

# **Naar een hogere recycling van plastic verpakkingen in het PMD scenario**

Uitdagingen, aanpak van de industrie en praktische tips

An Vossen – Executive Manager

# Part I: Introduction

# What is PLAREBEL

- PLAREBEL is a non-profit organisation founded on 22/11/1999 to promote the recycling of plastic waste.
- Its members represent the entire plastics industry supply chain:
  - Producers (Petcore, Borealis, Total,...)
  - Converters (Plastipak, essenscia, Petcore...)
  - Users (Danone, Detic, FIEB, Fevia,...)
- President: Herman Van Roost
- Executive Manager: An Vossen



# Plarebel, partner of Fost Plus

- PLAREBEL is a partner of Fost Plus (ie. Belgian Green Dot organisation), acting as a centre of expertise with regard to the organisation of the collection and sorting, the recycling of household plastic packaging waste in Belgium; thus contributing to an efficient implementation of the recycling activities in Belgium.
  - **Competence centre.** Plarebel accumulates and develops knowledge and expertise on the collection, sorting, and recycling of plastic packaging and packaging waste. They monitor technological developments in packaging and recycling, maintain contacts with existing and potential recyclers, and study the recyclability of new packaging.
  - **Monitoring.** Plarebel carries out administrative and operational checks in the field. They visit sorting centres and recyclers to ensure the recycling quality that Fost Plus guarantees. In case of complaints about quality, they provide Fost Plus with expert advice.



# Plarebel, member of EPRO

- Plarebel is an active member of EPRO, European Association of Plastics Recycling and Recovery Organisations.



- EPRO and its working groups provide a **unique forum for the leading specialists in plastics waste management** in Europe to exchange information on technological projects, new technologies, improving quality, etc. about plastic recycling throughout Europe.
- **Aim:** To exchange experiences and thus optimise national effectiveness through international co-operation.



# Part II: Context

# Plastic: How it changed the world

- Plastics are **everywhere**, and form an integral part in every single aspect of our daily life !
- Plastics represent a **whole family of versatile materials** for the production of tailor-made products in many different sectors; in construction, automotive, electrical and electronics, textile, packaging, furniture, sports, recreation, etc.
- Plastics are distinguished by a combination of particularly favorable properties, which can be **tailor-made** to improve its performance according to the product requirements (soft/hard, tough/fragile; transparent/opaque, etc.).
- Plastics already make a significant contribution to using energy more efficiently, conserving resources and **reducing CO<sub>2</sub> emissions** at each step of production.
- Plastics also have an enormous potential to contribute toward the sustainable transition towards a **circular economy**.



# War on plastic...

**Shocking Video Shows Dead Whale Found With 80 Plastic Bags in His Stomach**



**Green turtle becomes latest victim of plastic rubbish epidemic**



**Microplastics in our mussels: the sea is feeding human garbage back to us**



**Our Planet Is Tangled In Plastic**

**Med tourists leave 'toxic legacy' of plastic pollution**



**It's Official, Plastic Pollution Has Now Reached Our Last Unspoilt Wilderness**



**Our plastic pollution crisis is too big for recycling to fix**

**Microplastics in our seas now outnumber stars in our galaxy**



# Time to reflect...



# A vision for a circular plastics economy

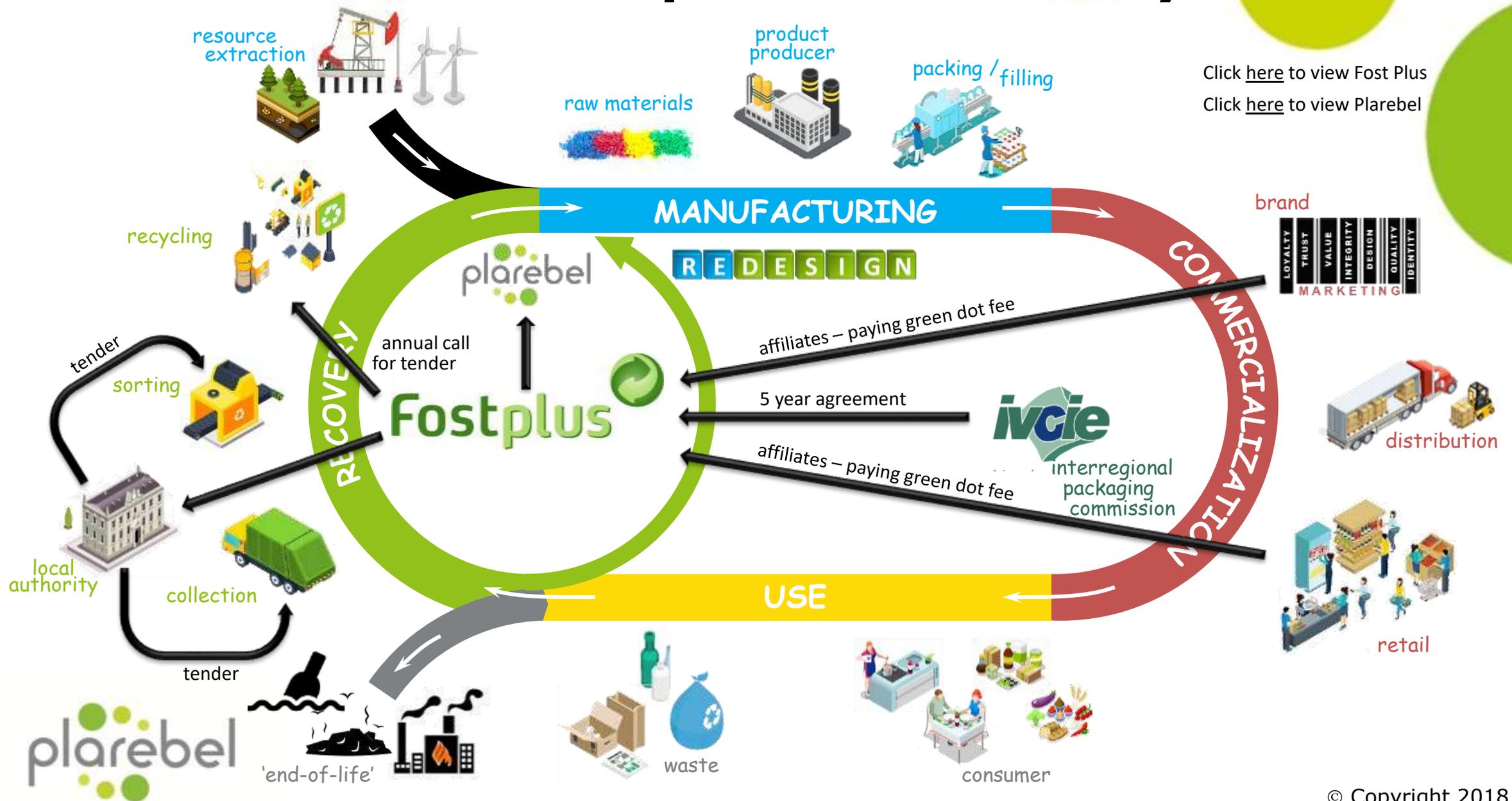
linear economy...



today's recycling society...



# A vision for a circular plastics economy



Click [here](#) to view Fost Plus  
 Click [here](#) to view Plarebel



# A vision for a circular plastics economy

- The circular economy will retain the value of the resources we use in products, returning them into the product cycle at the end of their use.
- Plastics can be circular too !!!!  
This requires:
  - Improve, grow and explore potential recycling opportunities
  - Strengthening research and development of new technologies
  - Smarter design of products to enable reuse, repair, and recycling
  - Guaranteeing security of supply of high quality recyclates, boosting the use of recycled content
  - Structural actions from all players in the plastic value chain



# A vision for a circular plastics economy

- Transitioning to a circular economy is not something you can achieve on your own...
- Circular economy offers companies unprecedented opportunities for partnerships and open cooperation between various actors in the value chain in order to find creative solutions.
- There is also a need to raise awareness and communicate about the initiatives to all stakeholders, to clients, to suppliers, to employees, to consumers, etc. in order to educate people about the circular economy concept and to engage them to take actions in this area.

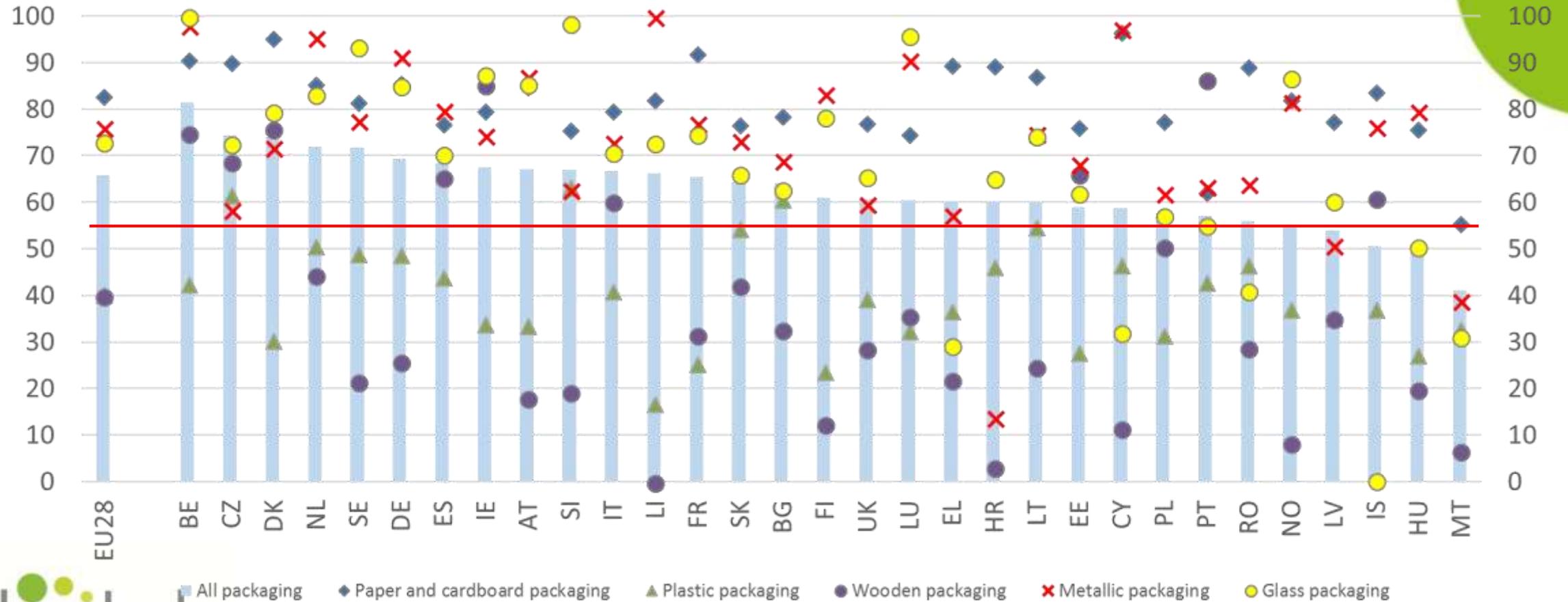




**Part III:  
Extending the collection of PMD  
to all plastic packaging**

# Recycling rates for packaging waste in the EU-28

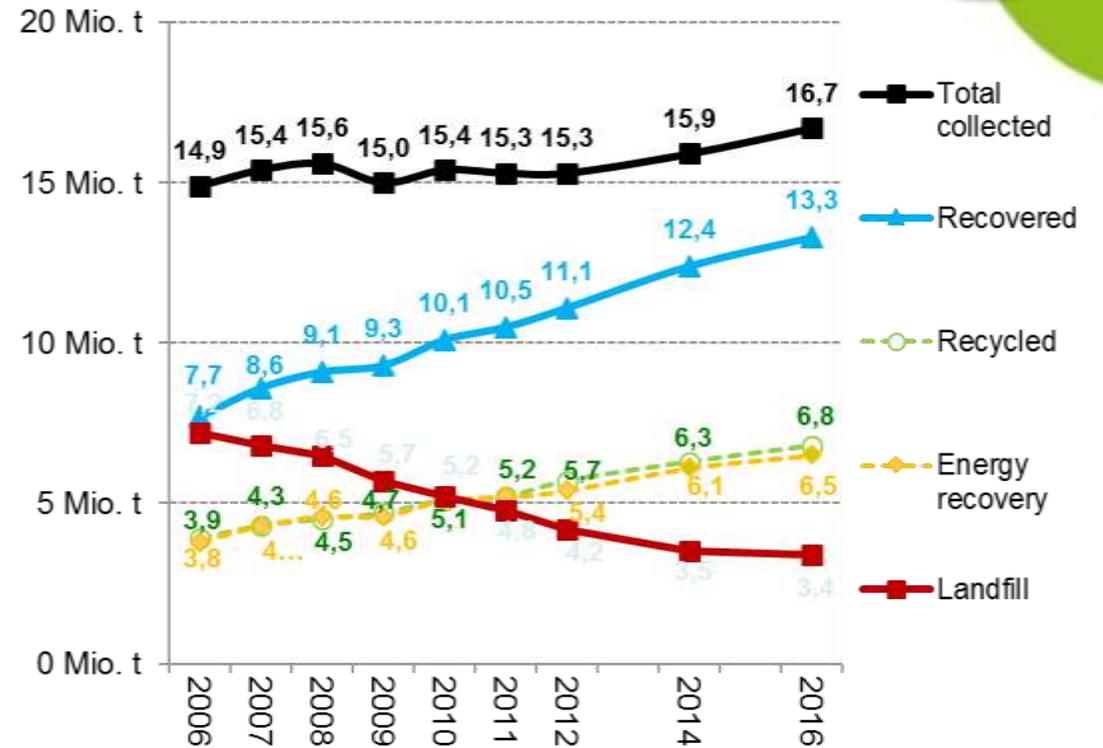
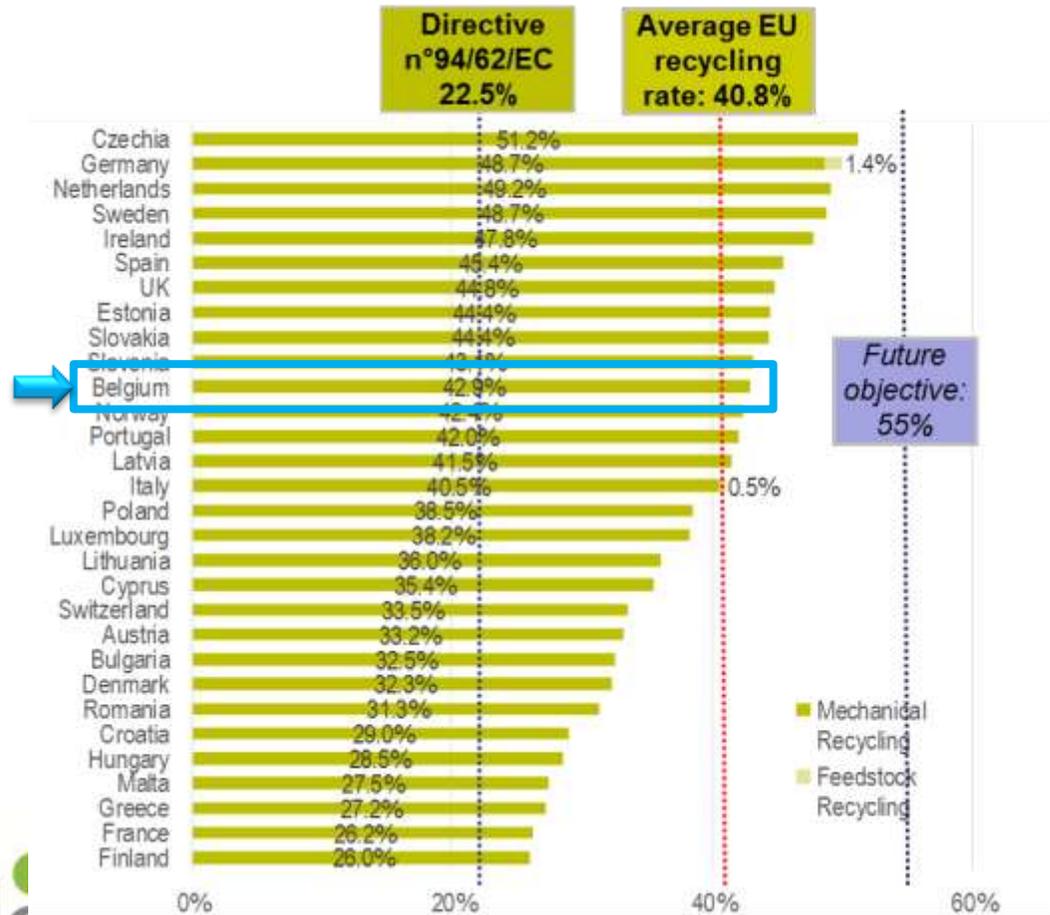
Source: Eurostat (env\_wastpac) – Data 2015, Data for Cyprus and Malta relate to 2014



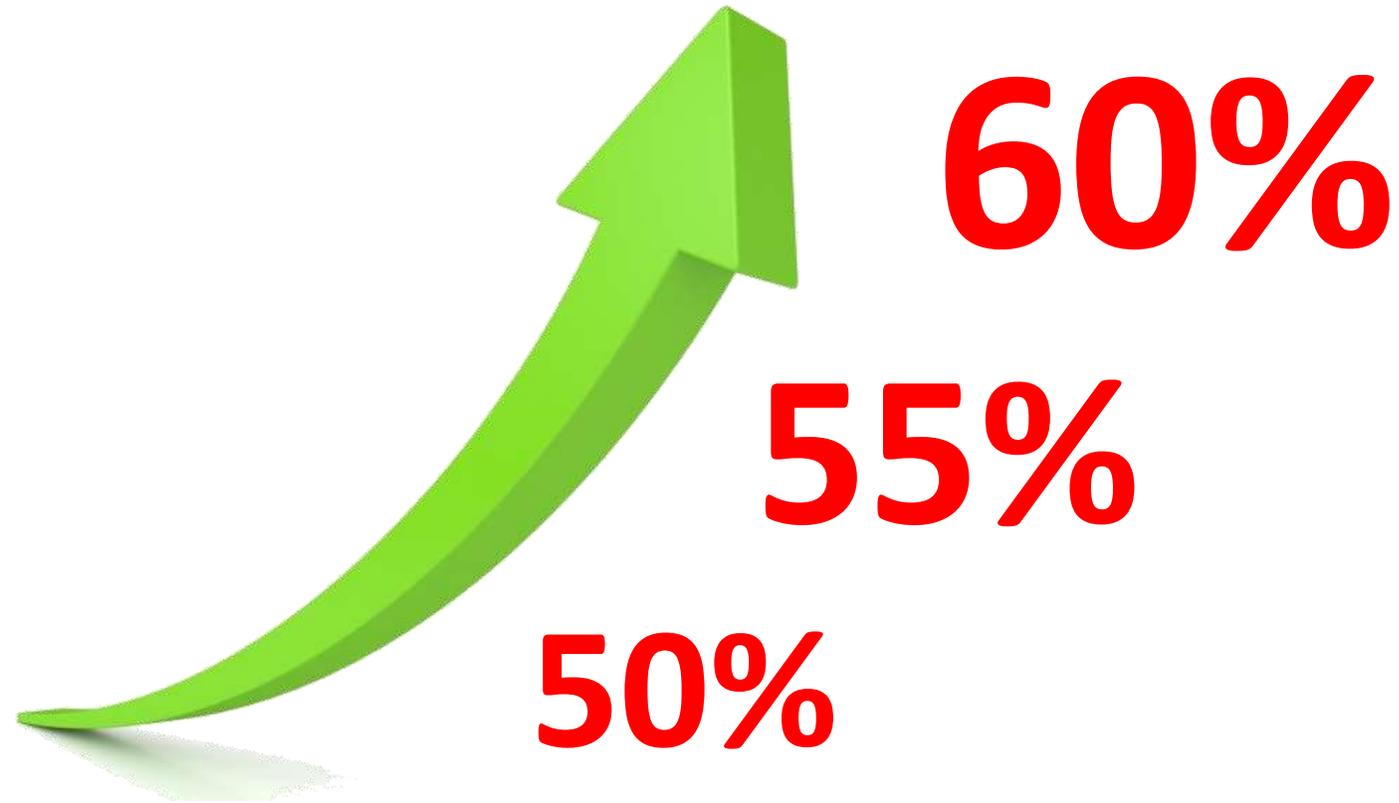
# Focusing on plastic packaging

Source: PlasticsEurope „Plastics, the Facts 2017“ & Conversio Market & Strategy GmbH

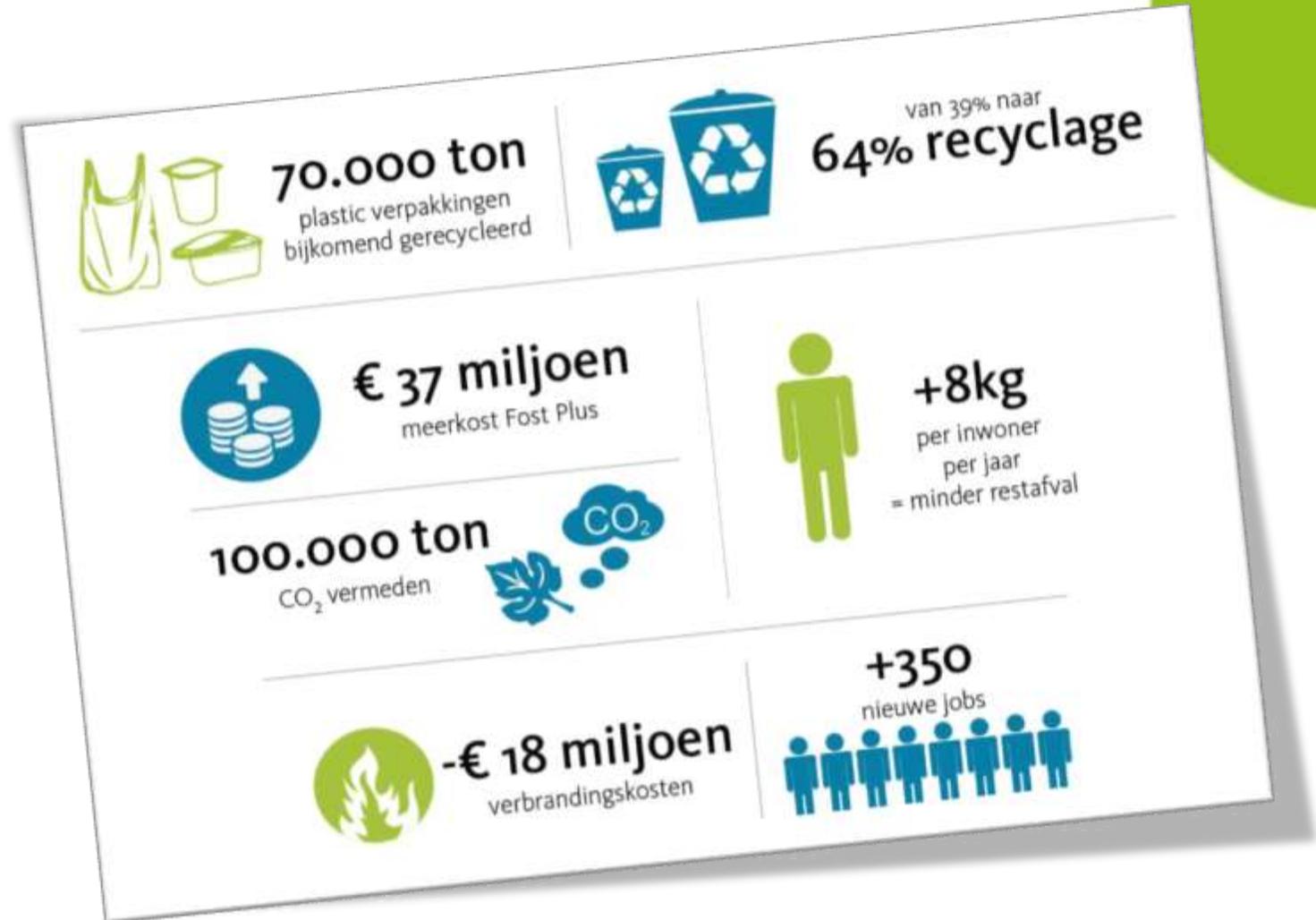
Collected post-consumer plastic packaging waste in 2016 (EU28+NO/CH)  
**16,7** m t



# Europe accelerates towards circular economy



# Fost Plus - The new blue PMD bag (BE)





# **Part III: Starting a plastic recycling revolution**

# Recycling challenge

YES

MAYBE



NO

DON'T  
KNOW

# Recycling challenge



- 1** Participating in a collection system  
(engaging consumer, local authorities, EPR...)
- 2** Sorted in high quality stream  
(infrastructure, technology,...)
- 3** Technically recycled in commercial plant  
(infrastructure, process, quality,...)
- 4** Recyclate is used to produce new product  
(end market, quality, volume, price,...)

# Finding the pieces of the puzzle...



# Communication, education & awareness

Consumer education is a key driver to improve awareness on which plastics to recycle, why there are limitations, and evidence of how the right actions being taken by consumers can ultimately lead to more plastics collected for recycling.

Training programs for packaging designers and brand owners that are always working on developing new, innovative products and packaging, should encourage innovation in package design for recycling.



**Plastic waste can be more than what you see today!**



*from Circularity !!!*  
**Part IV:**  
**Designing for ~~Recycling~~,**  
**Designing for the Future**

**Re-think...**

**RE** D U C E  
U S E  
C Y C L E  
D E S I G N





## INNOVATION

The process of translating a new idea or invention into a good or service that creates value or for which customers will pay.



## RECYCLING

Waste minimization strategy in which reusable materials are diverted from a waste stream and processed in order to regain material for the manufacture of new products.



**MAKE  
PRODUCTS  
MORE  
CIRCULAR**





# Easy to empty



- **To rinse or not to rinse...**  
There is no need to waste water to rinse packaging waste before putting it in the recycling bin. They should however be empty. Excess liquid should be poured away (after inverting); any remaining scraps or leftover content should be scraped away.
- **Example**  
Ketchup bottles are never completely empty when arriving in the sorting / recycling facilities; even though there are many theories on how to get the last drop of ketchup out of the bottle by shaking, thumping or squeezing.

# Easy to sort



**Carbon black =  
not detectable by  
NIR sorting equipment  
(near- infrared spectostropy)**

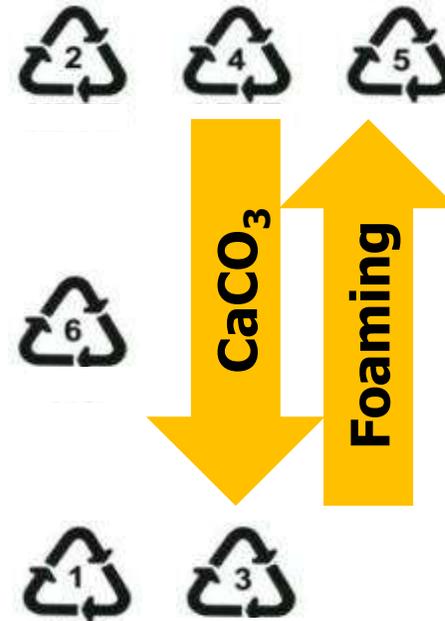
**Some white pigments are  
often difficult to  
distinguish from  
clear/natural**

# Easy to sort



- Sorting is never 100% reliable. NIR sorting equipment achieve a sorting accuracy level of 85-95%, depending on the composition of the input material, levels of contamination, belt speed, maintenance, type of plastic, etc.
- The presence of labels and sleeves should not lead to errors in identification and separation by NIR sorting units. Labels and sleeves should not cover more than 70% of the bottle surface for large packaging; and not more than 50% smaller packaging.

# Easy to separate



**Don't change  
the density**

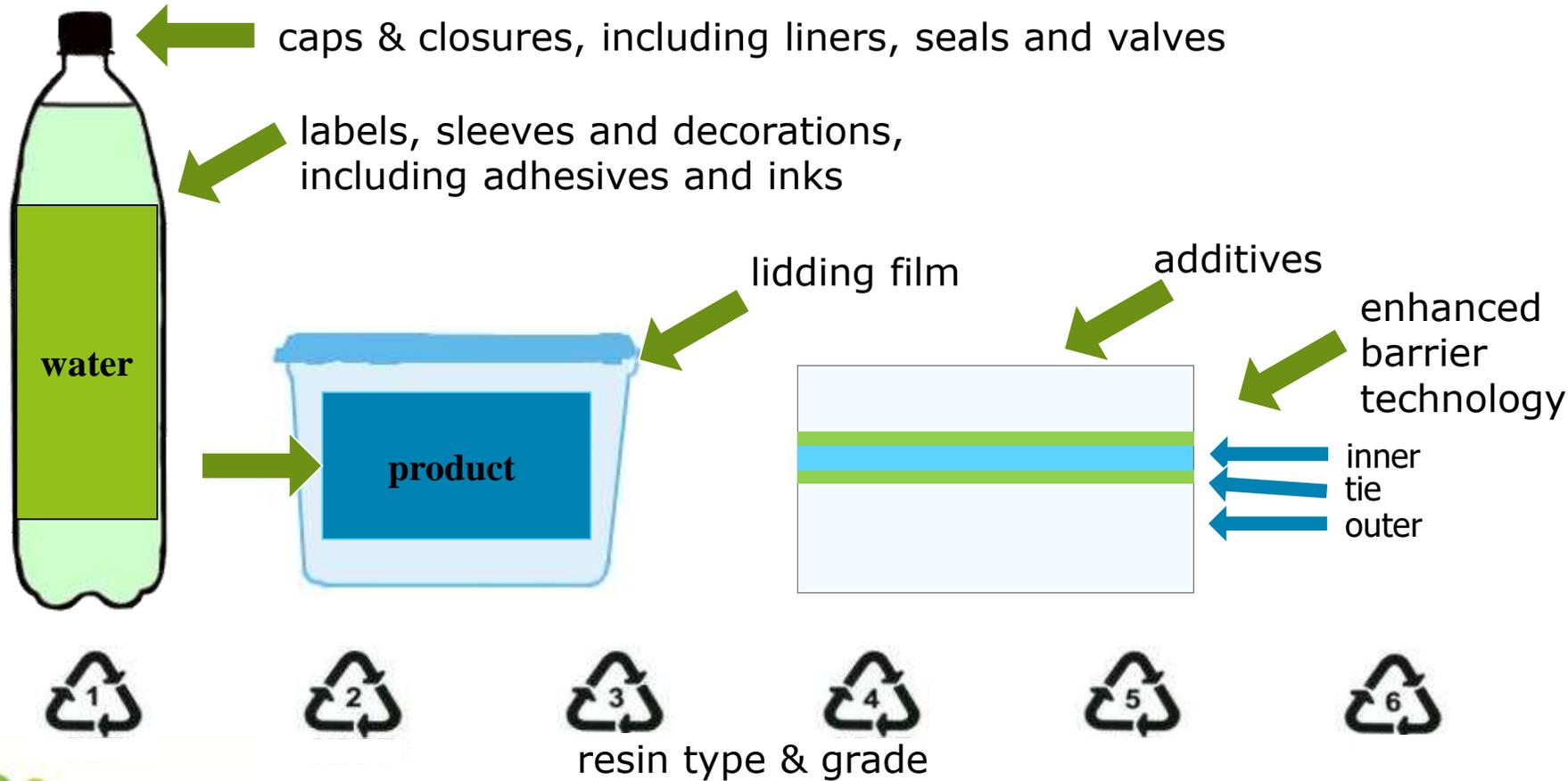


# Easy to separate



**Avoid any combination with metal or aluminium**

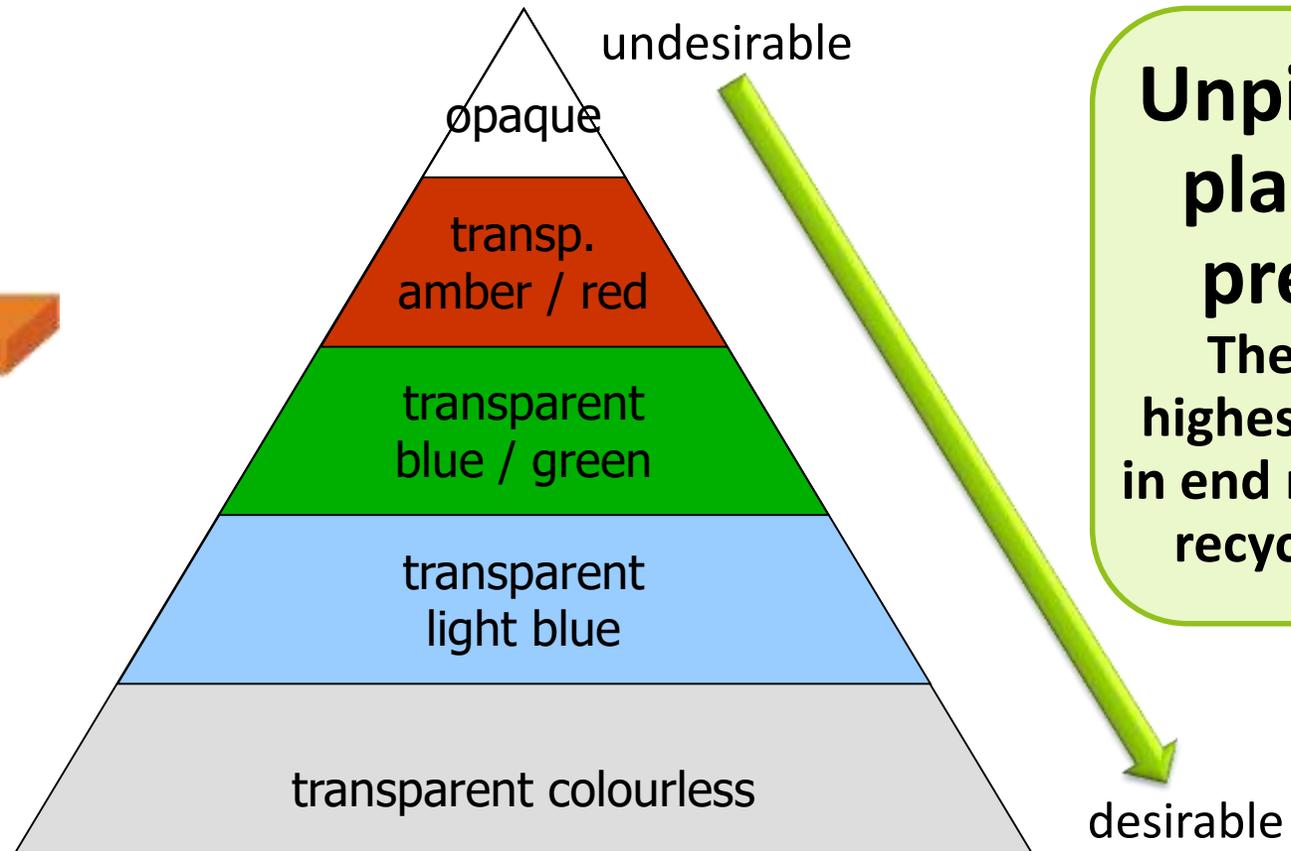
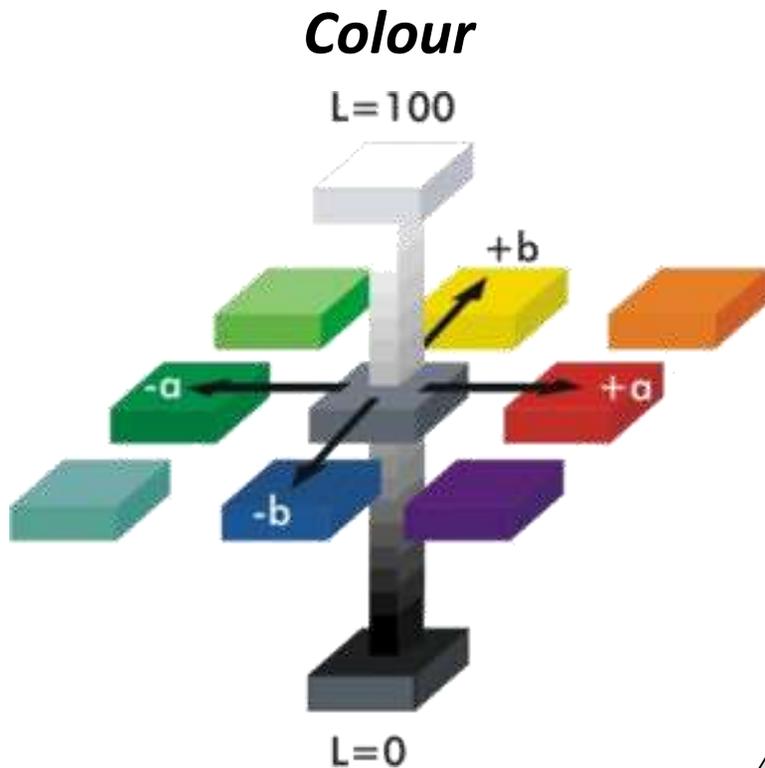
# Easy to recycle



**Use of non-compatible elements has a detrimental effect on recycling processes and on quality of recycled plastic.**



# Easy to re-use

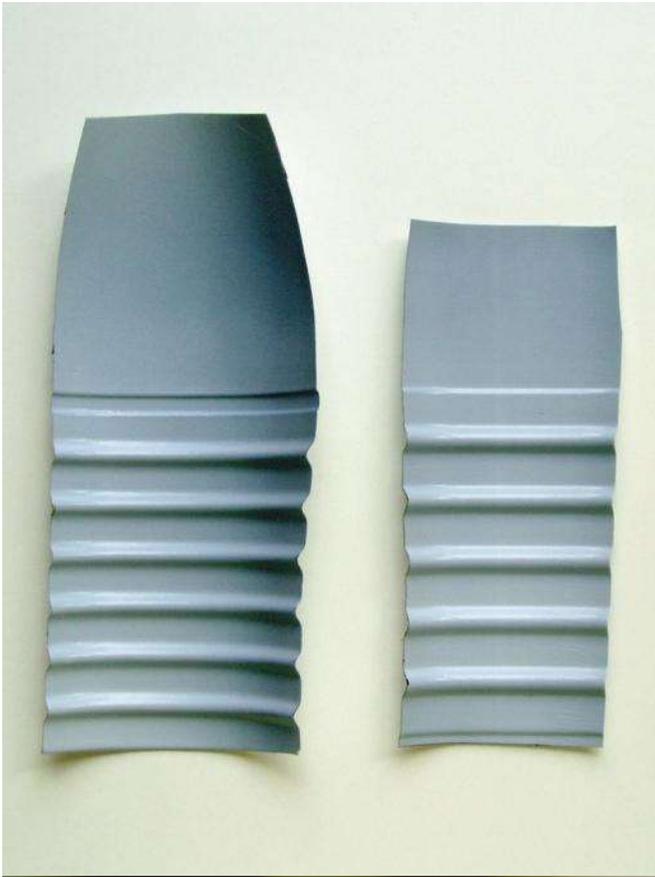


**Unpigmented plastics are preferred.**  
They offer the highest possibilities in end market for the recycled plastics.

***Example for PET bottles***



# Easy to re-use



**Colored plastics are often limited to become dark grey or black**

# Easy to re-use



There are legislative restrictions on the use of non-food plastics in the use of recycled plastics for food contact use

28.3.2008

EN

Official Journal of the European Union

L 86/9

## COMMISSION REGULATION (EC) No 282/2008 of 27 March 2008

on recycled plastic materials and articles intended to come into contact with foods and amending Regulation (EC) No 2023/2006

(Text with EEA relevance)

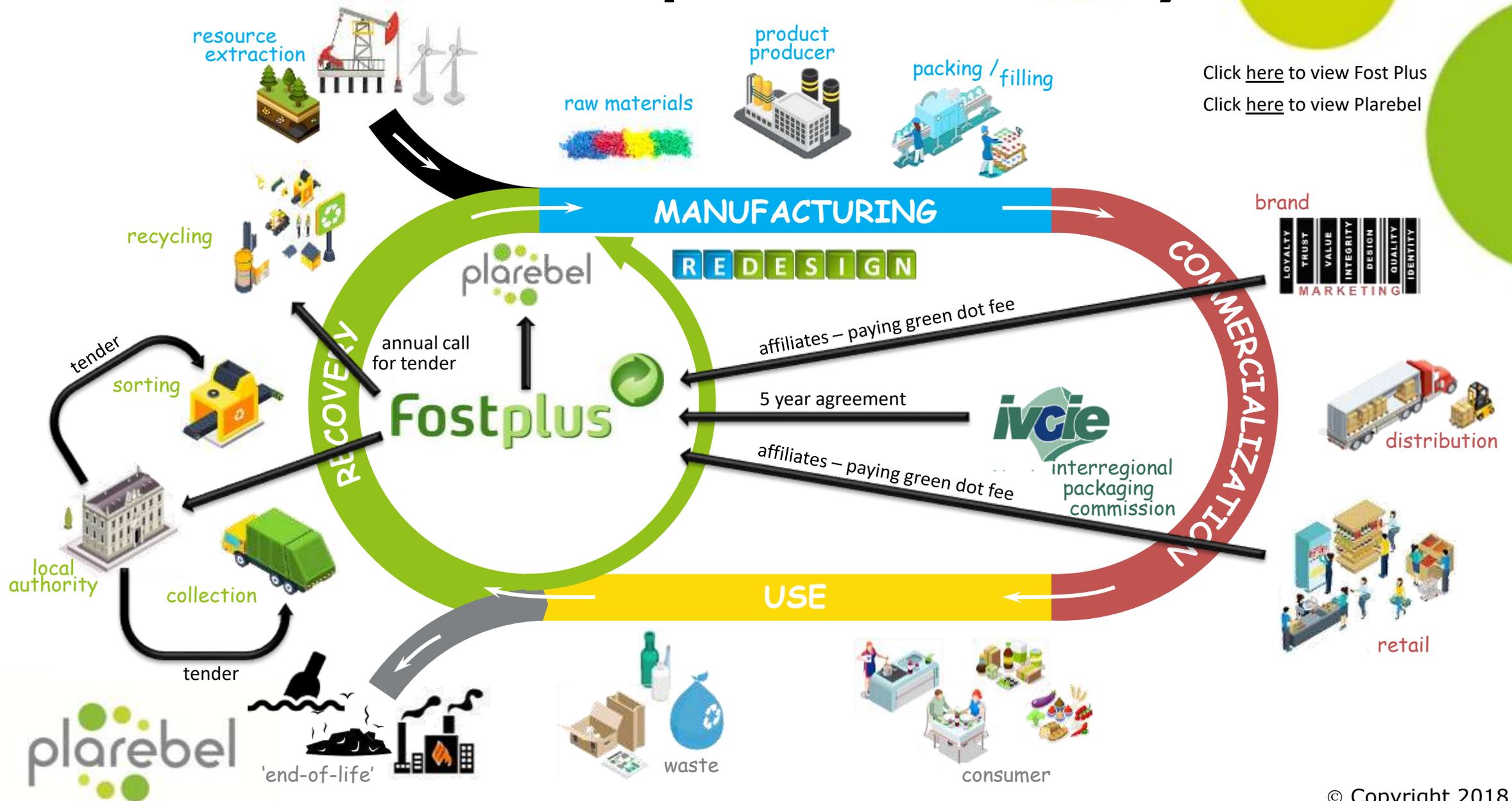
2002/72/EC lays down the list of monomers substance authorised to the exclusion of all (see list) to be used in the manufacture of plastic contact materials or articles and, therefore, plastic articles complying with the provisions in Directive 2002/72/EC should be used as recycled plastic. This can be achieved by sorting the plastic articles before recycling. For materials, such as polyolefines, due to their physical properties, 100 % sorting efficiency is necessary to ensure recycled plastic that complies with the requirements of Article 3 of Regulation (EC) No 1935/2004. This sorting efficiency can be achieved in product loops which are in a closed and controlled chain. For other materials, for example, PET the safety of the recycled plastic can be ensured with a lower sorting efficiency as regards to its former use in food contact which is realistically achievable from kerbside collection systems. The sorting efficiency necessary for each material should be identified on a case by case basis.

# Role of packaging industry

- We encourage all packaging designers, brand owners and retailers to:
  - Assess your packaging portfolio in terms of its 'recyclability'
  - Design your packaging with recycling in mind
  - Respect Design for Recycling guidelines
  - Ask your suppliers about the recyclability of their products
  - Offer training programs on collection, sorting and recycling. Also involve your marketing department.
  - If necessary, ask advice from recycling experts. This is especially important when developing new, innovative packaging solutions. And do so when they are still in the R&D phase!
  - Communication is an integral part of that challenge. So tell your customers about your recycling efforts!



# A vision for a circular plastics economy



Click [here](#) to view Fost Plus  
 Click [here](#) to view Plarebel



# **Part V: What's next ?**

# Outlook 2030



# Outlook 2030



# Contact

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