



Single Use Plastics Directive

**Will single-use plastics be missed
in the recycling industry?**



SUP Directive

Key measures for plastics recycling

Single Use Plastics Directive

Directive 2019/904



Single Use Plastic Product (Art. 3(2)):

“a product that is made **wholly or partly from plastic** and that is not conceived, designed or placed on the market to accomplish, within its life span, **multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived**”

Single Use Plastics Directive

A ban on plastics? Not all packaging is single-use



- Food containers excluded from the Directive:
 - Plastic food container containing a frozen meal
 - Fish boxes, meat trays, made out of plastic containing packed food that is not intended for immediate consumption, not typically consumed from the food container, and not ready to be consumed without further preparation
 - Plastic food container containing dried food or foodstuff that require hot water to be poured in the receptacle (e.g., noodles, powder soups)
- Packets and wrappers excluded from the Directive:
 - Packet containing dry breakfast cereals
 - Packet containing fresh/dried food that requires further preparation (e.g., entire head of lettuce, uncooked pasta, uncooked lentils)
- And many other examples: the EC to publish guidelines on Single Use Plastic Products with the interpretation of the measures

Directive 2019/904

Article 5 “Restrictions on placing on the market” Annex - PART B



- Cotton bud sticks, except for medical purposes
- Cutlery (forks, knives, spoons, chopsticks)
- Plates
- Straws, except for medical purposes
- Beverage stirrers
- Sticks to be attached to and to support balloons, except balloons for industrial or other professional uses and applications that are not distributed to consumers, including the mechanisms of such sticks
- Food containers, beverage containers (including caps and lids), cups for beverages (including caps and lids), made of expanded polystyrene

Single Use Plastics Directive

Product-specific measures on beverage containers/bottles



Art. 6 'Product requirements' (1) to (5) by 3rd July 2024

- Single-use beverage containers may be placed on the market only if the caps and lids remain attached to the containers during the products' intended use stage
- **Recycled content targets:**
 - By 2025, **25% for all PET beverage bottles** as an average for all PET bottles placed on the market on the territory of that Member State
 - By 2030, **30% as an average for all beverage bottles** placed on the market on the territory of that Member State

Article 8 "Extended producer responsibility" by 31st December 2024

Single Use Plastics Directive

Product-specific measures on beverage containers/bottles



Art. 9 'Separate collection'

1. Member States shall take the necessary measures to ensure the **separate collection for recycling**:
 - (a) by 2025, of an amount of waste single-use plastic products listed in Part F of the Annex equal to; **77 % of such single use plastic products** placed on the market in a given year by weight
 - (b) by 2029, of an amount of waste single-use plastic products listed in Part F of the Annex equal to **90 % of such single use plastic products** placed on the market in a given year by weight.

EFSA authorisations for the use of recycled plastics in food-contact applications

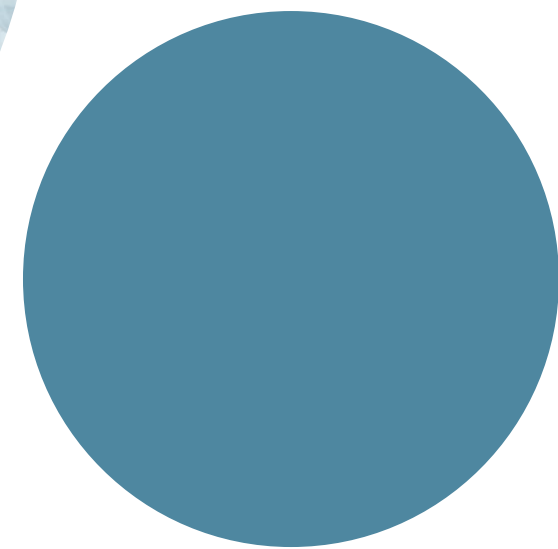


- EFSA adopted scientific opinions on the safety evaluation of mechanical recycling process to produce recycled PET in manufacturing materials and articles in contact with food.
- Delays in the authorisation by the European Commission of these EFSA opinions.
- This delay in authorisation:
 - negatively impacts the harmonisation across EU Member States
 - generates uncertainty and an unnecessary burden for the value chain in producing and using recycled plastic materials

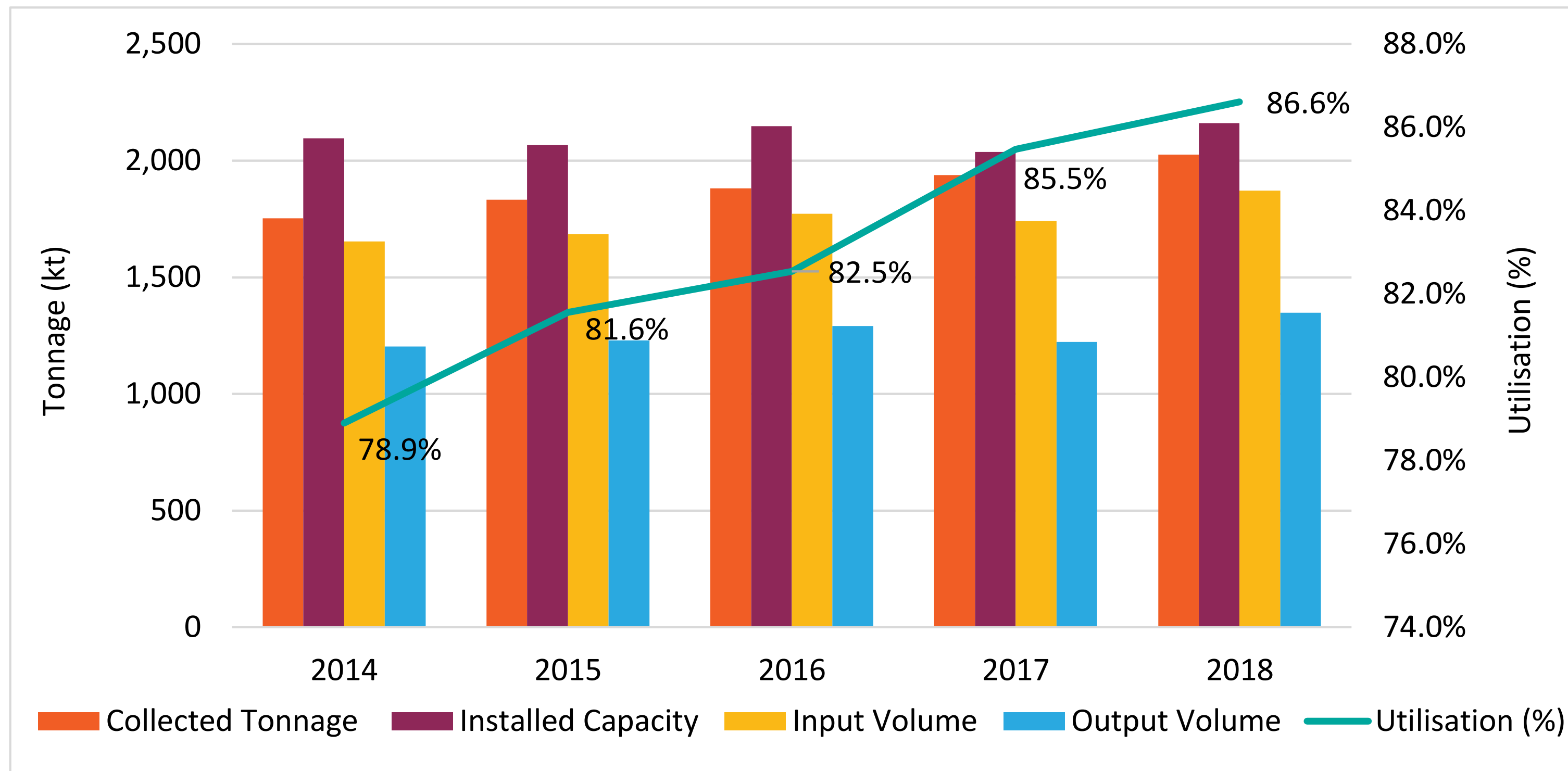
Authorisations of such opinions and new guidelines targeting other recycled polymers (polyolefins) to be used in food contact applications will be **key for the plastics recycling industry to achieve the SUPD targets on recycled content.**

Impact on the plastics recycling industry

The case of the PET Market in Europe



PET Market in Europe

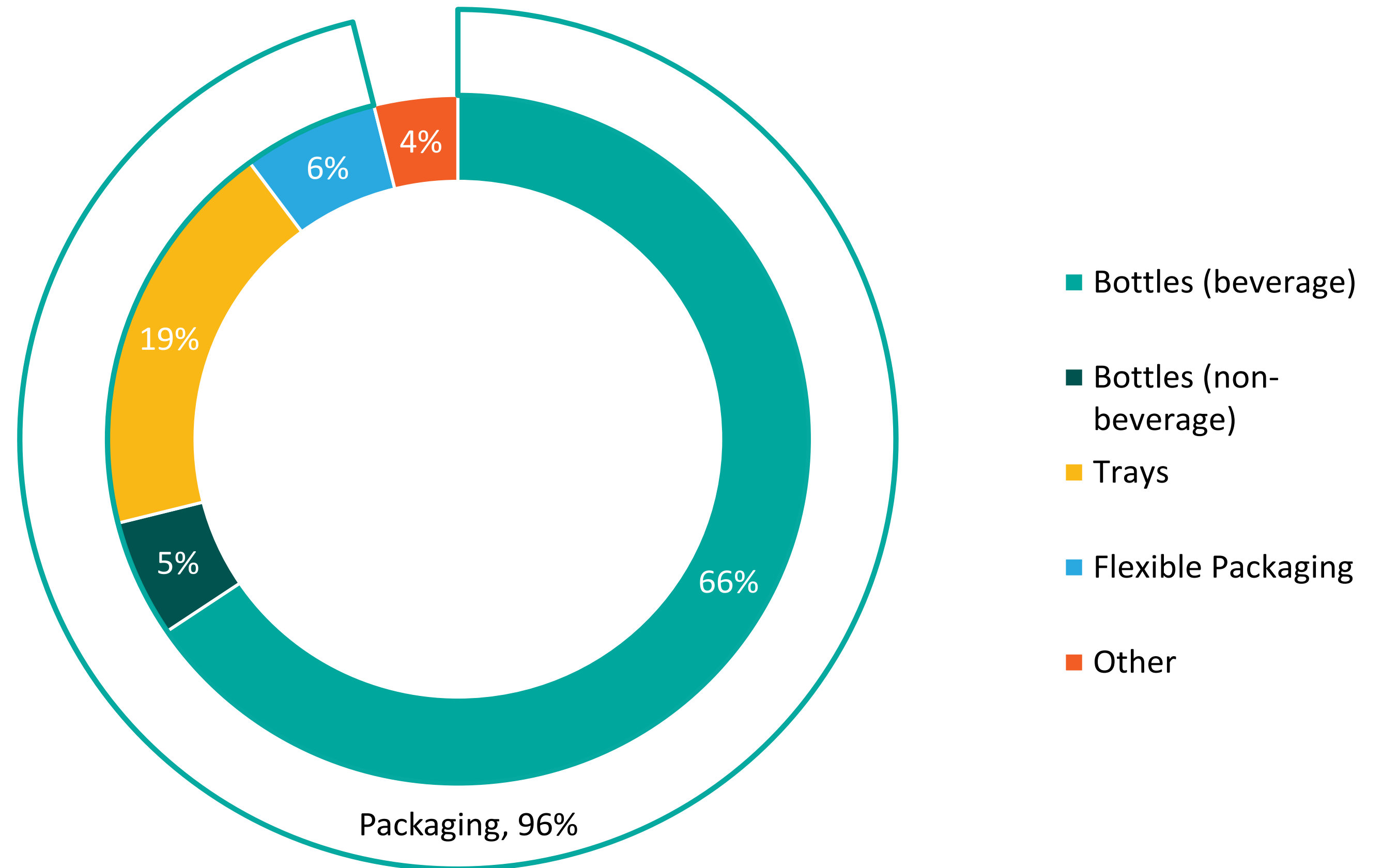


- The PET market is experiencing growth in its input volumes and corresponding utilisation since 2014.
- The SUPD target on recycled content will be **driving more demand (from manufacturers) towards rPET**

PET Market in Europe



- PET product applications: **beverage bottles constitute the largest market use for PET (66%)**
- SUPD measures target beverage bottles: a significant impact on the PET market in the EU for the next years



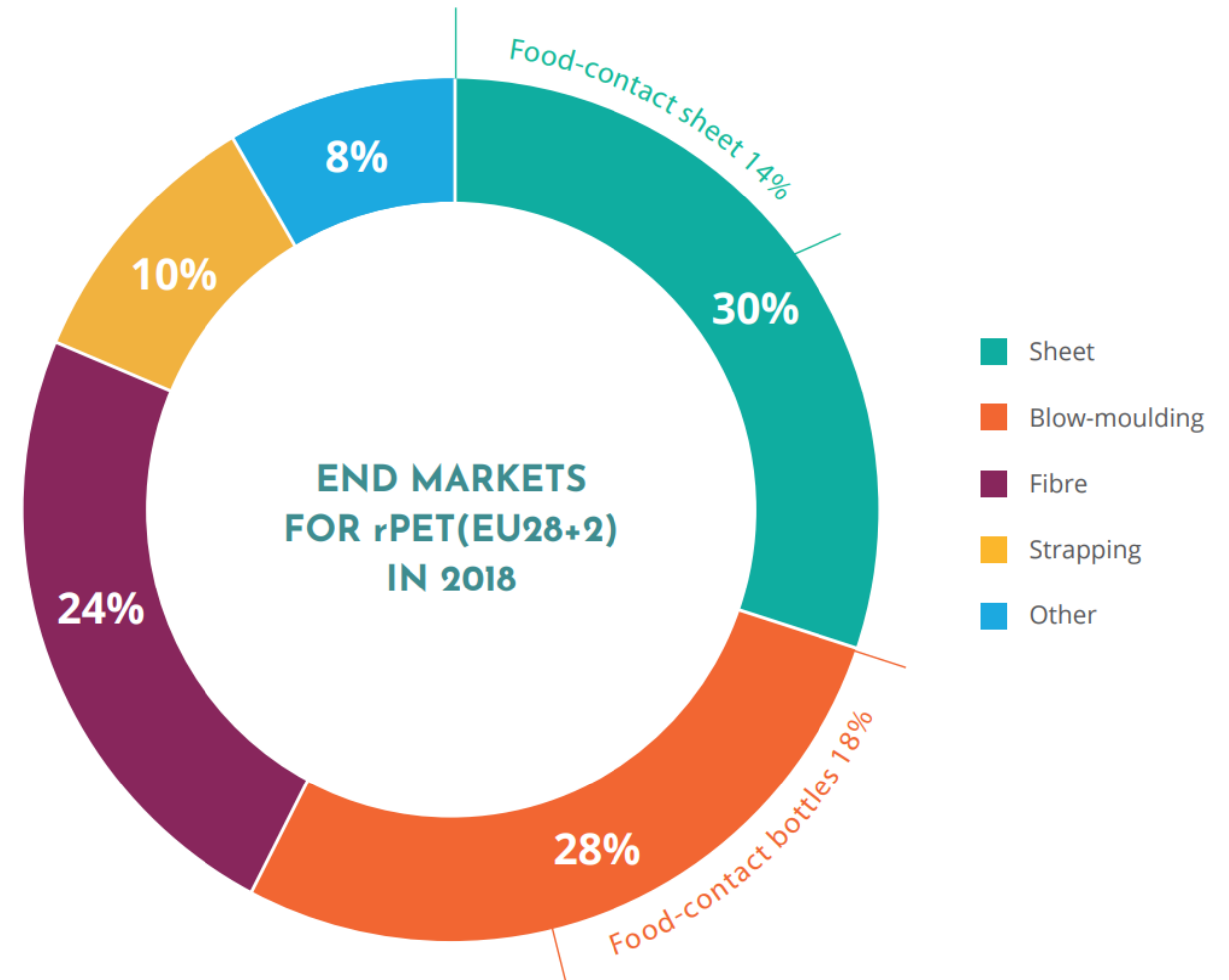
rPET Market in Europe

In 2018:

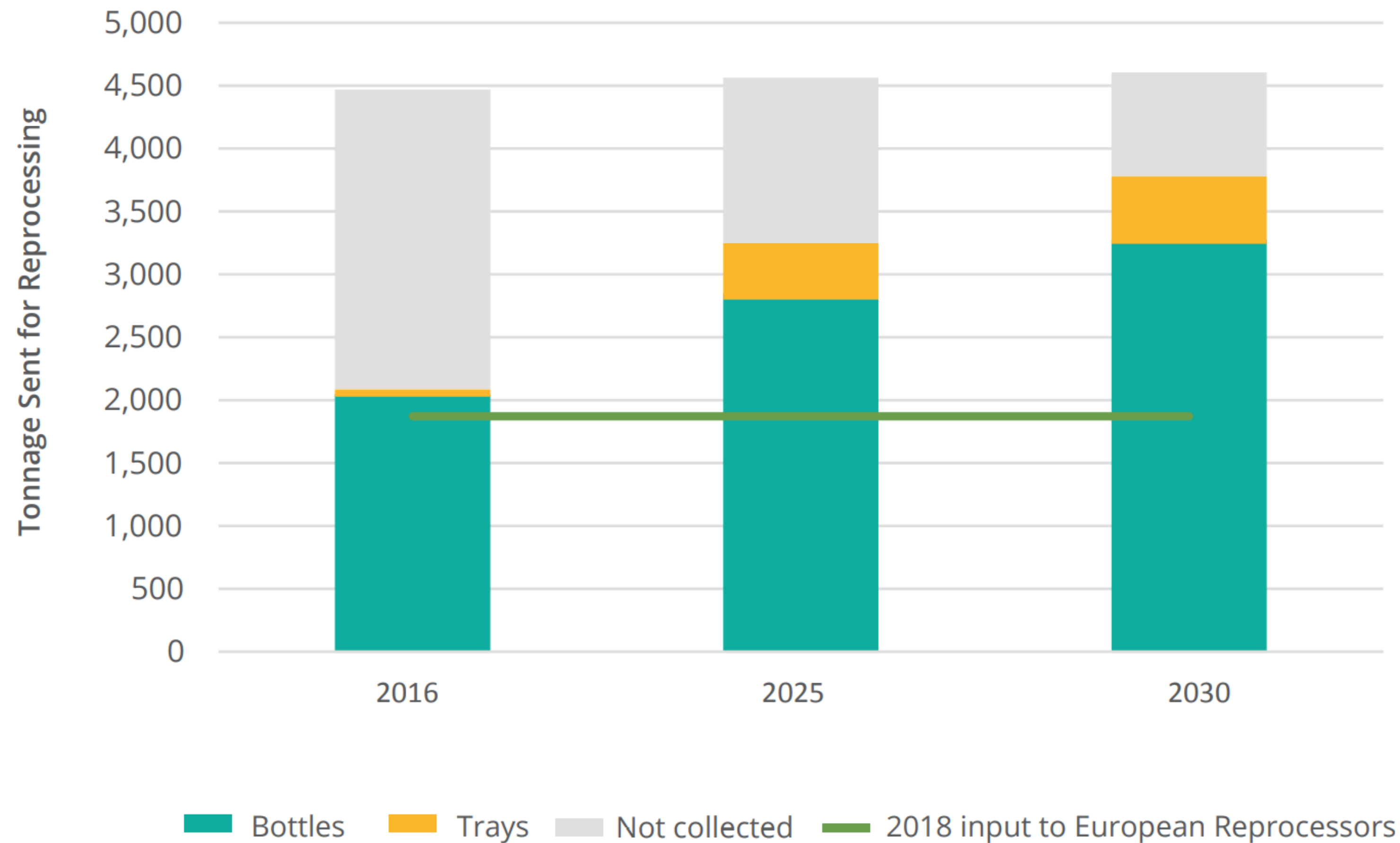
- 52% of PET bottles were collected for recycling
- 35% of bottles are collected via DRS
- Collection of trays is expected increase

Legislation plays a key role in increasing recycling capacities (SUPD collection & recycled content targets for PET beverage bottles)

- 3.6MT of PET sent for recycling is needed to achieve the 30% recycled content target
- rPET could reach as much as 55% of total PET demand by 2030 (compared to 24% of today)



rPET Market in Europe



- Bottle-to-bottle recycling to grow
- Less rPET going to sheets and more to bottles
- Tray-to-tray recycling to grow (apart from Netherlands, also in France and Belgium)

How to achieve the SUPD targets?



- The SUPD new measures will have a significant effect on the plastics recycling industry
- **New developments are required in order to achieve such targets:**
 - On recycled content: actions on design for recycling and traceability of recyclates
 - On separate collection: actions on recyclability and traceability of plastics waste

→ Low collection & missing feedstock: more collection needed to enable the achievement of set targets

→ Lack of harmonization: standards on the input & output needed for a stable, quality supply

→ Low availability & high demand of rPET lead to high prices

→ Unstable uptake: 100% recycled claims are not sustainable

New legal requirements are thus necessary:

- To define **recyclability** of plastic packaging
- To improve **traceability of recycled plastics** to be accounted for recycled content in plastic packaging



Plastics Recyclers Europe initiative to increase the recyclability of plastic packaging

Recyclclass

How to achieve the SUPD targets?



RecyClass

RecyClass is an initiative of plastics recyclers on improving **design for recycling**. It consists of an online tool and a platform. The tool aims to assist, guide and provide advice on how to improve and upgrade a plastic packaging item in terms of its **recyclability**. On the other hand, the RecyClass Platform's goal is to engage with converters and brand owners who have interest in advancing the recyclability of their products. Both the tool and the platform operate under the Design for Recycling Guidelines.

www.recyclass.eu



- To help the plastic packaging value chain to **improve** the **recyclability of plastic packaging**
- To help the plastic packaging value chain to **reach** the **recycling targets**
- To **standardize** definitions on Recyclability and Design-for-Recycling guidelines with a scientific background
- To create a **value chain community** around plastic packaging recyclability



1. The product must be **made with plastic that is collected** for recycling, has market value and/or is supported by a legislatively mandated program.
2. The product must be **sorted & aggregated into defined streams** for recycling processes.
3. The product **can be processed & reclaimed/recycled** with commercial recycling processes.
4. The recycled plastic becomes a raw material that **is used in the production of new products**.

RecyClass

Members (50)





RecyClass

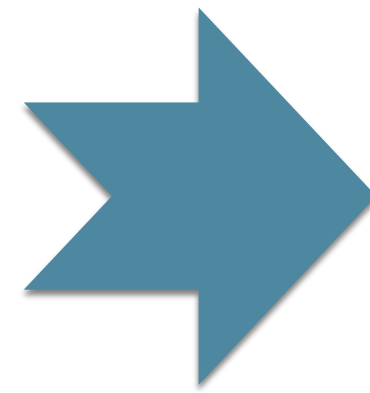
How does it work?

RecyClass

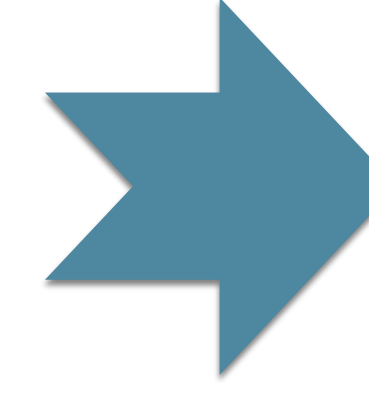
How does it work?



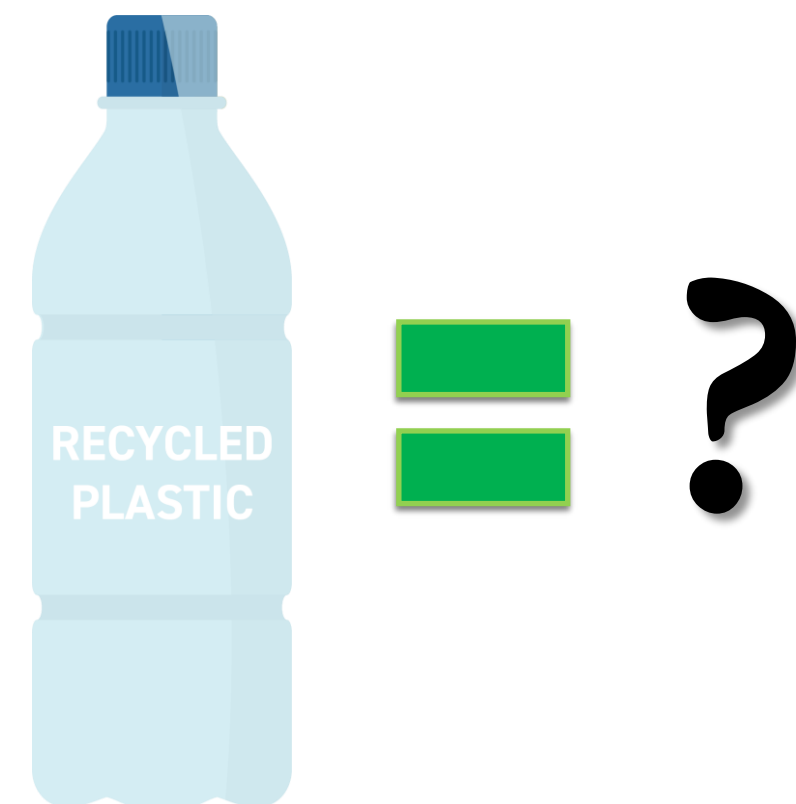
Recyclability
Evaluation
Protocols



Design for Recycling
Guidelines



RecyClass Tool



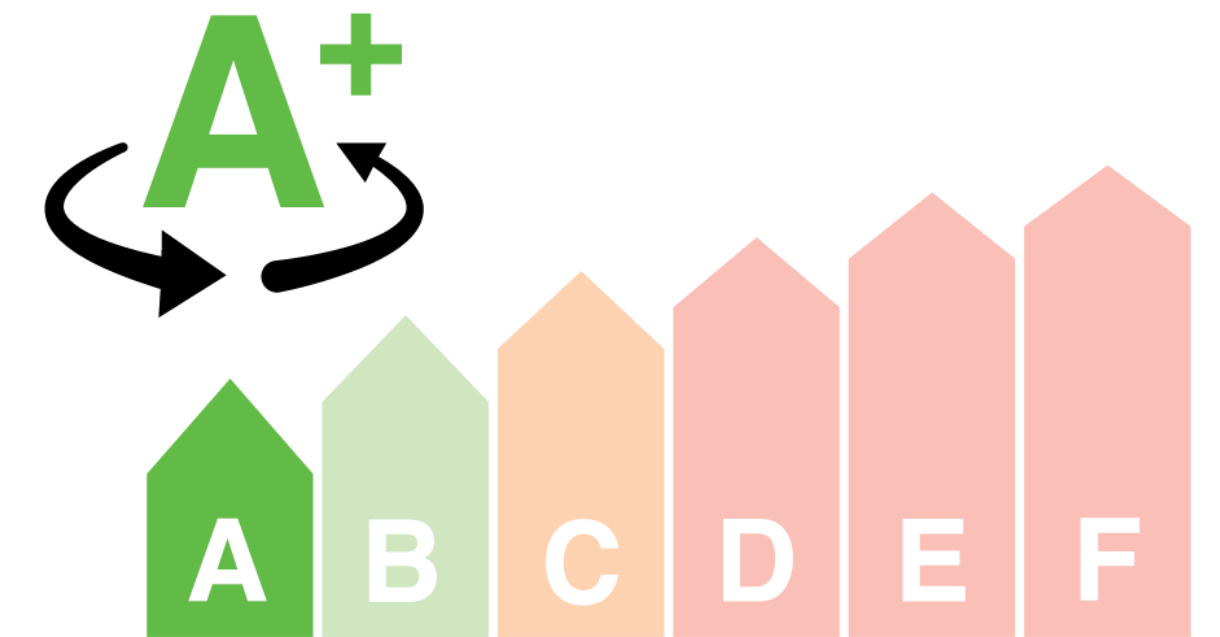
RecyClass PE TRANSPARENT FLEXIBLE FILMS for Household and Commercial Packaging

	YES - FULL COMPATIBILITY	CONDITIONAL - LIMITED COMPATIBILITY	NO - LOW COMPATIBILITY
CLASS RANKING*	A-B	B-C	D-E-F
DESCRIPTION (Test Protocol)	Materials that passed the testing protocols with no negative impact OR materials that have not been tested (yet), but are known to be acceptable in PE recycling	Materials that passed the testing protocols if certain conditions are met OR materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	Materials that failed the testing protocols OR materials that have not been tested (yet), but pose a high risk of interfering with PE recycling
MAIN MATERIAL	PE-LD, PE-LLD, PE-HD	Multilayer PE/PP	Any other polymer (ex. PET, PVC, etc.)
MATERIAL COMPOSITION	A when PE content is > 95%; B when PE content is > 90%	C when PE content is > 70%	D when PE content is > 50%; E when PE content is > 30%; F when PE content is < 30%
COLOURS	Unpigmented; transparent	Light colours; translucent colours	Dark colours; black; carbon black
SIZE	> A4 or > 50 x 50 mm once compacted	< A4 format or between 20 x 20 and 50 x 50 mm once compacted (Sorting test)	< 20 x 20 mm
PRODUCT RESIDUES (Easy to Empty index)	A if the index is < 5%; B if the index is < 10%	C if the index is < 15%	D if the index is < 20%; E if the index is 25%; F if the index is > 25%
BARRIER	Barrier in the polymer matrix; SiOx and AlOx without additional coatings	< 5% EVOH (in polyolefinic combination film); metallized layers without coatings; Ecolam High Plus; VO+ LLDPE	> 5% EVOH (in polyolefinic combination film); barrier layer PVC, PVDC; PA; any other barrier layer; foaming agents used as expandant chemical agents; aluminium
ADDITIVES	Additives that do not increase the density higher than 0,97 g/cm ³		Bio-/oxo-/photodegradable additives Additives that do increase the density higher than 0,97 g/cm ³ (CaCO ₃ , talc, glass fibers, etc.)
CLOSURE SYSTEM	PE-LD, PE-LLD, PE-HD	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, non PO or foams with density < 1 g/cm ³
LINERS, SEALS AND VALVES	PE-LD, PE-LLD, PE-HD	PP, removable aluminium liddings	Metal, aluminium, PVC, PET, PETG, PS, PLA, foiled paper, non PO or foams with density < 1 g/cm ³
LABELS	PE	PP, paper labels without fiberos	Metallized labels, any other; paper labels with fiberos
ADHESIVES FOR LABELS	Water soluble or water-releasable at less than 60°C		Adhesives non-soluble in water or non-releasable in water at less than 60°C
INKS	No inks	Non-toxic (according to EUPA guidelines)	Inks that bleed; Toxic or hazardous inks.
DIRECT PRINTING	Laser marked print; Printed production or expiry date	Printing covering < 50%**	Printing covering > 50%**
OTHER ATTACHMENTS	PE-LD, PE-LLD, PE-HD	PP	Metal, aluminium, PVC, PET, PETG, PS, PLA, paper, foams with density < 1 g/cm ³
RECYCLED CONTENT			

No change in the recyclability assessment. A separate 'Recycled Content Traceability Certification' based on a Chain of Custody approach is available with RecyClass

* Class ranking resulting from the RecyClass assessment. B class is reported two times because of the 90-95% amount of PE in the packaging or because of slight incompatibilities in the design.
** temporary solution

Last update - February 2021



- **Lab testing** of innovative plastic packaging vs control material
- Comparison of properties
- **Technology/Product Approval**

- Design for Recycling (DfR) Guidelines transposed in the tool
- Assessing **overall recyclability** of a finished package

- Recyclability Self-Assessment
- RecyClass Team support
- **Recyclability Certification**

RecyClass

What is the RecyClass online-tool?

- Ranks the recyclability of a plastic packaging
- Evaluates packaging recyclability given the existing recycling streams.
- Gives precise indications on critical points to be improved.



It is based on 5 question areas:

- General questions (packaging composition)
- Compatibility (DfR Guidelines)
- Recycled plastics content
- Easy-to-empty / Easy-to-access index
- REACH compliance



RECYCLABILITY CLASSES



CLASS A

The packaging does not pose any recyclability issues and the recycled plastics can potentially feed a closed-loop scheme to be used in the same quality application.



CLASS B

The packaging has some minor recyclability issues that slightly affect the quality of the recycled plastic generated. However, majority of recycled plastics from this packaging can still potentially feed a closed loop.



CLASS C

The packaging presents some recyclability issues that affect the quality of the recycled plastics or lead to material losses during recycling. In the first case the recycled plastic could be used in a cascade open-loop scheme, whereas in the latter case the plastic could potentially feed a closed loop scheme.



CLASS D

The packaging has significant design issues that highly affect its recyclability or imply large material losses. In both cases the recycled plastic can only be fed into low-value applications (i.e. the packaging will be downcycled).



CLASS E

The packaging has major design issues that jeopardize its recyclability or imply severe material losses. The packaging is not considered recyclable and can only be used in incineration with energy recovery.



CLASS F

The package is not recyclable at all, either because of fundamental design issues or a lack of specific infrastructure for collection, sorting and recycling in EU28+2.



RecyClass

Recycled Content Traceability Certification

Recycled Content Traceability Certification

The Basics

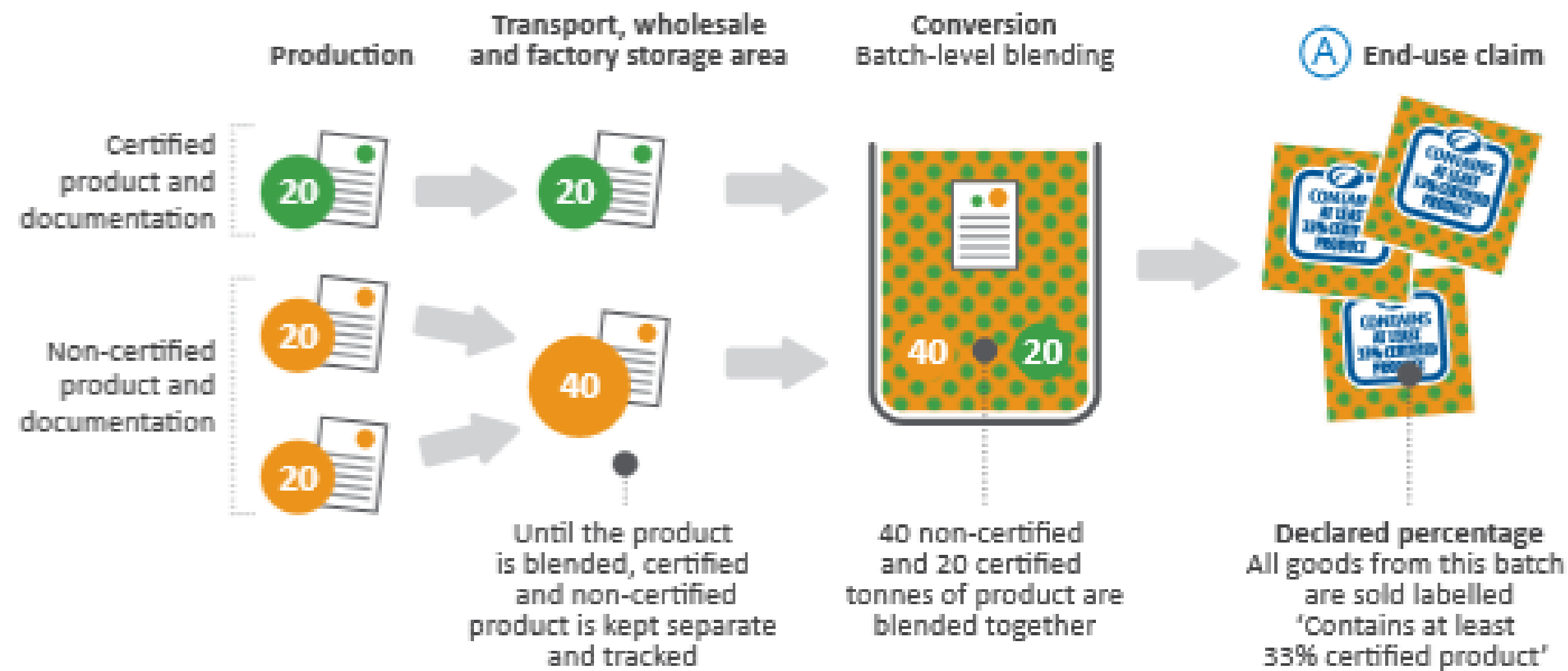


- Certification focuses on the **traceability evaluation of recycled material flows** in a site producing products with recycled content.
- An **independent Certification Body** verifies the traceability of recycled content and the calculation of pre-consumer and post-consumer share in products. This is usually part of a broader value chain. Certificate validity is 1 year.
- The Audit Scheme was developed according to a **controlled blending model** as described in **ISO 22095 Chain of Custody** – General terminology and models and **EN 15343:2007 Plastics recycling traceability and assessment of Conformity and Recycled Content**.

RecyClass

Recycled Content Traceability Certification

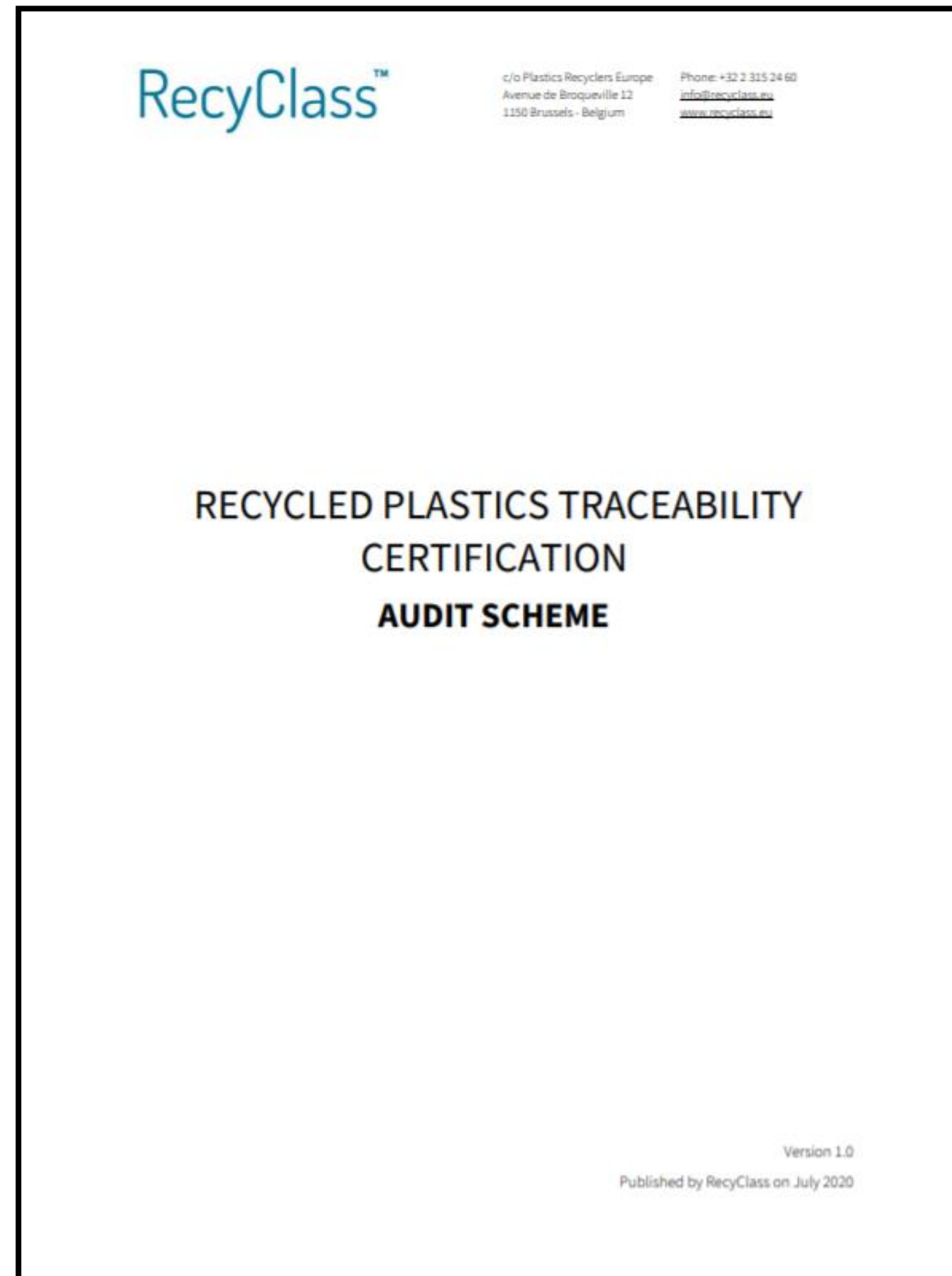
Recycled Content Calculation - Controlled blending



Source: ISEAL Chain of Custody Models

- Recycled content shall be **expressed as percentage** of the total weight of a product or component and **must reflect the real percentage of recycled content** (pre-consumer and post-consumer), following ISO 22095.
- The **calculation of recycled content** can be assigned to a given product or a group of products within the same family (products using the same recipe).
- The **calculation shall consider the plastic weight of the product or component**.

Recycled Content Traceability Certification Audit Scheme



- The **Audit Scheme** was published in July 2020.
- **Procedures & Quality Management Systems**, as well as **Auditors Guidance** were published in October 2020.
- Documents were developed by experts on traceability, converters and brand owners.
- **Trial audits were carried out with converters and brand owners** to test the configuration and fitness of the Certification requirements.
- **15+ Certification Bodies around Europe are recognised** to perform the audit. Two trainings for auditors took place in November and February 2021.
- Documentation available at www.recyclclass.eu

How to have reliable claims of recycled plastics?



- **Challenges and risks that RecyClass tackles:**

- **Free allocation of recycled content:** Recycled content calculation must refer to real percentages, not credit systems between products, production lines, plants, etc.
- **Self-declaration of origin of waste:** Downstream users declaring origin of material must not be permitted. Origin of the waste must be verified in case of Certification.

RecyClass

**Thank you for your
attention!**



Chaim Waibel
Advocacy Advisor
Plastics Recyclers Europe (PRE)
chaim.waibel@plasticsrecyclers.eu
+32 (0)49 28 22 954
+39 340 466 31 13