

Information Map - Towards circular flexible plastic packaging in 2025

Why should the value chain for flexible plastic packaging become circular, what prevents this from happening and how can stakeholders achieve it?

Why

What motivates the CoP* to move towards a circular value chain for flexible plastic packaging in 2025?

- Public opinion is negative towards plastic packaging.
- A large part of the public wants to reduce the impact of products and packaging on the environment.
- Incorporating flexible plastic packaging into a circular value chain is essential for meeting European climate goals.
- A circular value chain is essential for meeting pledges about recyclability by brand owners.
- Flexible plastic packaging is highly functional and has effective material usage.
- Without circularity, brands might transfer to less eco-effective packaging that has better consumer perception.

To what degree is the value chain circular at this moment?

- Flexible plastic packaging covers about 45% of all plastic packaging.
- In theory 80% of flexible packaging is recyclable, instead it is landfilled, incinerated or not recycled at its highest utility.
- Currently no technology is available to create recycled content that is allowed in flexible food-grade packaging.
- The primary focus in recycling is on managing material flows and not on the environmental impact.

What are the common goals of the CoP?

- Consumers know how to dispose used flexible packaging correctly.
- All flexible plastic packaging in Europe is designed for circularity, and is collected, sorted and recycled.
- Materials are reused or recycled to their highest utility and reduce the use of virgin materials for flexible packaging.
- The overall environmental impact of packed goods on our planetary boundaries is reduced to the minimum.
- The desired measures must fit within an acceptable business case for all parties in the value chain.

What

What challenges does the CoP see in relation to the DESIGN of flexible plastic packaging?

- Redesigned packages are often not compatible with current packaging lines and processes, and lack efficiency.
- Brands and retailers might opt for 'greenwashing', in order to meet consumer perceptions of circularity.
- Designing in compliance with circularity guidelines does not guarantee packaging actually gets recycled in practice.

What challenges does the CoP see in relation to the COLLECTION of flexible plastic packaging?

- Not every European country collects all flexible plastic packaging in a way that is fit for recycling.
- The requirements for correct packaging disposal are too complicated for consumers to follow.
- There are no harmonised instructions for disposal of metallised flexible packaging in the Netherlands.
- There are no harmonised instructions for disposal of packaging in Europe.

What challenges does the CoP see in relation to the SORTING of flexible plastic packaging?

- Not every country in Europe has the right infrastructure to sort all flexible plastic packaging.
- There are no sorting fractions for flexible PP, PO and PE smaller than A4, they are processed in a mixed-plastic fraction.
- Sorting facilities have difficulties to separate multi-material packaging from the mono-material fraction.

What challenges does the CoP see in relation to the RECYCLING of flexible plastic packaging?

- There is no uniform way to assess the recyclability level of flexible plastic packaging.
- Producing high quality material by recycling post consumer is costly and technically challenging.
- Aiming for highest utility output requires extra washing and puts more pressure on water purification.
- The impact of future techniques like chemical recycling is unclear, but will influence current recycling techniques.

What challenges does the CoP see in relation to the END MARKETS of flexible plastic packaging?

- There are no defined markets for recycled flexible mono-PP to be used in products for end-users.
- The utility rate and value of products made from the current mixed-plastics fraction are very limited.
- It is difficult to compete with virgin materials due to the historically low virgin material prices.

Motivation

Current situation

Desired situation

Conditions

Which overall conditions should be met in order to tackle the challenges, and require coordination, according to the CoP?

- Definitions of and guidelines on recyclability and circularity should be harmonised on a European level.
- Stakeholders need a system to deal with different regimes if one European approach is not realized.
- Stakeholders across the value chain need to collaborate and invest in innovation of materials and processes.
- Stakeholders need to coordinate their actions towards circularity within the overall circular value chain.
- The required modifications of the collection, sorting and recycling infrastructure should be economically viable.
- Consumers' awareness of sustainable packaging needs to be improved.
- There needs to be a objective way to compare the impact of available packaging materials.

How

Which actions can stakeholders take according to the CoP to improve DESIGN?

- (Re-)design packaging according to design guidelines from CEFLEX and/or RecyClass where possible.
- Design guidelines for circularity should be harmonized on a European level.
- When choosing materials, take into account the future recyclability of mono-PE, mono-PP and PO fractions.
- Identify solutions and develop capabilities to collect, sort and recycle non mono-PE, mono-PP and PO fractions.

Which actions can stakeholders take according to the CoP to improve COLLECTION?

- Improve collection of all flexible packaging for sorting and recycling.
- Implement international disposal instructions for consumers, suitable for local collection systems.
- Implement disposal instructions for all flexible packaging material, including metallised packaging.

Which actions can stakeholders take according to the CoP to improve SORTING?

- Identify the most effective sorting method for all flexible plastic packaging material.
- Ensure flexible plastic packaging smaller than A4 also gets sorted for recycling at its highest utility.
- Consider using cascading steps, starting with the sorting of PO-flexibles and extracting mono-fractions out of it.

Which actions can stakeholders take according to the CoP to improve RECYCLING?

- Ensure the recycled materials meet the specifications for the use at their highest utility and value.
- Look for opportunities to recycle into food-grade materials.
- Find a balance between the amount of material to be recycled, and the utility and value of the recycled product.
- Prepare for future innovations such as chemical recycling.

Which actions can stakeholders take according to the CoP to improve END MARKETS?

- Find end markets for all recycled flexible packaging materials.
- Improve the financial and technical attractiveness of recycled materials, so they compete with virgin materials.

About this map

This Information map is based on literature and one thinking session with experts from the Community of Practice (CoP) lead by the Netherlands Institute for Sustainable Packaging (KIDV). The Community of Practice(*) wants to improve the dialogue between stakeholders on how to work towards a circular value chain for flexible plastic packaging. The primary focus in this roadmap is on the Dutch market situation. A circular economy is one that is restorative and regenerative by design and aims to keep products, components and materials at their highest utility and value at all times (MacArthur, 2015). Recyclability is regarded as an essential step towards a circular value chain, next to the elimination of packaging we do not need and the reuse of packaging. The value chain consists of brand owners and retailers, material producers, technology suppliers, waste collectors, sorters and recyclers, Extended Producer Responsibility Organizations (EPRs), governments, NGOs, knowledge institutes, and consumers.