

26 March 2021

How to make Packaging more Recyclable?

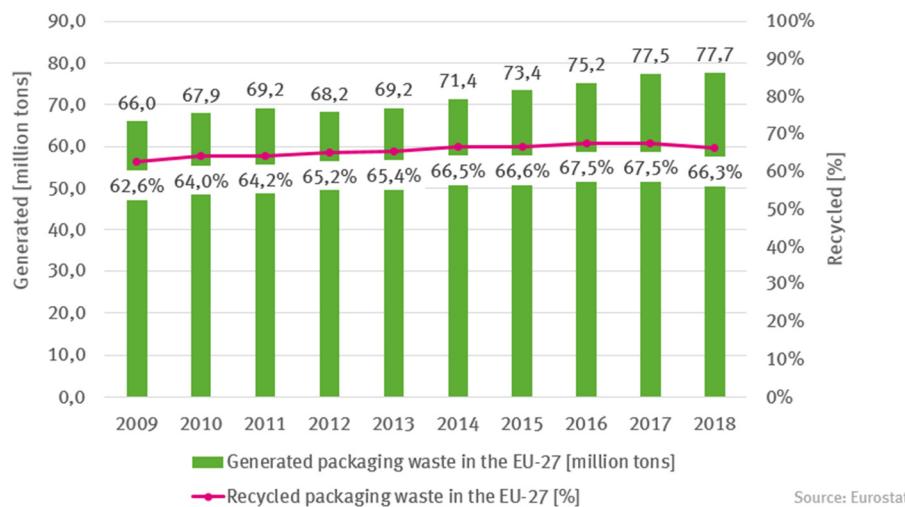
Background paper for the online-event “How to make packaging more recyclable?” on 26 March 2021, organised by Delara Burkhardt, MEP, and the German Environment Agency

As part of the European Green Deal, one of the key goals of the Circular Economy Action Plan is to reinforce the essential requirements for packaging as set out by the Packaging and Packaging Waste Directive (Directive 94/62/EC, Article 9 and Annex II). In conjunction with the EU waste hierarchy, packaging and packaging waste shall primarily be avoided and limited to the necessary minimum extent wherever possible. If packaging is needed, it should permit its re-use several times or, otherwise, at least permit its high-quality mechanical recycling, before other recovery.

Packaging Waste Generation and Recycling in the EU

However, every year, the amount of packaging and packaging waste is increasing. In 2018 alone, the EU-27 generated 77.7 million tons of packaging waste in total, or 174 kg per capita. From 2009 to 2018, packaging waste in the EU increased by 18%. The recycling rate, however, has not kept up with that increase (see fig. 1).

Figure 1: Development of packaging waste generation and recycling in the EU-27



In order to save resources and achieve the European Union's circular economy goals, besides waste prevention, effective high-quality recycling of packaging waste is crucial. The new Packaging Directive has increased the recycling targets for packaging waste. According to Art. 11(1) of the Waste Framework Directive, Member States shall take measures to promote high-quality recycling. The EU Plastics Strategy stipulates that by 2030 all plastic packaging placed on the EU market must be (cost-effectively) recyclable, if it is not reusable. In addition, the Single-Use Plastics Directive mandates to use 25% recyclates (recycled material) in PET bottles by 2025 and 30% recyclates in all plastic beverage bottles by 2030. All this requires to know under which conditions packaging is recyclable, and how to make packaging more recyclable.

Recyclability of Packaging

How to determine the recyclability of packaging? In order to contribute to saving resources, recycling should preserve material for the product loop at a high level so that the recycled material can substitute virgin material in applications that are typical for that material.

Determining recyclability

Today, no common harmonised standard for determining the recyclability of packaging exists in the EU. For the German market, the Central Agency Packaging Register (ZSVR) and the German Environment Agency developed the *Minimum Standard for Determining the Recyclability of Packaging*.¹ It shows how recyclability for high-quality mechanical recycling of packaging can be determined. Only packaging that meets the following three criteria is considered recyclable:

1. Availability of a sorting and recycling infrastructure for high-quality mechanical recycling for this packaging
2. Sortability of the packaging and, where necessary, separability of its components
3. The packaging does not contain any recycling incompatibilities.

Packaging can only be recycled if the packaging material is correctly identified by the sorting plant and thus assigned to the appropriate recycling fraction. Technical equipment for sorting and recycling varies between the Member States and even between plants. In order to be able to determine the recyclability of packaging across the EU, knowledge of the practice of sorting and recycling in the Member States would be helpful.²

Design for effective sorting and recycling

To our knowledge, however, there are some design guidelines that generally ease the sorting and recycling of packaging (see fig. 2). For example, bright coloured plastic packaging is easier to identify than (soot carbon-based) dark-coloured plastics. Packaging materials covered by smaller foreign-material labels are easier to identify than those with full-sleeve labels. PA additives in PET bottles can impede a successful recycling. Such criteria should be considered in the design of packaging.

One way to increase the use of these design criteria would be to specify the essential requirements concerning recyclability in article 9 and Annex II of Directive 94/62/EC. These should be precise and enforceable. As an orientation for packaging design, high-quality mechanical recycling could be referenced, considering the actual practice of sorting and recycling in the EU.

Figure 2: Comparison of the recyclability of different packaging designs



Imprint

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¹ <https://www.verpackungsregister.org/en/foundation-authority/minimum-standard-pursuant-to-section-21-verpackg>

² A summary of Germany's practice can be found in the following research project: <https://www.umweltbundesamt.de/publikationen/ermittlung-der-praxis-der-sortierung-verwertung-von> (in German).