

# Extended Producer Responsibility: International Experiences

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Les Jeudis des Déchets  
Filière de Gestion des déchets plastiques ECOLEF:  
Les perspectives d'optimisation

Tunis, jeudi 22 février 2018



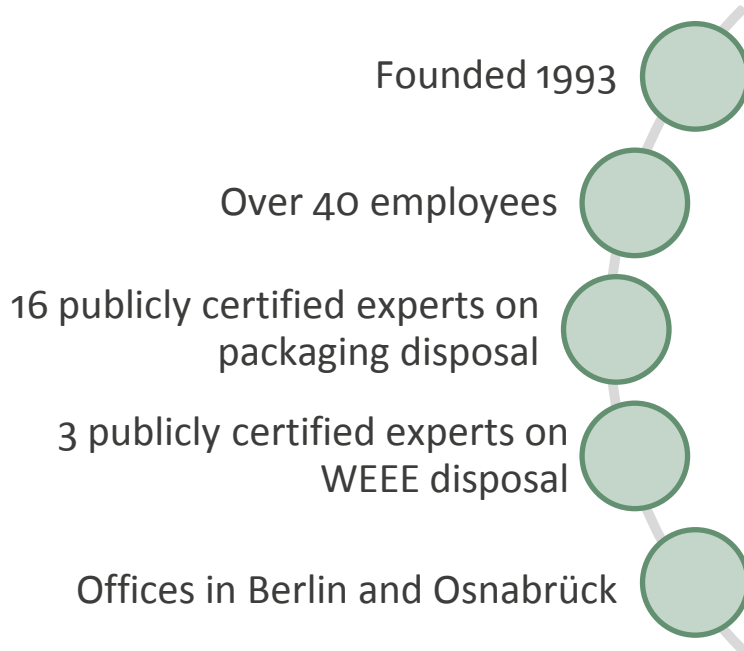


- 1 Introduction**
- 2 Main Focus „Packaging“
- 3 What does „EPR“ mean and how can „EPR“ be organized?
- 4 EPR-systems for Packaging in Europe



- One of Germany's leading waste management and material flow consulting companies
- Specialisation in strategy and policy development, auditing, compliance assurance and research
- Clients include municipal waste management authorities, private enterprises, government entities on federal and state level and industry associations

### Facts

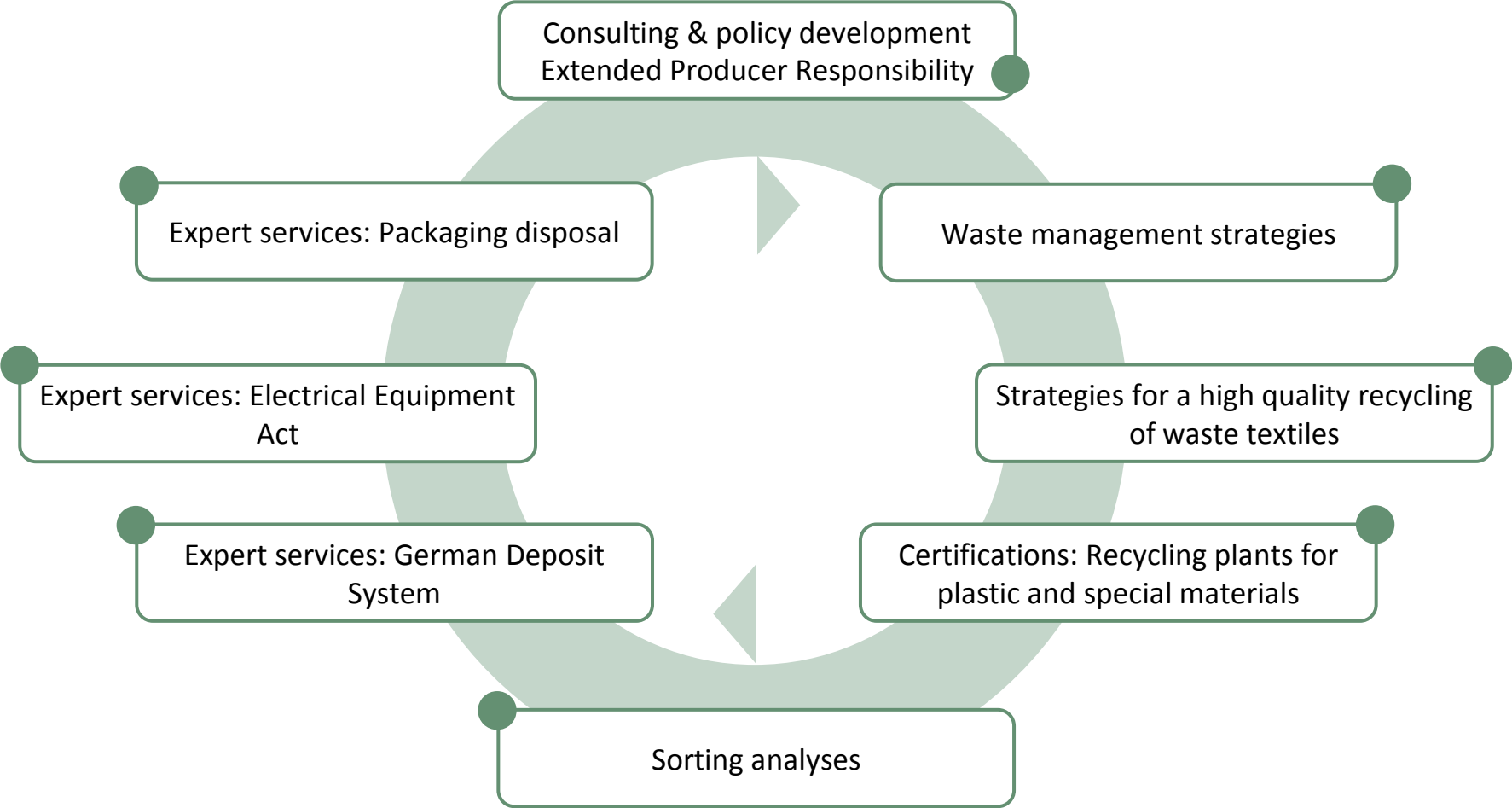


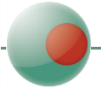
### Philosophy





cyclos is an expert and consulting company with focus on waste management and product responsibility. cyclos carries out projects worldwide on extended producer responsibility and develops strategies for waste management issues.





*Reinheit*

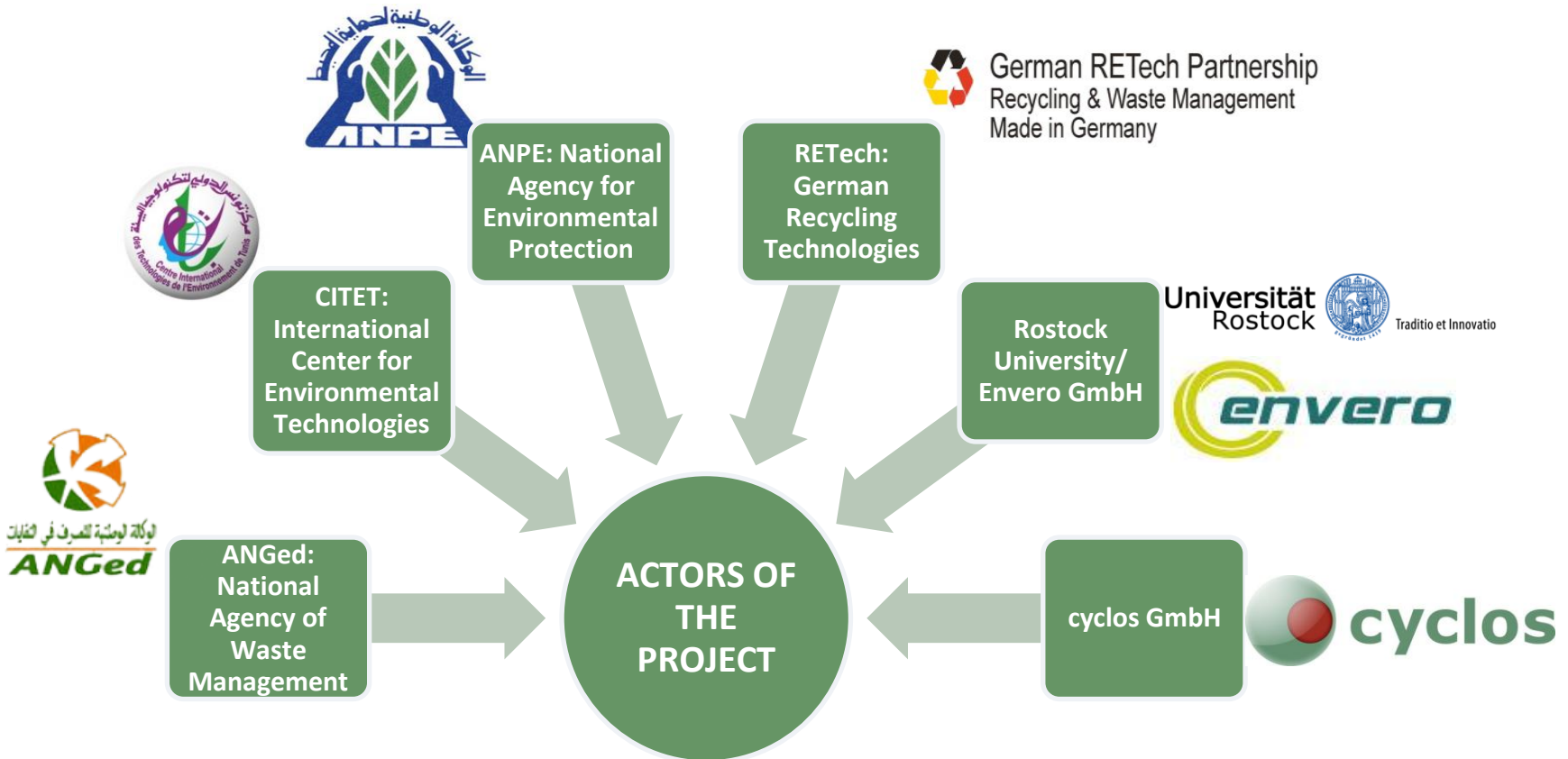
*Existenz*

*Ewigkeit*

- a spin-off of the professorship of waste and resource management at the University of Rostock
- experience in international knowledge and technology transfer in waste management in the MENA countries.



With the support of GIZ, cyclos and envero are currently working together in Tunisia on a project to set up a system for the countrywide collection and recycling of packaging waste on the basis of extended producer responsibility.





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1 Introduction

**2 Main Focus „Packaging“**

3 What does „EPR“ mean and how can „EPR“ be organised?

4 EPR-systems for Packaging in Europe

# A relevant share of the municipal waste is packaging





## A relevant share of the deposited waste is packaging



Photo: Bünemann, 09/2017

**Landfill Amman; September 2017**



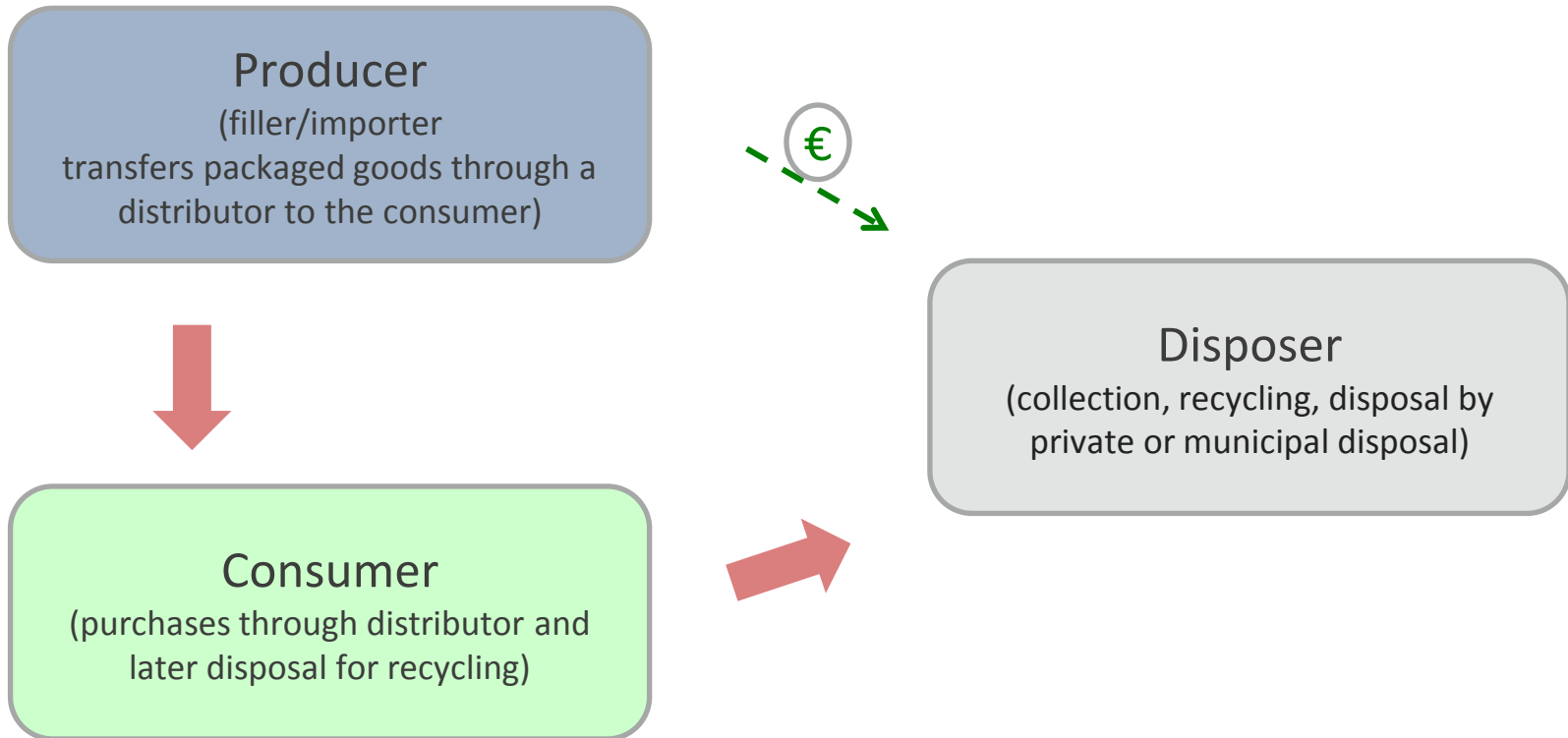
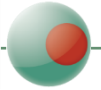
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### “EPR-System for packaging”

“EPR” stands for **E**xtended **P**roducer **R**esponsibility

- Producer’s responsibility for a product is extended to the postconsumer stage of a product’s life.
- Producers become responsible for disposal of their packaging already during production and with the sale (and export).
- Producers/importers pay a contribution for later disposal of the packaging already when their packed goods are placed on the market.
- The contribution/fee is used for collecting, recycling and disposing the packaging waste.
- This is to ensure environmentally compatible recycling and disposal after use.



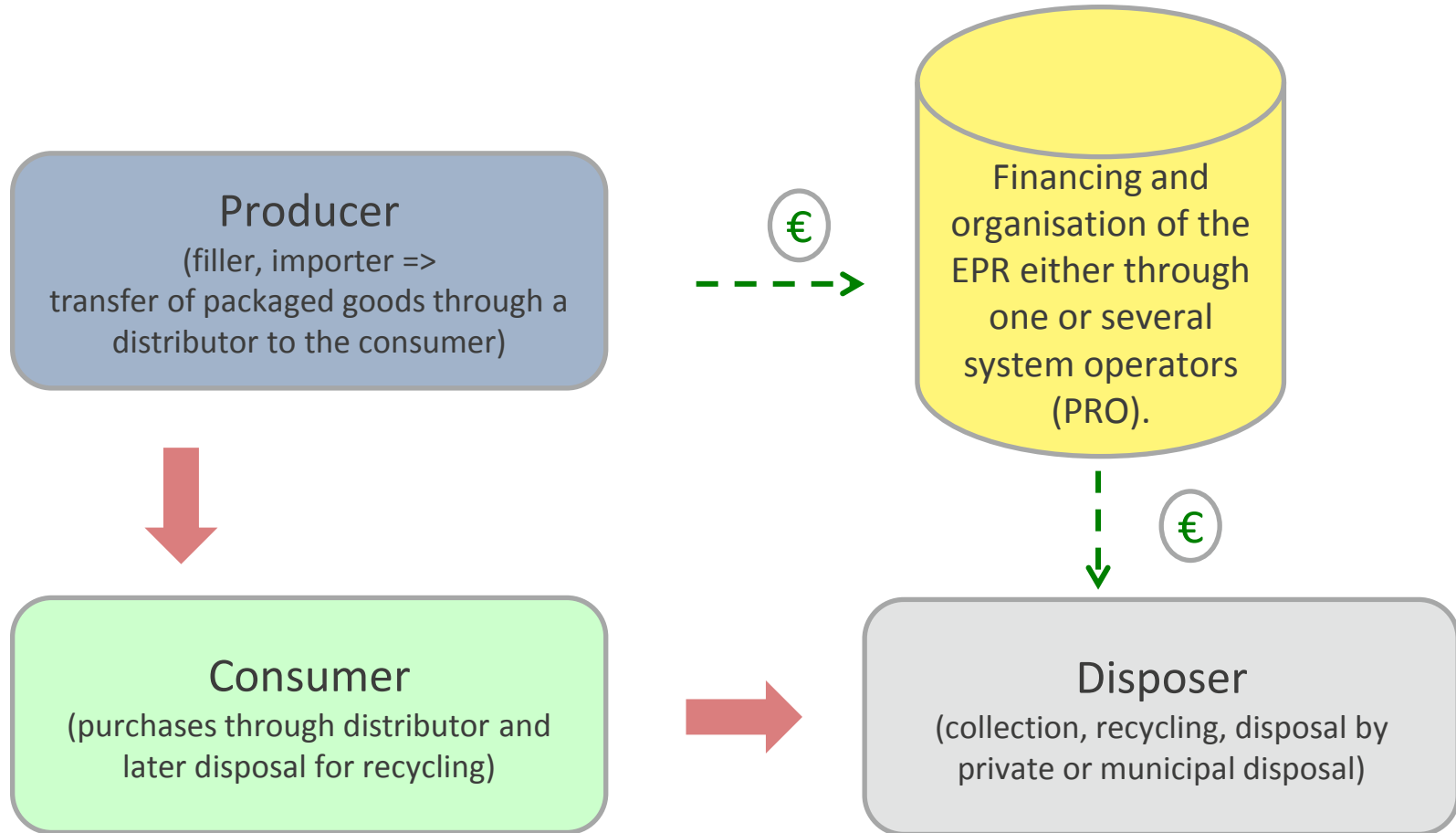
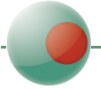
Packaging flow:



Cash flow:



# EPR – Basic principle of organisation



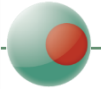
Path of packaging:



Flow of money in the system:



# Who in the supply chain is the obligated under EPR?



Producer of raw material/  
packaging material



Filler



Distributor/Wholesale



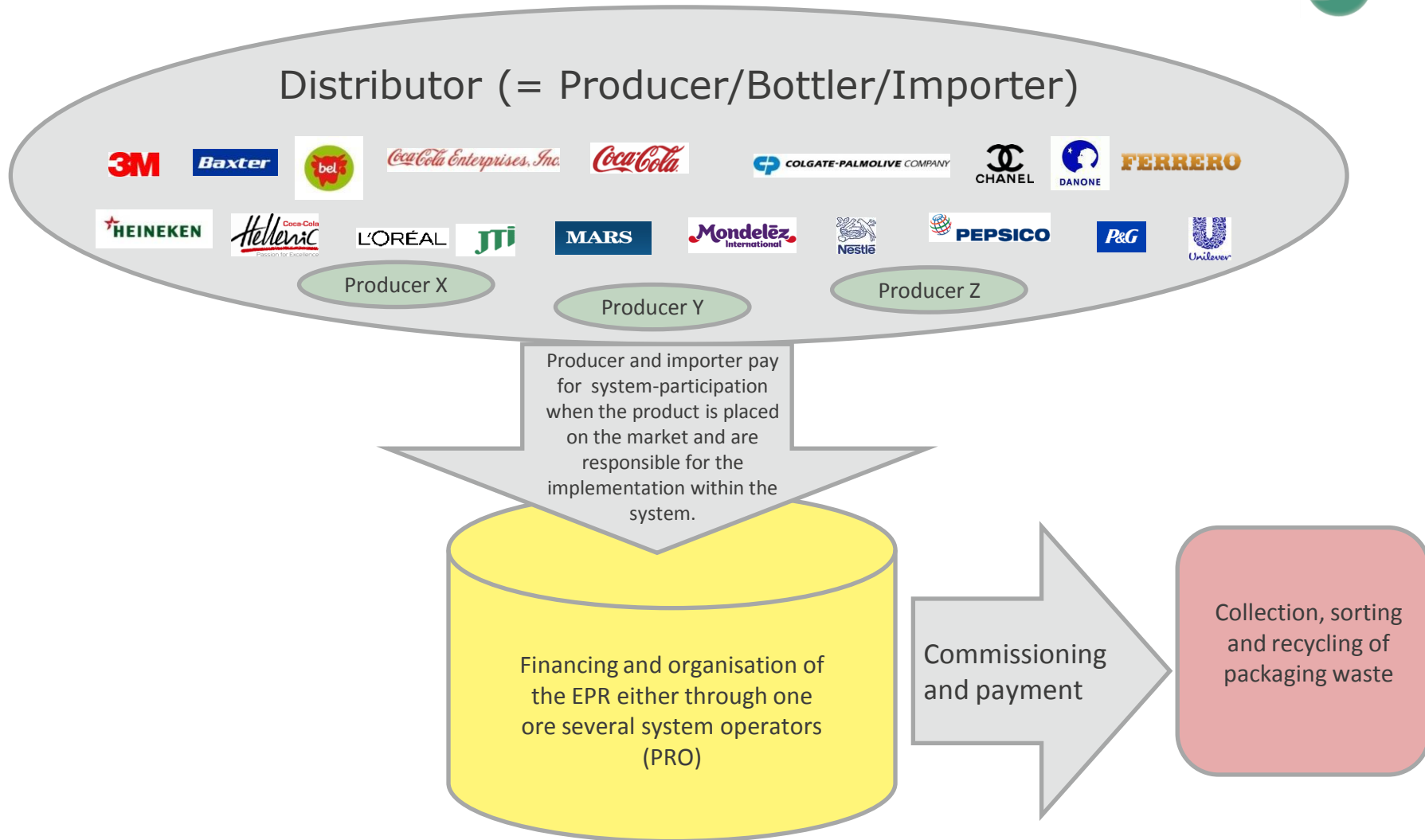
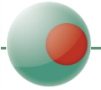
Retail trader



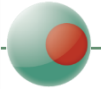
Consumer



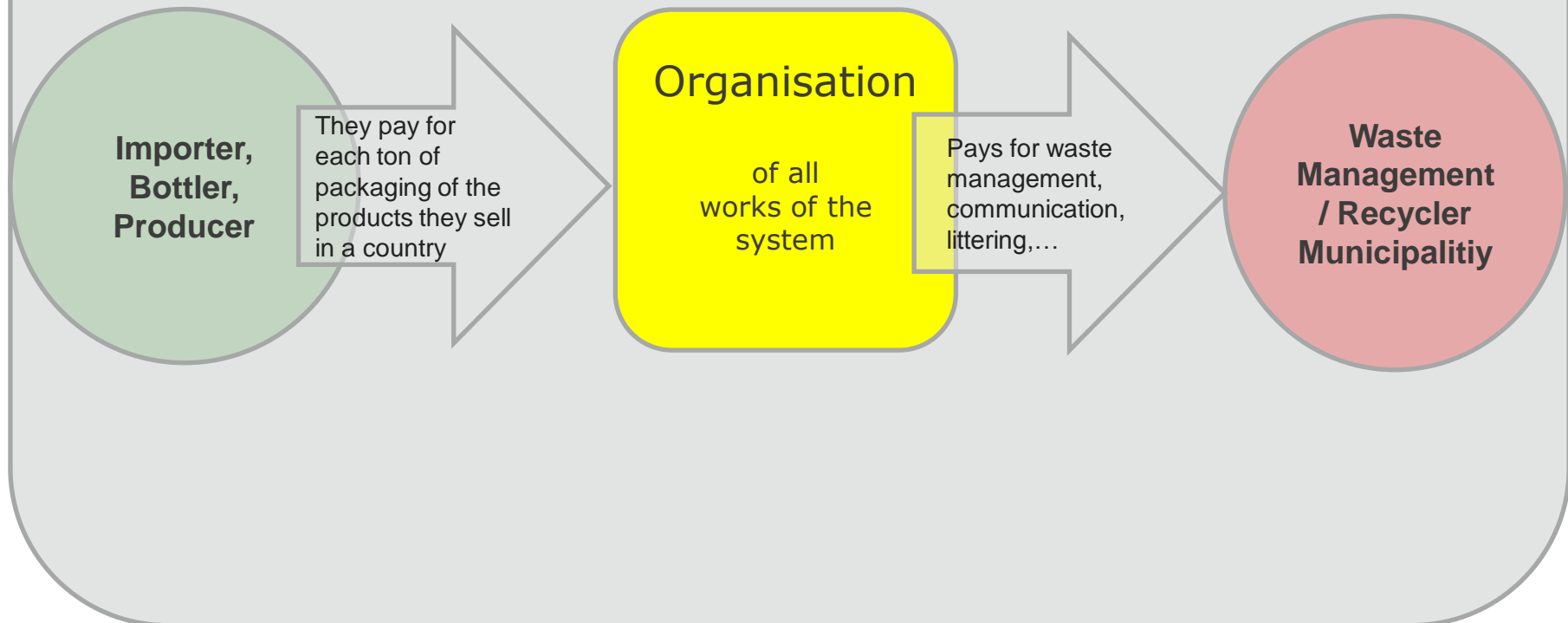
# Basic principle of organisation - Obligated companies



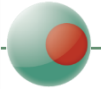
Information: Within the scope of the EPR-system in Germany the distributors pay around 1 billion Euro to the system operators.



## Government and Management Authorities: **Regulations and Controlling**

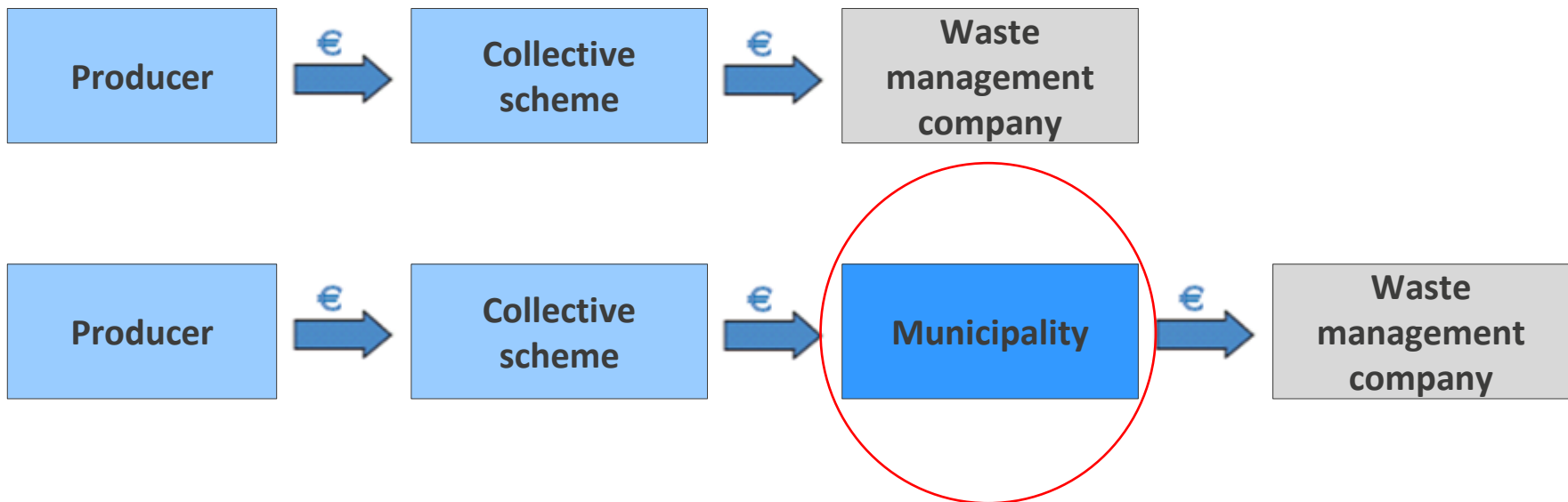






In some countries the contributions which the system operators receive are given to the municipalities.

In this case municipalities have to fulfill the tasks like collecting, sorting, recycling.





- Development of a concept for a sustainable and practicable waste management
- Establishment of the organisational structure
- Installation of an infrastructure for the collecting of packaging
- Installation of an infrastructure for the recycling
- Communication, waste advice, training, special education, etc.
- Activities against littering, for pollution control of waters and deserts
- Installation of a functional controlsystem

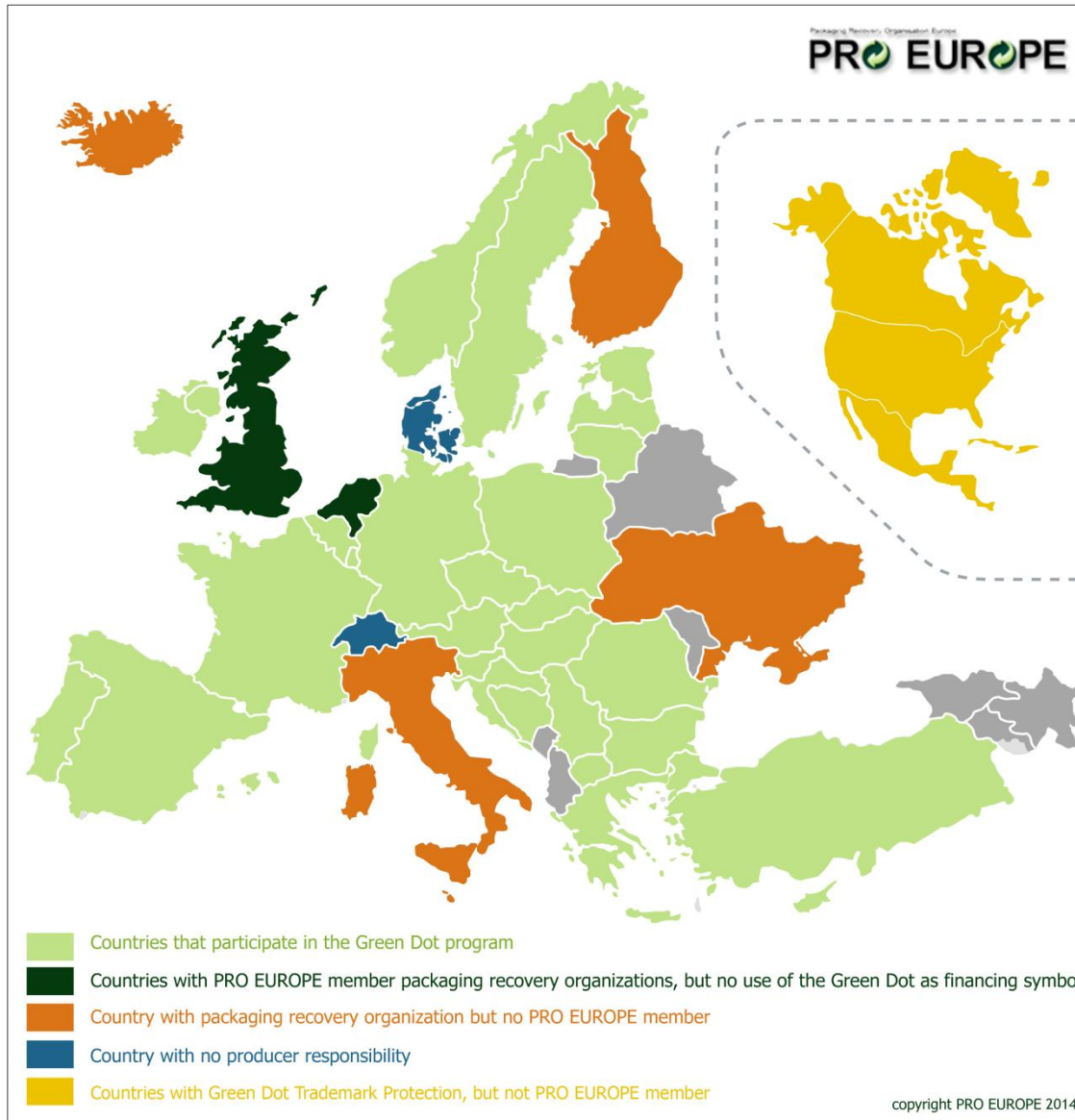
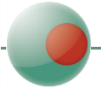
**=> All these points must be defined in a law**



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- An action plan for the Circular Economy of the European Commission makes concrete specifications for EPR-systems.
- Currently EPR is implemented in 25 of 28 EU member states at varying intensity and different models.
- These examples have shown which systems are practicable.
- But due to the different situations in the respective countries, the models can not be directly transferred.



## PRO EUROPE

is the umbrella organisation of 31 national producer responsibility systems engaged in the selective collection and recycling of packaging waste

<http://www.pro-e.org/>

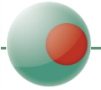


## **EXPRA** (EXTENDED PRODUCER RESPONSIBILITY ALLIANCE)

EXPRA is the umbrella organisation for packaging and packaging waste recovery and recycling systems which are owned by obliged industry and work on a not-for-profit basis.

Member compliance schemes of EXPRA are today in place in sixteen EU member states: Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Hungary, Italy, Finland, Luxembourg, Malta, Netherlands, Romania, Slovakia, Spain and Sweden (but also span to Canada, Israel, Macedonia, Norway and Turkey).

<http://www.expra.eu/>



Basic decisions are needed about financial and organisational responsibilities, scope, collection system, competition, not-for-profit, surveillance,...

1. PROs in the hand of obliged industry (e.g. Belgium, France, Netherlands, Spain)
2. PROs not in the hand of obliged industry, competition between PROs (e.g. Germany)
3. PROs dual to municipal waste management (e.g. Germany, Austria)
4. Shared Responsibility between industry and local authorities (e.g. Belgium, France, Netherlands, Spain)
5. Nationwide coverage or regional assignment
6. Only collective PROs or also individual solutions
7. Different scopes: PROs only for household packaging (waste arising at the municipal level) (e.g. Germany, France, Spain), PROs required for all types of packaging waste (e.g. Belgium, Netherlands)

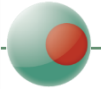


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# Germany



# Collection of lightweight packaging (LWP) in Germany



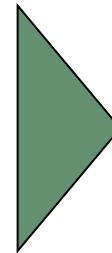
- Separate collection
- Main collection system: Gelber Sack (yellow bag), Gelbe Tonne (yellow bin) or Wertstofftonne (recycling bin – including “material identical waste” made of plastics and metals).



Waste containers for LWP  
(yellow bin)



Bag for LWP  
(yellow bag)

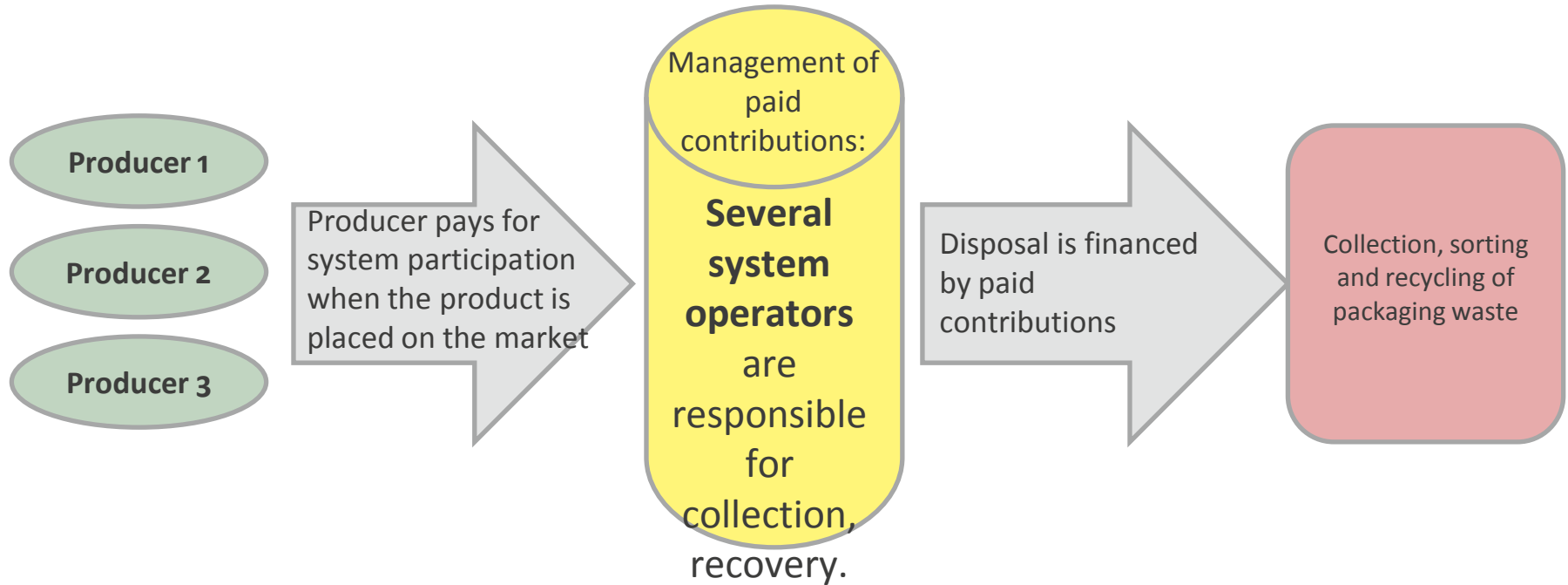
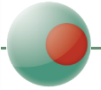


LWP after collection

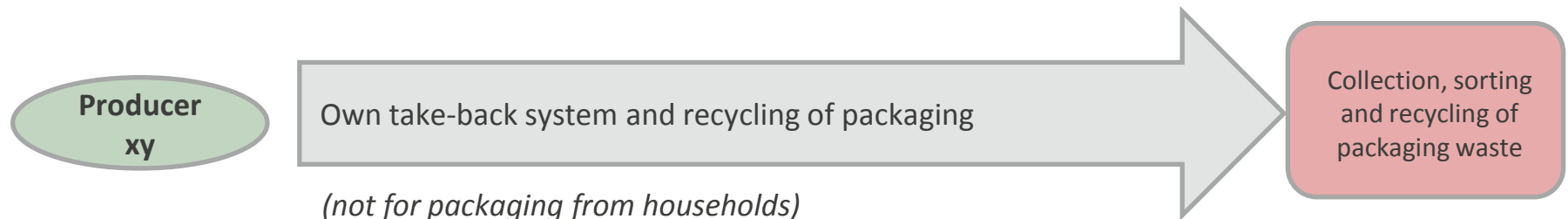


# Separate collection of lightweight packaging in Germany





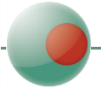
Packaging sold to households: the Producers are obliged to contract with a system operator





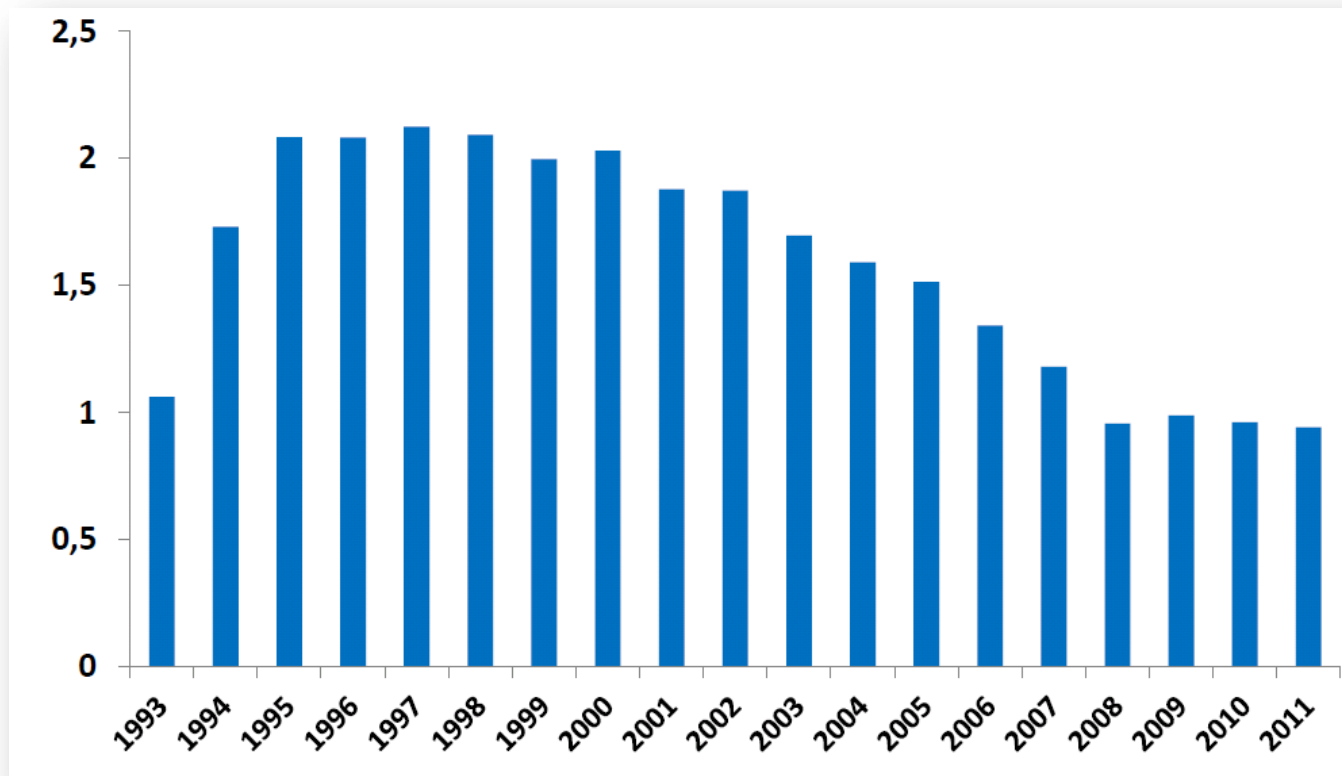
- Producers/distributors selling packed products pay licensing fees (contributions) to the private system operator
- System operators publish invitations to tender for the collection of LWP – more than 450 contracts in total.
- Sorting services are covered by separate tenders.
- The recycling is organized either by the sorting contractors or the system operators.
- System operator have to document mass flow across the entire chain (distributed volume, collected, sorted and recycled volumes).
- A certification to proof their eligibility as a recipient of plastic, paper-board compounds or liquid board packaging is required of processing or recycling plants.

# Turnover of the German dual system (sales packaging)



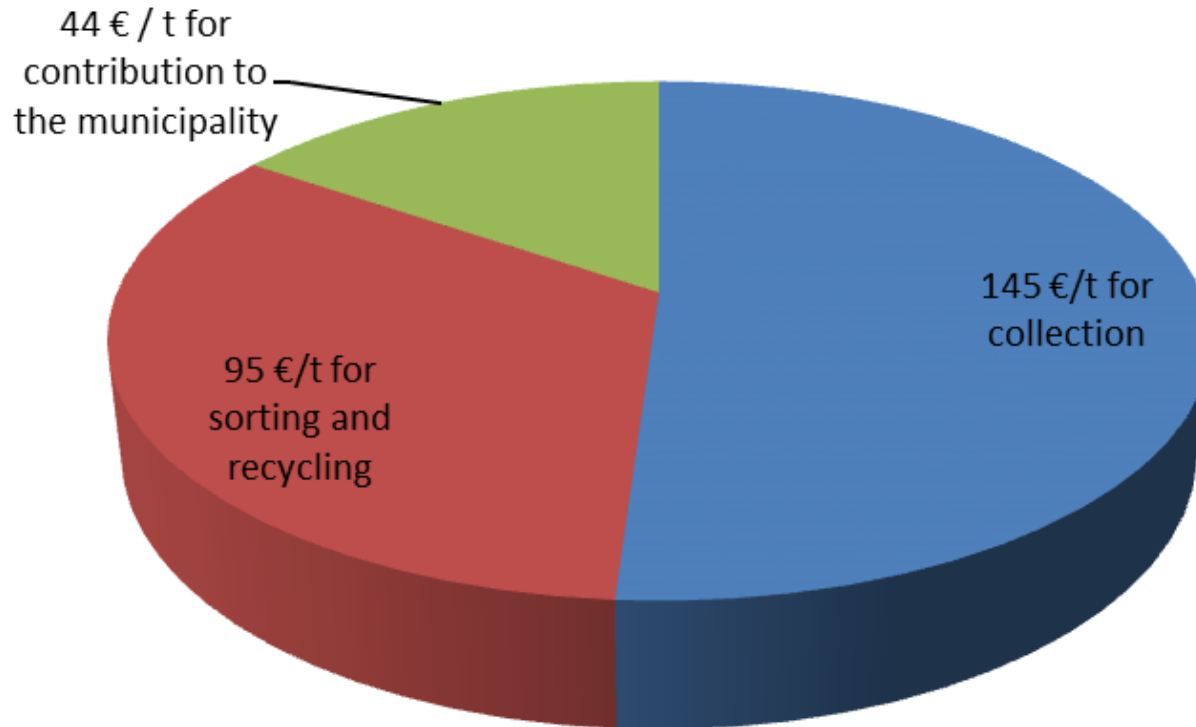
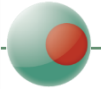
The overall turnover of the dual system in Germany (sum of all operators) decreased from around 2 billion € per year to about 1 billion € per year in 2011. At the moment the amount is higher than in 2011.

## Turnover of the EPR-System (all operators) for packaging from 1993 to 2011 (Bill. €)



Source: bundeskartellamt, 03.12.2012

Germany has around 80 Mio. residents. The system costs around 12 €/year and resident

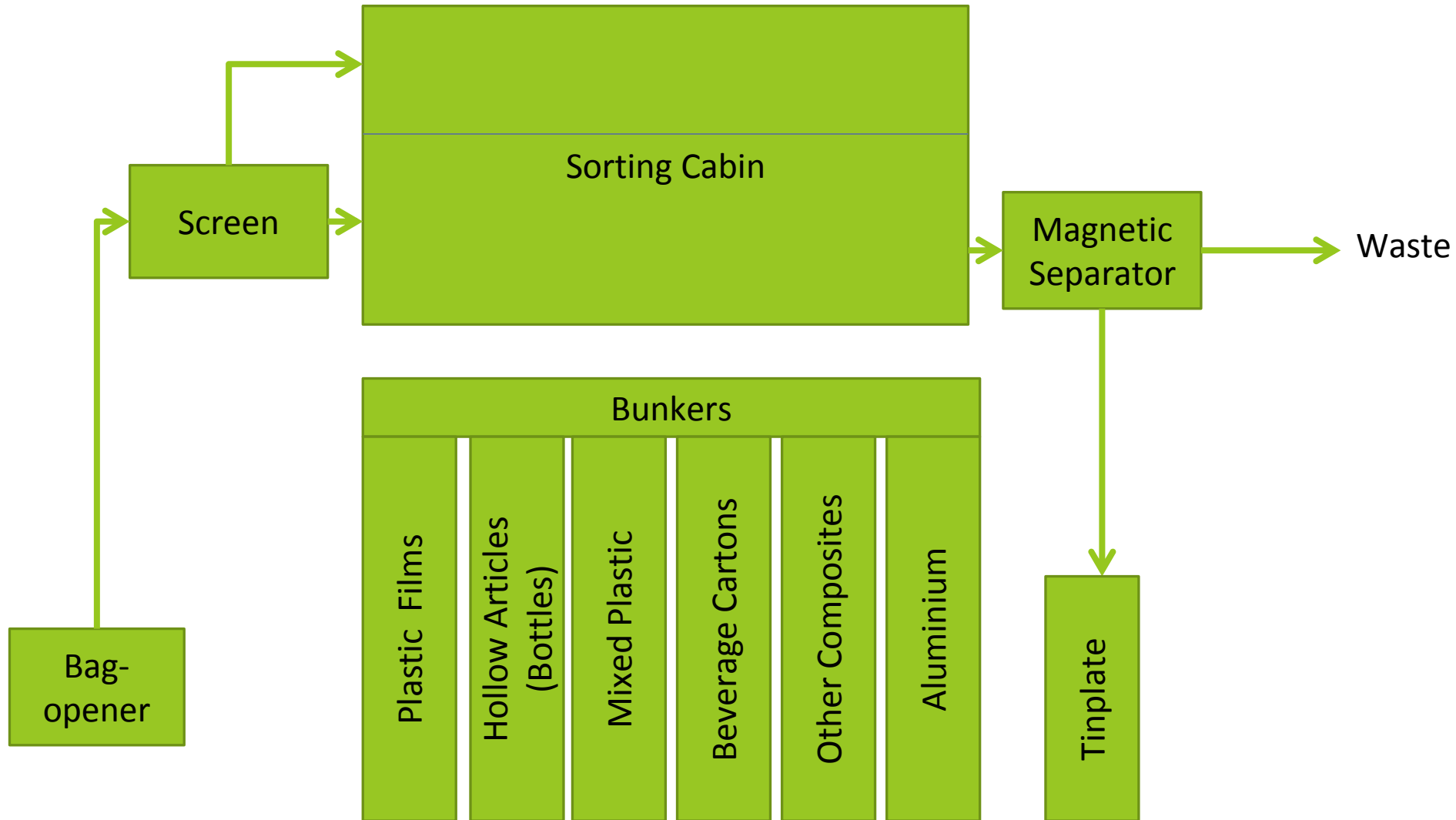
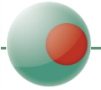


Overall costs for collection, sorting, recycling and municipal services:  
**284 €/t of lightweight packaging**

Collected amount of lightweight packaging:  
Overall costs for lightweight packaging:

**about 2.4 million tons in 2015**  
**682 million € in 2015**

# The sorting plants at the beginning







# Sorting lightweight packaging - impressions



Source: [www.f-e.de](http://www.f-e.de)



Source: [www.recycling-fuer-deutschland.de](http://www.recycling-fuer-deutschland.de)



Source: [www.spd-ratsfraktion-braunschweig.de](http://www.spd-ratsfraktion-braunschweig.de)

## Sorting lightweight packaging – impressions



Source. Handelsblatt



Source. Recyclingmagazin

# Sorting products – Examples of Plastics



**PP**



**PE**



**Mixed Plastics**

## Plastics Processing/Recycling



**PET**

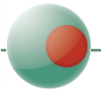


**Films**



**MPO-by-product and Residues**

## Energetic Recovery

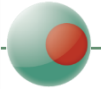


Sorted plastic packaging



Product examples after recovery





Sorted PET plastics



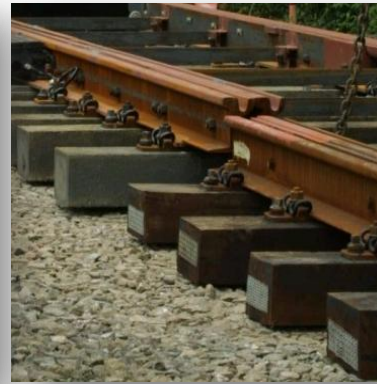
Product examples after recovery



# Further products of plastics from mixed plastic

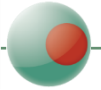


# Further products of plastics from mixed plastic









(since 09/2017)



ECO  
EMBALLAGES



The municipalities are responsible for the nationwide collection of household packaging. They conclude contracts with CITEO (before Eco-Emballages). CITEO pays 80 % of the costs. CITEO is a non-profit company.

Packaged goods manufacturers and importers are responsible for the recovery of packaging waste from households through an approved compliance system.

Companies not joining a compliance system must either introduce a deposit scheme or else set up their own government-approved collection system (e.g. Leclerc for plastic bags).

- Glass is mainly collected via bring-it-yourself containers at central collection points (street collection is optional).
- For around 75 % of the population, the collection of plastic packaging is currently limited to bottles (beverages, shampoo, detergent, etc. made of PET and HDPE). 2022 the collection of all plastic packaging shall be available for all inhabitants.
- Depending on the local setup, paper/carton, aluminium, steel and plastics are collected either separately or together in recycling bins or bags.

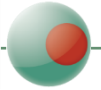
# Prices of producers and importers in France (Eco-Emballages/CITEO)



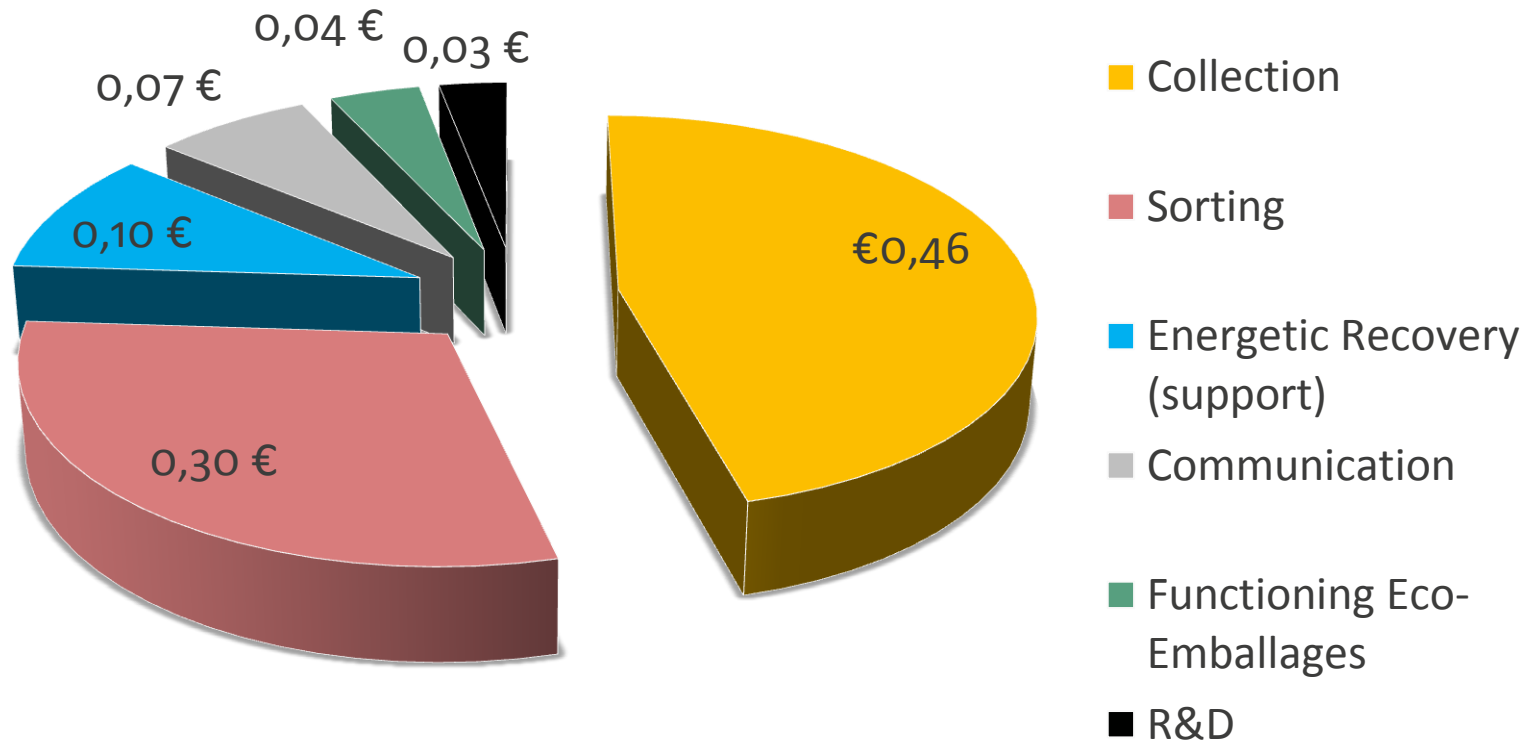
## Basic fee by weight of material (EUR per kg)

Packaging material	01/2004 – 09/2010	10/2010 – 12/2010	01/2011 – 12/2011	Since 2012	2016	2018
Steel	0.0226	0.0282	0.0302	0.0315	0.0315	0.0443
Aluminium	0.0453	0.0566	0.0606	0.0928	0.0928	0.1038
Paper & cardboard	0.1221	0.1526	0.1633	0.1633	0.1633	0.1630
Brick packs (beverage cartons)	0.1221	0.1526	0.1633	0.1704	0.1704	0.2474
PET and HDPE from bottles	0.1778	0.2222	0.2378	0.2422	0.2422	0.3123
Other plastic bottles	0.1778	0.2222	0.2378	0.2447	0.2447	
Other plastics	0.1778	0.2222	0.2378	0.2806	0.2806	
Glass	0.0036	0.0045	0.0048	0.0121	0.0121	0.0142
Other materials	0.1221	0.1526	0.1633	0.2329	0.2329	0.3123

Plus a contribution for each unit (according to the number of elements used)  
Additional bonus/penalty system to encourage reducing and recyclability.

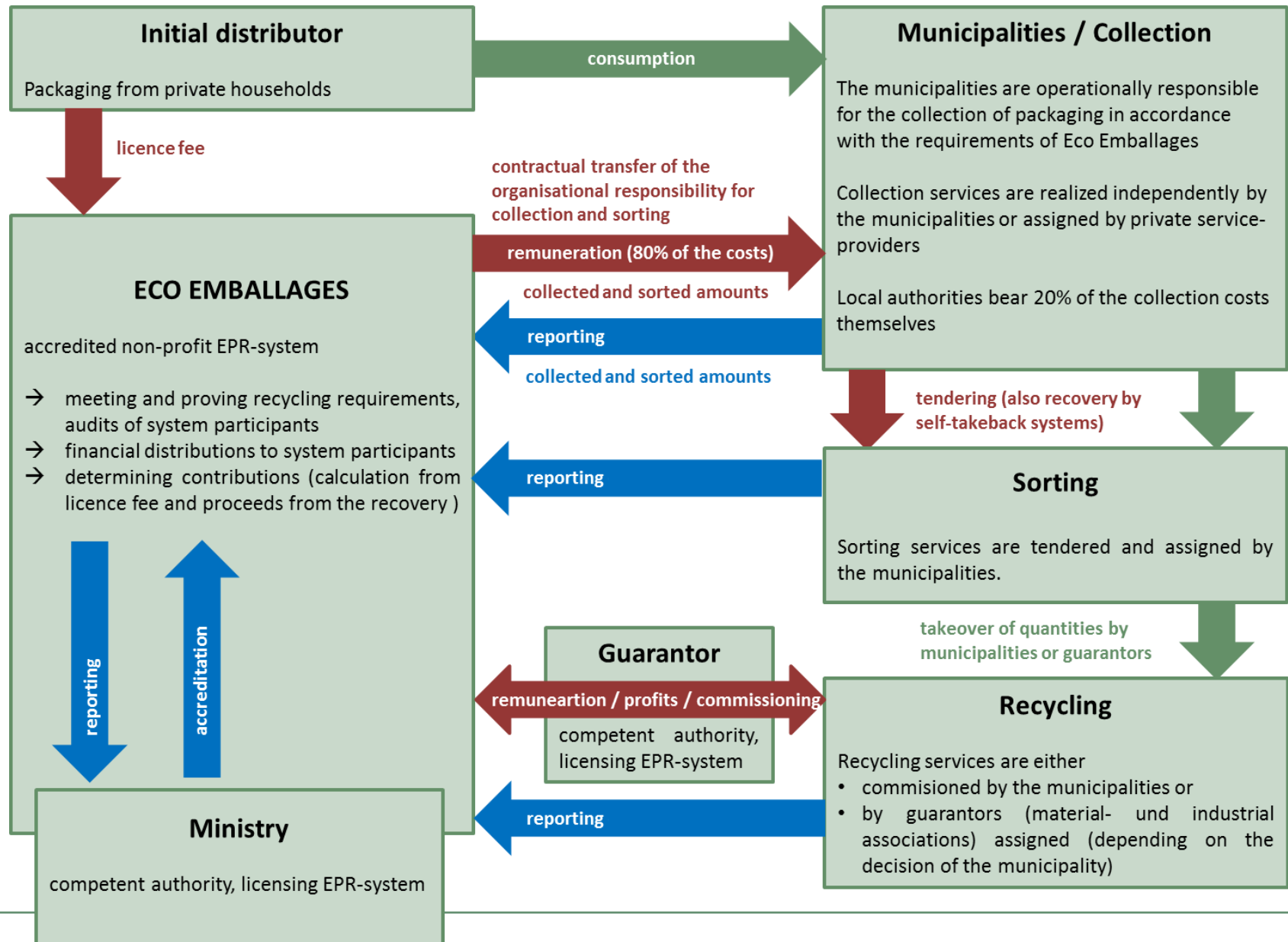
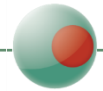


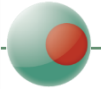
## 1 euro paid to Eco-Emballages was used to...



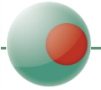
2016: 654 millions € contribution – → 10.30 € per inhabitant

# Collection systems in other EU member states (France)





- EPR systems can be major contributors to recycling.
- EPR systems are securing the financing of part of the waste management.
- The European Packaging Directive has allowed a great deal of leeway for implementation. Therefore, different EPR systems could be implemented with adaptation according to country and circumstances.
- Producers should be involved in building the EPR system right from the start.
- Politics and government agencies are important in setting the framework, the approval of EPR systems and regular monitoring.
- Tunisia already has important and practical experience with ECO-lef. ECO-lef provides a very good basis for further development of an EPR system.



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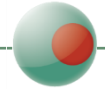




In Belgium household packaging is financed, collected and recycled via FOST Plus. Fost Plus is in the hand of the obliged industry. It is a not-for-profit system.

- **Paper and cardboard** is collected via a close-to-home collection system (monthly).
- **Glass** is collected mainly via a bring-it-yourself system (central container collection separated by transparent and colour). FOST Plus must guarantee to provide at least one glass container per 700 inhabitants.
- **Lightweight packaging** (only plastic bottles, metal and liquid packaging boards) are predominantly (ca. 88%) collected via a close-to-home collection at least twice a month in blue bags and taken to sorting plants afterwards.
- **Other plastic packaging** like yoghurt cups, plastic bags, etc. are not collected separately but added to the energetic recovery via residue waste. But in 2019 the separate collection will be expanded to all types plastic packaging.

# Fost Plus - Sorting rules PMD (plastic, metal, drink cartons)



## Allowed

### Metal packaging

Including food and cosmetic sprays, aluminum plates, dishes and trays, metal lids and caps.



### Plastic bottles and flasks

No other plastic packaging or objects.



### Drinks cartons



## Not allowed

### Residu PMD

- All other plastic packaging and objects (plastic pots and dishes, plastic bags, plastic film, et cetera), aluminum foil, polystyrene foam, syringes, infusion bags and other medical waste.
- Packaging with child-resistant safety caps, including packaging for drain cleaners and toilet descaling products.



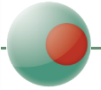
- Packaging with at least one of these icons:



- Packaging of pesticides (insecticides, herbicides, moss control, rat poison, et cetera.)
- Packaging of engine oil, paint, lacquer, varnish and other toxic products.



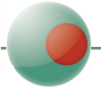
Source: <https://www.fostplus.be/en/sorting-recycling/all-about-sorting/sorting-rules-pmd>



Packaging material	€ per kg in 2012	€ per kg in 2016
Glass	0.0231	0.0293
Paper and cardboards (> 85% cellulose)	0.0202	0.0185
Steel (> 50%)	0.0525	0.0848
Aluminium (>50%; >50 µm)	0.0654	0.0353
PET and HDPE from bottles	0.1387	0.1471
Beverage carton	0.2848	0.2498
Other recyclable materials	0.3273	0.2873
Other, non recyclable materials	0.4304	0.3161

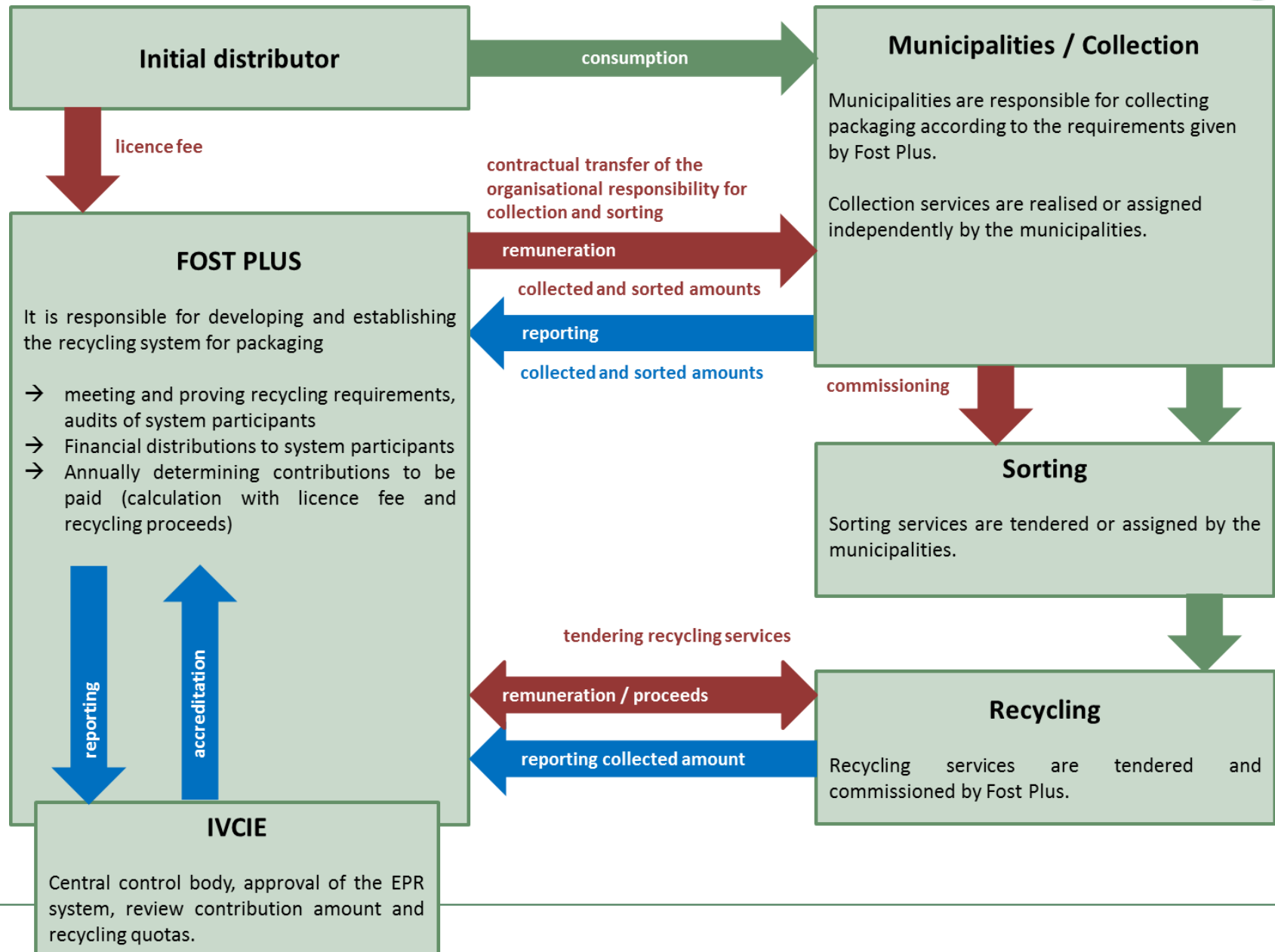
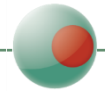
Further on a licence fee between 0,1 and 6 cent per packaging unit has to be payed.

# Costs for the EPR-system for packaging in Belgium (2014)



Belgium has 11,3 million inhabitants → the system costs 12 € per inhabitant each year.

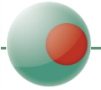
# Collection systems in other EU member states (Belgium)





# Netherlands





In the Netherlands EPR is central organised by “Afvalfonds”. Municipalities are responsible for the collecting, sorting and recycling of all packaging. The PRO is in the hand of the obliged industry. It is a not-for-profit system.

- **Glass** is collected via central containers separated by colour (local containers and underground containers; about one container per 1,000 inhabitants) and municipal recycling centres.
- **Paper and cardboard** is collected via waste paper collection bins in households.
- Concerning **plastics**, the municipalities have the choice to collect only plastic bottles and (dimensionally stable) hollow bodies, or to collect them together with every other plastic packaging in a close-to-the-home collection system (so called „bronscheiding“).

# Development of prices for producers and importers in the Netherlands

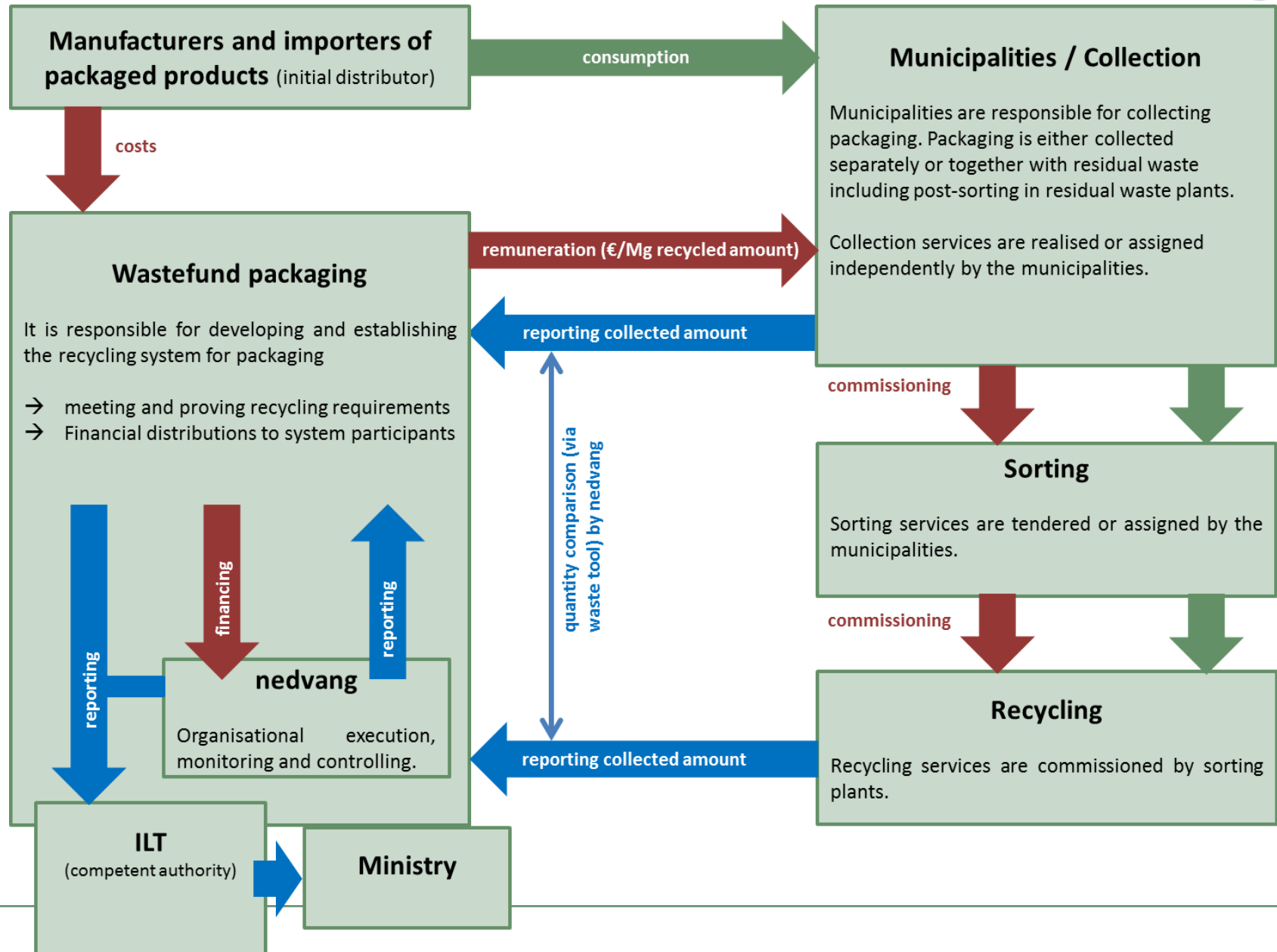
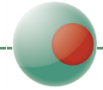


Packaging material	€ per kg	
	2013 / 2014 / 2015	2016
Glass	0,0595	0,0560
Paper and cardboard	0,0233	0,0220
Aluminium	0,0212	0,0200
Plastics	0,3876	0,6400
Biodegradable plastics	0,0212	0,0200
Other metals	0,0212	0,0200
Woods	0,0212	0,0200
Other materials	0,0212	0,0200
Deposit bottles	0,0212	0,0200
Beverage cartons	0,1200	0,1800
Other compounds	0,4700	0,7700
Plasticbottles without deposits	7,5000	7,5000

21 % VAT have to be payed on this contributions in addition



# Collection systems in other EU member states (NL – 2/2)





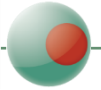


Two EPR-systems: Ecoembes for LWP and packaging made of paper and Ecovidrio for glass packaging. Only household packaging under EPR.

Once a product is consumed, the packaging ceases to serve the function for which it was created and it becomes waste, at which point it must be recovered so that it can be recycled, thus contributing to care for the environment.

To make it possible to pick up the packaging waste generated at households, Ecoembes partners with local and regional governments so that over 46 million Spaniards can recycle their packaging waste.

Plastic containers, cans and cartons go in the yellow container, and paper and cardboard containers go in the blue one. In all there are over 572.739 yellow and blue containers available throughout Spain to deposit packaging waste.



municipalities



lightweight packaging	Paper and board	Glass	Residues
<p>Bottles and plastic containers: products of hygiene and cleaning, tubes, trays, wrappers and bags.</p> <p>Metal packaging: cans, aluminum pans, aerosol, cans of deodorant lids and metal caps.</p> <p>Cartons of milk, fruit juices, soups, etc.</p>	<p>Paper and cardboard boxes: containers of food, footwear, frozen products, paper wrapping, paper everyday, etc.</p>	<p>Glass bottles: wine, champagne or liquor.</p> <p>Glass bottles: perfume, Cologne or similar.</p> <p>Food jars: jam, preserves, vegetables, etc.</p>	<p>All other types of waste such as food, plants, organic materials.</p>



In Spain exist approx. 90 sorting plants

## **Automatic separation into 3 categories:**

- Plastic packaging
- Metal packaging
- Liquid packaging board

## **Manual separation:**

- PET, PE-HD, plastic film and mixed plastics
- Ferrous metals, aluminium
- Liquid packaging board



## Green Dot Fees

2012-2018

Material		
Steel	0.085	€/kg
Aluminum	0.102	€/kg
PET and HDPE (rigid body and UNE bag)	0.377	€/kg
Flexible HDPE, LDPE, Biodegradable and other plastics	0.472	€/kg
Food and drink cartons	0.323	€/kg
Paper and cardboard	0.068	€/kg
Ceramics	0.020	€/kg
Woods and cork	0.021	€/kg
Other materials (*)	0.472	€/kg

\* **Other materials** This section includes all those materials that do not belong to any specific group.

## Green Dot Fees Glass

2012-2017

-2018

€/Kg+€/Ud

€/Kg+€/Ud

Weight factor  
0.0197

Weight factor  
0.0212

+

+

Units factor  
0.0028

Units factor  
0.0030

# Collection systems in Spain

