

# Recycling packaging: progress, setbacks and challenges

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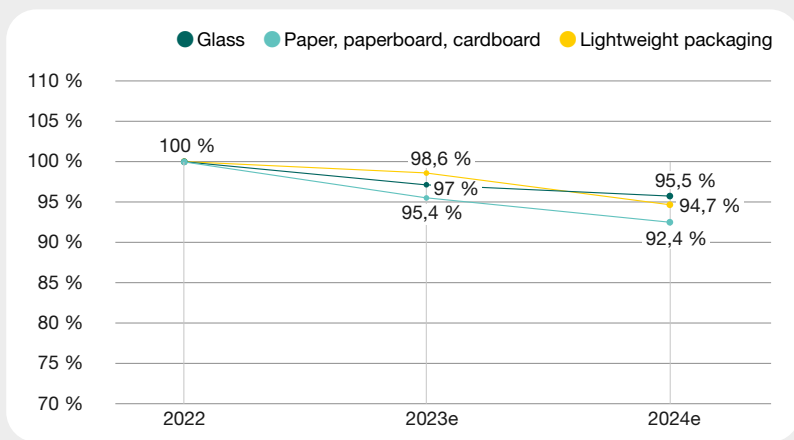
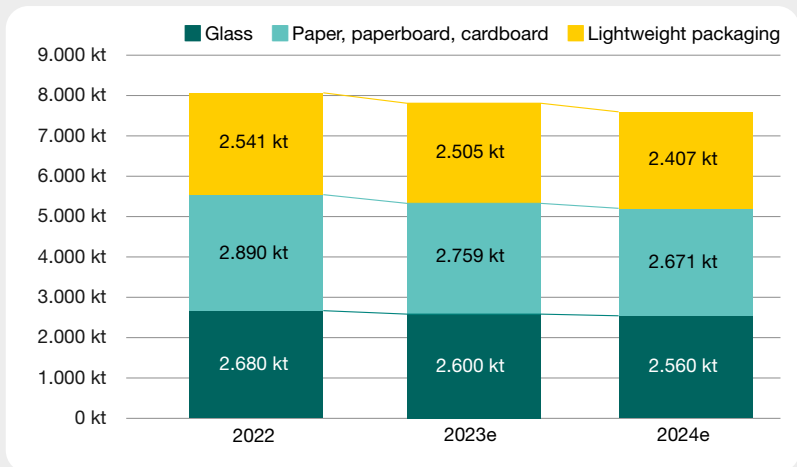
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The idea behind the Verpackungsgesetz (Packaging Act) is to reduce the impact of packaging waste on the environment. Where packaging cannot be prevented, recycling-friendly design is all the more important to make sure that valuable raw materials can be extracted from packaging waste and fed back into the cycle. In Germany, system operators are responsible for collecting, sorting and recycling the packaging waste accumulating in private households. They recover six million tons of household packaging every year. Packaging recycling is part of a complex ecosystem of various influencing factors, differing interests and great challenges. These dynamics are the topic of this paper, which will also take a close look at the state of high-quality recycling in Germany.

## Starting Point: Use of packagingover time

Following a steady increase up until 2021, the use of packaging turned around in 2022 and has declined since. The Gesellschaft für Verpackungsmarktforschung mbH (GVM)<sup>1</sup>, a market research institute specialising in packaging, believes that this contraction will continue in the years to come (cf. chart).



In numbers: GVM estimates that the total market volume of packaging subject to system participation will decrease from 8.1 million tonnes in 2022 to 7.9 million tonnes in 2023 and 7.6 million tonnes in 2024. For glass, GVM projects a 4.5 percent decrease by 2024. Lightweight packaging volumes are expected to decline by 6.2 percent. At 7.6 percent, the drop projected for paper, paperboard and cardboard packaging is even more pronounced. Why is that?

<sup>1</sup> GVM Gesellschaft für Verpackungsmarktforschung, October 2023 (internal study, not published) 'Prognose der Marktmenge systembeteiligungspflichtiger Verpackungen 2023 und 2024' (Market volume forecast for packaging subject to system participation in 2023 and 2024)

## The overall economic situation

According to GVM, the reasons driving lower packaging volumes amongst private final consumers in 2023 are largely rooted in the overall economic situation, more specifically in declining demand for:

- ◆ fast moving consumer goods, especially expensive products (e. g. alcoholic drinks, premium frozen products);
- ◆ non-food products dependent on households having enough income to afford them (e. g. furniture, electronics, major household appliances, jewellery); and
- ◆ out-of-home consumption.

Looking at 2024, GVM also forecasts a decrease in packaging for construction and renovation products. This, too, is driven by the overall economic situation, but also by higher prices for construction materials and a shortage of contractors. In addition, GVM expects an increased reuse of washed waste glass for 2023 and 2024, especially since there is a supply shortfall for new bottles, which have also become significantly more expensive. This is an instance where environmental and economic considerations converge.

Another trend underpinned by economic fundamentals is the lower shot weight of paper, paperboard and cardboard packaging, which again is driven by higher materials prices. This has had the favourable effect that paper, paperboard and cardboard packaging is now designed to fit more accurately, which saves packaging materials.

## Environmental protection and waste prevention

One reason for the decline in packaging volumes is ecological awareness. Ecological awareness has led to waste prevention, with more and more reusable trays being used for household-related products or rigid packaging being replaced by films – even where this might come at the expense of recyclability.

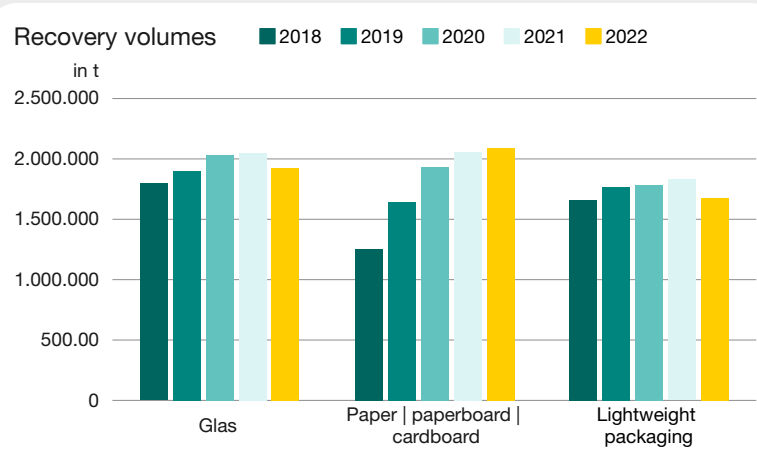
GVM expects additional ecological trends for 2024. As foodservice businesses in Germany offering takeaway have been legally required to offer reusable packaging, plastic packaging should register a sharp decline. Plastic packaging should not only become lighter, it is also expected that even more plastic packaging than before will be replaced by paper or composite packaging, even though the trend towards composites is a drawback for recyclability.

## Taking stock of recycling: How do we make sure packaging is fit for high-quality recycling?

More and more packaging is fit for high-quality recycling: in 2022, system operators were able to recover around two-thirds of the 8.1 million tonnes of packaging subject to system participation placed on the German market.

Despite far stricter requirements, system operators reached (and in part significantly exceeded) the statutory recycling quotas for five out of eight material types.

And at 52.3%, the requirement for system operators to transfer more than half of the lightweight packaging volumes collected for recovery was also exceeded.



**Missing the targets for glass, beverage carton packaging and other composite packaging:** What are the underlying reasons and what are the barriers to high-quality recycling for packaging waste that accumulates in private households?

- ◆ The share of recycled **glass packaging** fell 3.4 percentage points in 2022 compared to the previous year. The reasons are ever scarcer places for glass bins and, as such, dwindling collection volumes. As a result, the volumes of used glass recovered by recycling plants are declining. Inadequate separation of glass packaging by consumers exacerbates the problem.
- ◆ The main factor burdening **beverage carton packaging** recycling is rooted in capacity constraints at recovery facilities. On a positive note, the distributors of this type of packaging are going to great lengths to establish recycling pathways and set up recovery capacities. A recent development is that not only the paper fibre, but also the plastic and aluminium layers of beverage cartons can be recycled. It is now important that these capacities are further increased.
- ◆ **Other composite packaging** (especially paper-based composite packaging, the market volume of which will soar in the coming years according to a GVM forecast) remains the greatest cause for concern. It is not only the prevailing capacity constraints at the recycling facilities that pose a problem; most recently, a large portion of recovery capacities fell to the wayside on the back of high energy prices in 2022. Urgent action is needed. If necessary, the remaining plants will have to be paid appropriately or new recycling capacities will have to be created. In addition, fibre-based composite packaging is often not labelled as such. As a consequence, consumers often dispose of it in the wrong bin. The EU Packaging and Packaging Waste Regulation aims to remedy the situation by introducing a uniform labelling system for packaging.

## How can we strengthen high-quality recycling further?

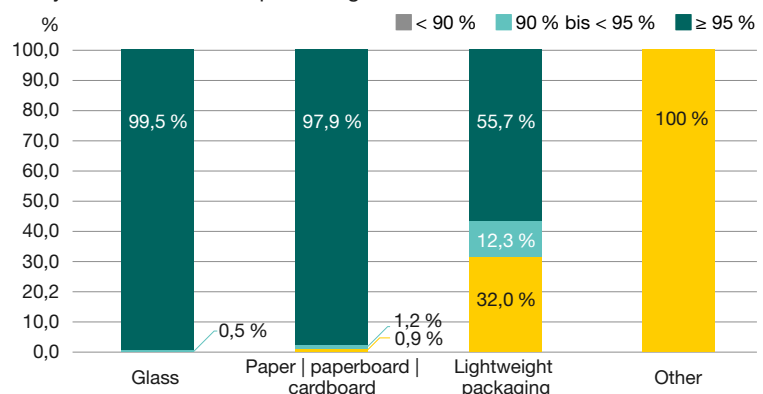
It is no surprise that recyclability benefits the recycling rate. There are two key levers to meet the statutory quotas: the packaging design, on the one hand, because it is key for recyclability, and the relevant sorting and recycling infrastructure on the other.

Section 21 VerpackG requires systems to set financial incentives for recyclable packaging based on the minimum standard for recycling-friendly packaging. Packaging of high recyclability shall have financial benefits compared to packaging that is unfit for recycling.

The ZSVR updates this minimum standard every year, in agreement with the German Environment Agency. Reflecting current recycling practice, the minimum standard takes new packaging trends and plant technologies into account.

**Recyclability** largely depends on a packaging's material and design. There is a strong discrepancy between highly recyclable packaging and packaging of low or no recyclability. According to a study conducted by the German Environment Agency<sup>2</sup>, the glass and paper, paperboard, cardboard groups count among the highly recyclable material groups, with a recyclability of almost 100 percent.

Recyclable content as a percentage of mass



<sup>2</sup> German Environment Agency, June 2023, 'Ermittlung des Anteils hochgradig recyclingfähiger systembeteiligungspflichtiger Verpackungen auf dem deutschen Markt' (Determining the share of highly recyclable packaging subject to system participation on the German market)

Together, they account for more than two thirds of the household packaging placed on the German market. While 68 percent of lightweight packaging has a recyclability of more than 90 percent, 32 percent are either not recyclable at all or only recyclable to a very low degree.

However, the lack of recyclability of composite packaging is a much bigger problem. According to the German Economic Agency's study, nearly every other article of packaging with less than 90 percent recyclability is composite packaging – a trend that is in absolute contradiction to the idea of a circular economy. The same is true for packaging for which no recycling quota has been set, such as packaging made of bamboo, wood, jute, ceramics or cork, which is never recycled in practice.

How successful recycling really is also depends on whether private households adequately separate their waste. Even the most thoroughly designed packaging cannot be recycled if it is disposed of in the wrong bins, sacks or containers. In the first place, however, packaging must be designed in a way that gives consumers a chance to separate their waste adequately.

## Conclusion

There is good news to tell: packaging use in private households is going down and more than two thirds of packaging is recyclable. Against this background, the share of recovered packaging is increasing.

What stands out is the discrepancy between packaging that is fit for high-quality recycling and other packaging that is often either almost or completely impossible to recycle. While this is especially a problem with other packaging materials such as wood, bamboo, jute or stoneware, it also concerns composite packaging and, to a lesser extent, plastic packaging.

It is time that we rethink our use of resources. We can no longer afford to use resources only for a short time and then combust them. Being wasteful is simply not an option. The minimum standard for determining the recyclability of packaging was published in 2019 and as such the knowledge base on the recyclability of packaging is large enough. Now, in 2024, developing packaging that is not fit for high-quality recycling is no longer acceptable!

### Sources:

- 1) GVM Gesellschaft für Verpackungsmarktforschung, October 2023 (internal study, not published) 'Prognose der Marktmenge systembeteiligungspflichtiger Verpackungen 2023 und 2024' (Market volume forecast for packaging subject to system participation in 2023 and 2024)
- 2) German Environment Agency, June 2023, 'Ermittlung des Anteils hochgradig recyclingfähiger systembeteiligungspflichtiger Verpackungen auf dem deutschen Markt' (Determining the share of highly recyclable packaging subject to system participation on the German market)
- 3) ZSVR, 2024, annual press conference: 'Recycling im Wandel: Gemeinsam für Qualität und Quoten' (A new age for recycling – joining forces for high quality and high rates)