise even though it is difficult or impossible to recycle. GVM forecasts that this trend will persist. Consumers also face difficulties in sorting correctly due to unclear labelling.*
 - Collection volumes of glass packaging: There are still not enough glass container locations and glass containers available. To address this, the ZSVR Advisory Board recommends improving the framework conditions to make it as easy as possible for citizens to dispose of their glass waste in dedicated containers.**
 - Beverage carton packaging: Additional recycling capacities are still required. Although significant improvements
 were made in 2023 through initiatives by manufacturers and initial distributors of this packaging type, the demand for
 further capacity remains high.

¹¹

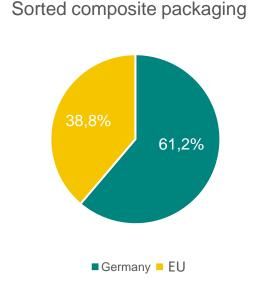


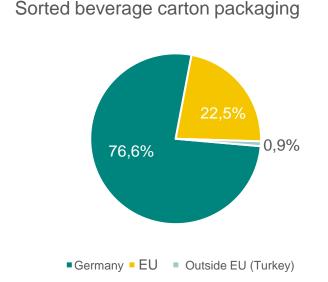


Shipping packaging waste abroad

- Regulations on shipping packaging waste abroad have been tightened, leading to a decline in the export of waste collected through the dual systems.
- The majority of packaging waste is recovered within Germany.
- ◆ When recovery occurs abroad, most target countries are within the European Union. Recovery outside the EU accounts for just 0.1% to 0.9%, depending on the material group a negligible amount.
- Volumes that have not been recognised have declined due to improvements in the obligation to provide evidence.

Sorted plastic packaging 0,1% 14,8% 85,1% Germany EU Outside EU (Switzerland, Turkey)





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Sorting and recovery in practice: how properly disposed packaging ends up in high-quality recycling

Study on the practice of sorting and recovery...

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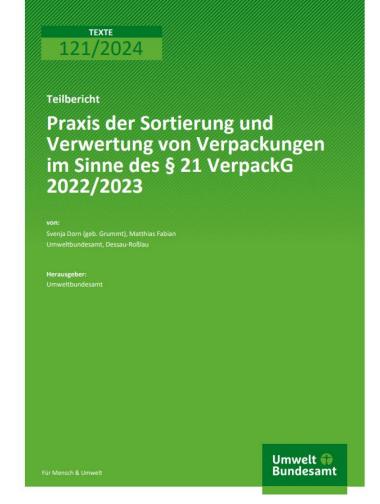


... for the German market in 2022/2023

Research question:

How likely is it that packaging placed in the designated waste collection will be recycled at high quality?

- We survey <u>all</u> facilities that are supplied with packaging waste collected by the dual systems from private final consumers in Germany (complete enumeration)
 - Waste paper, waste glass and lightweight packaging collection (e.g. yellow bins)
- We thank the German waste management sector for volunteering to collaborate with us and for their excellent contribution, with returns covering over 80% of the waste volume.



Probability of sorting and recovery ...

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... for the German market in 2022/2023

Probability of input being recycled at high quality > 80%				
Container glass	100%			
Tinplate, aluminium	100%			
Paper, paperboard, cardboard	99%			
Rigid and semi-rigid PE , PP	94% 92%			
LPB ('beverage cartons')	92%			
Transparent PET bottles (without deposit)	~ 84%			
Plastic films (large PE films)	80%			

Materials recovered through recycling often substitute the same type of virgin material in typical applications for that material. They are only partially reused in packaging (glass and PPC being notable exceptions).

Probability of > 20% and <	of input being recycled at high qual 80%	lity			
Rigid and ser	mi-rigid PS	63%			
Fibre-based	composites	33 – 63%			
Small-size fle	exible PE packaging	51%			
Flexible PP p	packaging	30%			
Probability of input being recycled at high quality < 20%					
PET trays, e	.g. PET packaging	0.5 – 25.5%			
EPS, XPS		0%			
	cs, e.g. PC, PVC, PA, PLA, natural dable polymers	0%			
Wood, cork,	stoneware, natural minerals	0%			

¹⁵

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Clean and correct waste separation: a key to effective circularity







Sorting waste is a must Sorting waste

- ... is essential for recycling
- · ... relies on all of us
- · ... isn't difficult



Waste glass collection







What belongs in the waste glass collection?
All empty glass packaging



What you need to know:

Please sort by colour. Lids can stay on.



Do not put in the waste glass collection: Window glass, crockery, mirrors, ceramics, porcelain

For example:

- Food jars made from glass (e.g. for vegetables and fruit)
- Flacons or flasks made from glass (e.g. for perfume, medicine)
- Glass bottles without deposit (e.g. for oil, wine, spirits)

This means:

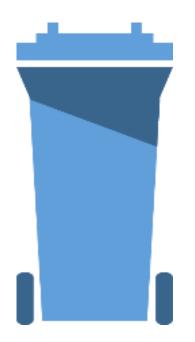
- Transparent glass goes in the white glass bin
- Brown glass goes in the brown glass bin
- All other colours go in the green glass bin
- Not sure about the colour? → Green glass bin

Why is that important?

- Glass packaging is made from a different type of glass than other glass products.
- These different types of glass interfere with recycling and have to be sorted out at great expense.







What belongs in the waste paper collection?

Magazines, newspapers, exercise books, empty packaging made of paper, cardboard or paperboard

What you need to know:

Only dry and clean paper should go in the waste paper collection.

Do not put in the waste paper collection:

Beverage cartons and paper packaging for liquids (e.g. takeaway coffee cups), empty but heavily soiled paper packaging

For example:

- Shipping boxes
- Empty pizza boxes
- Paperboard product packaging

Why is that important?

 Moisture and dirt impair the quality of recovered paper and must therefore be avoided.

Why is that important?

 This paper is processed or coated and must be recycled in specialised paper recycling mills. Put it in the yellow bin.

Lightweight packaging

Yellow bin, yellow sack, recycling bin







What belongs in the yellow bin?

All empty packaging that does not go in the waste glass or waste paper collection

What you need to know:

Packaging must be empty (no cleaning required), with lids and other removable components taken off. Do not stack the packaging.

Do not put in the yellow bin:

Residual waste, organic waste, batteries, textiles, packaging with contents

For example:

- Metal packaging, food cans
- Plastic packaging
- Beverage cartons, paper packaging for liquids, composite packaging

Why is that important?

- Sorting facilities for packaging waste cannot separate the materials.
- Packaging waste is cleaned at the recycling plant.

Why is that important?

- Sorting errors negatively affect sorting and recycling.
- Batteries can lead to fires in sorting plants, causing significant damage.









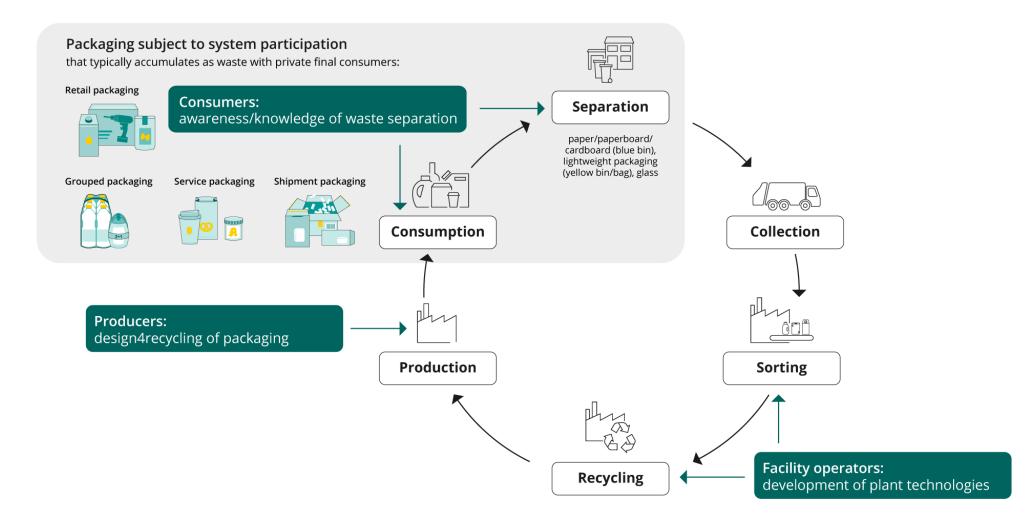
What it takes for effective recycling loops – in light of the European Packaging and Packaging Waste Regulation

Recycling loop

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Everyone must do their part





EU Packaging and Packaging Waste Regulation





Strengthening producer responsibility for packaging

- ◆ The European Packaging and Packaging Waste Regulation (PPWR) builds on the European Green Deal adopted in December 2019 and the Circular Economy Action Plan adopted in March 2020.
- The PPWR provides a strategic framework to address ecological challenges and drive change across the European Union. It strengthens producer responsibility through stricter requirements:
 - By 2030, all packaging must be reusable or recyclable.
 - Measures to reduce (excessive) packaging and packaging waste will be advanced.
 - Packaging design will be improved to enhance reusability and recyclability.
 - The complexity of packaging materials will be reduced.
 - New requirements for recycled content in plastic packaging will be introduced.



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Thank you very much for your attention.

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Sources and list of references

Sources and list of references





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Backup

Agenda





- ◆ The packaging waste cycle: from private final consumption to recycling: Slides 3 and 4/Gunda Rachut
- New data, positive trends and remaining challenges in packaging recycling: Slides 5 to 11/Gunda Rachut
- Sorting and recovery in practice: how properly disposed packaging ends up in high-quality recycling Slides 12 to 14/Bettina Rechenberg
- Clean and correct waste separation: a key to effective circularity Slides 15 to 19/Bettina
 Rechenberg
- What it takes for effective recycling loops in light of the European Packaging and Packaging Waste Regulation Slides 20 to 22/Gunda Rachut

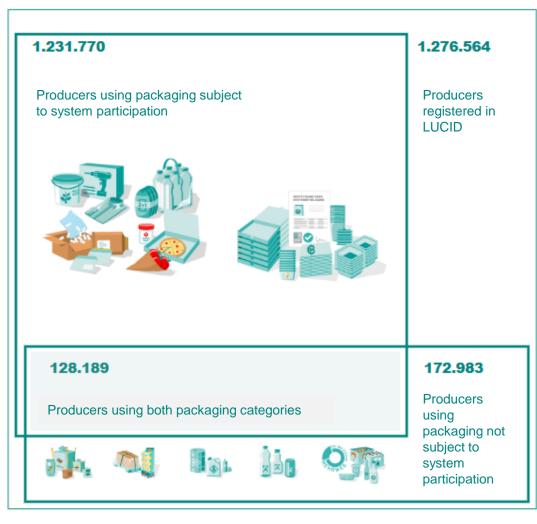
Registrations with the LUCID Packaging Register ...

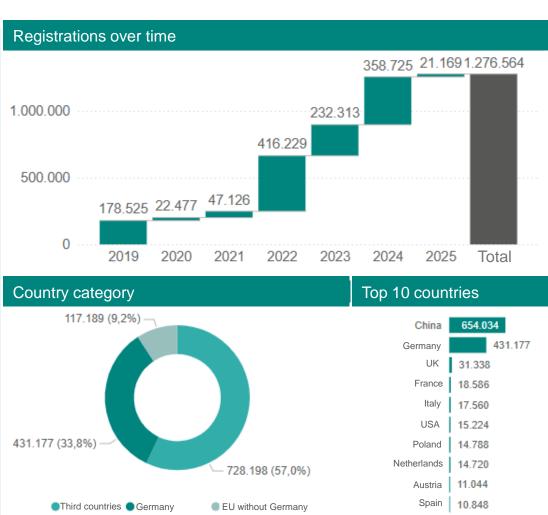




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... from around the world





Source: ZSVR; last updated: January 2025

Other important numbers and figures





Auditors, declarations of completeness, enforcement

Number of auditors registered with the LUCID Packaging

Approximately 3,700 registered auditors

declarations of completeness received since 2019

- Since its inception, the ZSVR has received approximately 33,300 declarations of completeness.
- This number also includes declarations of completeness for previous years dating back to 2015.
- The average annual number is around 5,600 declarations of completeness.





cases reported to enforcement authorities

Since 2019, a total of 25,800 suspected administrative offences have been reported to the enforcement authorities of the Federal States via the digital portal for authorities (reference years of the charges 2019 to 2024). These cases include, in particular:

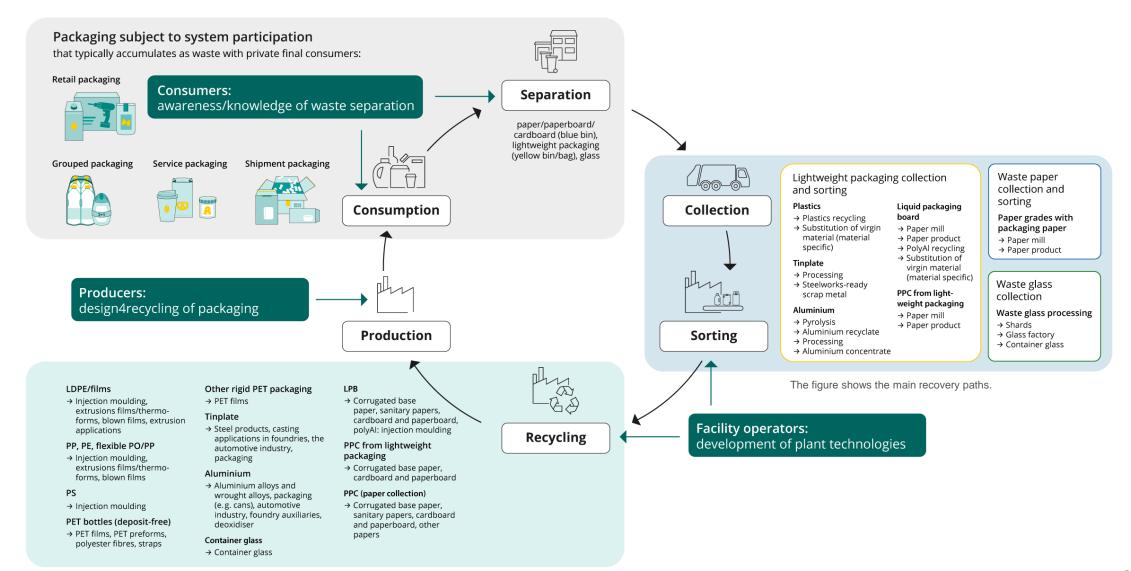
- cated
- failure to participate packaging with a system over several years (50% of reported cases involve companies located outside of Germany)
- late submission or failure to submit declarations of completeness, which are required for high packaging volumes of large distributors and verified by auditors

Recycling loop

Everyone must do their part



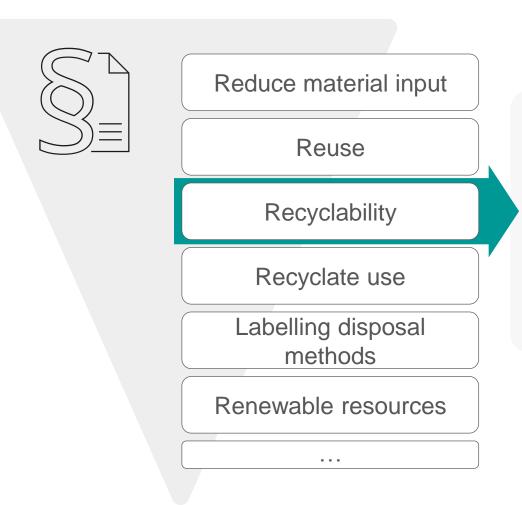




Future requirements of the EU Regulation on Packaging and Packaging Waste







EU market placement ban if ...



^{*} Exceptions for specific materials such as lighweight wood, corks, ceramics, etc.

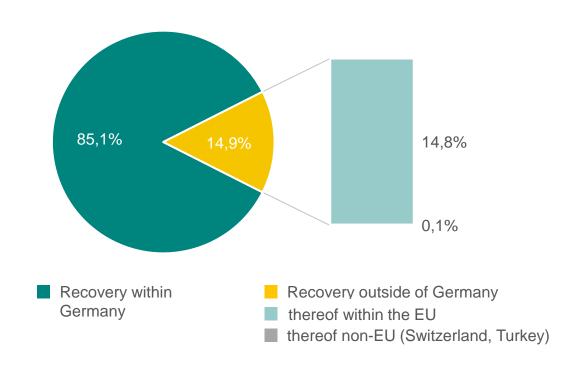




Exports of sorted plastic packaging

At +0.7%, exports of sorted plastic packaging were slightly higher in 2023 than the previous year. Target countries are still mostly within the European Union. In 2023, export to non-EU countries was once again marginal at 0.1%.

Overview of all sorted plastic packaging for 2023 (incl. mixed plastics):



Note:

Exports include around 900 tonnes to EU countries that were not recognised by the ZSVR due to a lack of evidence of recovery;

for the volumes remaining in Germany, this applies to around 1,100 tonnes.

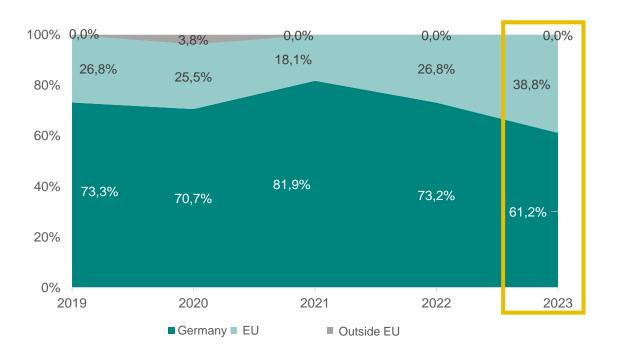
These volumes were not included in the calculation of recovery rates.





Export of sorted fibre-based composite packaging (PPC made of lightweight packaging)

Exports of other composites with a main material of paper, paperboard or cardboard (excluding beverage cartons) to EU member states increased significantly by 10.2%. This is due to the shortage of recycling capacities in Germany, particularly following the closure of a key composite recovery plant in Germany in the fourth quarter of 2022. Despite the significant increase in exports, recycling capacities are far too low overall. This is also at odds with this packaging type's rising popularity and the challenges it poses for recycling.



Note:

<u>Germany:</u> The figure includes around 1,000 tonnes in composite packaging for which evidence of recovery was not recognised by the ZSVR.

These volumes were not included in the calculation of recovery rates.

2019: The volumes delivered to Bulgaria were cut by almost 2,500 tonnes due to incorrect information in a facility certificate.

^{2020:} The ZSVR did not recognise roughly 110 tonnes of composite material exported to India for recovery due to a lack of evidence of recovery.

^{2021:} Around 1,250 tonnes of other composites were not recognised by the ZSVR due to a lack of evidence of recovery.

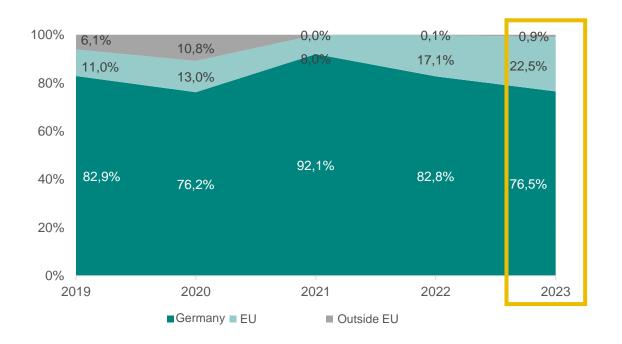
^{2022:} The figure includes around 3,355 tonnes in beverage carton packaging for which evidence of recovery was not recognised by the ZSVR.





Exports of sorted beverage carton packaging

The majority of beverage carton packaging was recovered in Germany, but exports increased by 6.3%. While exports to non-EU countries increased slightly, they still only account for a negligible share of 0.9%. This packaging type is still recovered almost exclusively in Germany or in EU member states.



Note:

Germany: The figure includes nearly 5 tonnes of beverage carton packaging for which evidence of recovery was not recognised by the ZSVR.

These volumes were not included in the calculation of recovery rates.

Packaging recycling and recyclability





Share of highly recyclable packaging subject to system participation on the German market 2021

Research question:

What was the share of highly recyclable packaging in the market volume of packaging subject to system participation in the 2021 reference year?

Packaging subject to system participation		Share of recyclable market volume < 95%
Total	10.7%	14.9%
Lightweight packaging	32.0%	44.3%
Composite packaging	46.3%	46.8%



In addition to composite packaging, other problem areas include plastic-plastic composites, plastic components (e.g.
from metal packaging) and other packaging types made from materials that lack appropriate sorting or recycling
infrastructure.