# Development of Guidance on Extended Producer Responsibility (EPR)

## FINAL REPORT

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# GLOSSARY

| Term | Definition |
|---|---|
| Civic amenity site | A civic amenity site (or household waste recycling centre) is a facility where the public can dispose of sorted household waste. Civic amenity sites are generally run by the local authorities in a given municipality. |
| Clearinghouse | Third-party central agency or corporation acting as a regulator for a competitive market |
| C&I | Commercial and Industrial (waste) |
| Deposit-refund scheme | Recovery system that requires the collection of a monetary deposit on a product's packaging (often beverage containers) at the point of sale. The deposit is refunded to the purchaser when they return the container to an authorised redemption centre. Non-recovered deposits may be used to finance waste collection and disposal facilities. |
| EC | European Commission |
| Eco-design | Any production process that takes into account environmental considerations (e.g. raw material use, recyclability, end-of-life waste management requirements) at the product design stage |
| EEE | Electrical and Electronic Equipment |
| ELV | End-of-Life Vehicle(s) |
| EPR | Extended producer responsibility, i.e. an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle |
| EPR scheme | Any system or scheme set up by one or several producers to implement the EPR principle.<br>Synonyms: *compliance scheme* |
| Fee | Price paid by a producer to have its products dealt with through a PRO |
| Free riders | Producers who do not contribute financially to any compliance scheme, but still benefit from their existence and action |
| Guiding Principle | General rule to be followed in order to move towards more efficient, accountable and harmonised practices for EPR schemes |
| HH | Household (waste) |

| | |
|---|---|
| Local authorities / Local public authorities (LPAs) | Elected and non-elected agents who manage a city or local community.<br>Synonym: *Municipalities* |
| MS | Member State(s) |
| MSW | Municipal solid waste |
| Polluter Pays Principle (PPP) | The polluter-pays principle is a guiding principle at European and international levels, which stipulates that the waste producer and the waste holder should bear the costs of waste management in a way that guarantees a high level of protection of the environment and human health. |
| PRO | Producer Responsibility Organisation, i.e. a collective entity set up by producers or through legislation, which becomes responsible for meeting the recovery and recycling obligations of the individual producers. |
| Producers | Product makers; they are expected to assume extended responsibility for the products they put on the market. In practice, the extended responsibility is frequently assumed by other actors, i.e.: importers, marketers, retailers, distributors. |
| Recovery | Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function (or waste being prepared to fulfil that function) (definition from Waste Framework Directive 2008/98/EC, Article 3). |
| Recycling | Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes.<br>It includes the reprocessing of organic material, but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations. (Definition from Waste Framework Directive 2008/98/EC, Article 3.) |
| Regeneration (of waste oils) | Any recycling operation whereby base oils can be produced by refining waste oils, in particular by removing the contaminants, the oxidation products and the additives contained in such oils (definition from Waste Framework Directive 2008/98/EC, Article 3). |
| Re-use | Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived (definition from Waste Framework Directive 2008/98/EC, Article 3). |

| | |
|---|---|
| Stakeholders | All actors involved in the value chain of a product: producers, retailers, consumers-citizens, local authorities, public and private waste management operators. |
| Stream | Activity chain related to the recovery and recycling of a specific type of waste material or product.<br>Synonym: *Product stream* |
| SWM | Solid waste management |
| Take-back obligation / system | Obligations for producers or distributors to take back their products from end users at the end of the products' useful life. |
| WEEE | Waste Electrical and Electronic Equipment |
| WM | Waste management |

# SYMBOLS

BATTERIES

GRAPHIC PAPER

END-OF-LIFE VEHICLES

OILS

PACKAGING

WASTE ELECTRIC AND ELECTRONIC EQUIPMENT

# Executive Summary

## A widely used environmental policy, applicable to many product categories…

According to the OECD **definition**, Extended Producer Responsibility (EPR) is "*an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle*"[1]. In practice, EPR implies that producers take over the responsibility for collecting or taking back used goods and for sorting and treating for their eventual recycling. Such a responsibility may be merely financial or organisational as well. The policy first appeared in the early 1980s in a few European Member States, especially for packaging waste, and since then it has continuously spread around the EU (and abroad).

EPR should aim at internalising environmental externalities and should provide an incentive for producers to take into account environmental considerations along the products' life, from the design phase to their end-of-life. As such, EPR is to be considered as a **major instrument in support of the implementation of the European Waste Hierarchy**, and therefore for the increase of, by priority: prevention, reuse and recycling. Along with other key economic instruments, EPR can encourage a change in behaviour of all actors involved in the product value chain: product-makers, retailers, consumers-citizens, local authorities, public and private waste management operators, recyclers and social economy actors. EPR is also identified as a key instrument in link with resource efficiency and raw materials strategies promoted at EU level such as the flagship initiative for a resource-efficient Europe under the Europe 2020 strategy and the European Innovation Partnerships (EIP), launched under the European Commission's Innovation Union.

## …with a large variety of implementation models

At EU level, three Directives introduce EPR as a policy approach: the ELV Directive 2000/53/EC, the new WEEE Directive 2012/19/EU and the Batteries Directive 2006/66/EC. EPR is also widely used in support of the implementation of the Packaging and Packaging Waste Directive (94/62/EC), although the Directive itself does not impose the principle. In addition, article 8 of the Waste Framework Directive 2008/98 sets some principles regarding the implementation of EPR by the European Member States.

It must however be reminded that, beyond these types of waste, in some countries, Extended Producer Responsibility schemes can cover additional products, notably: used oils, used tyres, graphic paper and textile, as well as many other kind of products such as: medicines, fluorinated refrigerant fluids, agricultural films, mobile homes, furniture, etc. The following table describes the current use of EPR in the 28 MS.

[1] OECD (2001) *Extended Producer Responsibility: A Guidance Manual for Governments*, OECD, March, Paris, 164p

Table 1: Overview of all existing EPR schemes in the EU-28 in 2013

| MS | Batteries | WEEE | Packaging | ELV | Tyres | Graphic paper | Oils | Medical waste, old/unused medicines | Agricultural film | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| AT | X | X | X | X | X | X | X | X | | |
| BE | X | X | X | X | X | X | X | X | X | Disposable plastic kitchenware; photo-chemicals |
| BG | X | X | X | X | X | | | | | |
| CY | X | X | X | X | X | X | X | | | |
| CZ | X | X | X | X | | | | | | |
| DK | X | X | Δ | X | X | X | | | | |
| EE | X | X | X | O | X | | | O | | |
| FI | X | X | X | X | X | X | | X | X | |
| FR | X | X | X | X | X | X | | X | X | Fluorinated refrigerant fluids; pharmaceuticals; lubricants; textiles; infectious healthcare waste; furniture; dispersed hazardous waste; plant protection product packaging and unused products; fertiliser and soil amendment packaging; seed and plant packaging; mobile homes; office equipment ink cartridges |
| DE | X | X | X | O | | | X | | X | |
| GR | X | X | X | X | | | | | | |
| HU | X | X | Δ | X | Δ | | | | | |
| IE | X | X | X | X | X | | | | X | |
| IT | X | X | X | X | X | | | | X | |
| LV | X | X | X | X | X | X | X | | | |
| LT | X | X | X | X | X | X | | | | |
| LU | X | X | X | X | | | | | | |
| MT | X | X | X | N/A | | | | | | |
| NL | X | X | X | X | X | X | | | | Window panes |
| PL | X | X | X | X | X | | X | | | |
| PT | X | X | X | X | X | | X | X | | Packaging of medical waste, old medicines; packaging of phytopharmaceuticals |
| RO | X | X | X | O | | | | | | |
| SE | X | X | X | X | X | X | | X | X | |
| SK | X | X | X | X | X | X | | | | |
| SI | X | X | X | X | X | | X | X | | Waste from hazardous pesticides; graveside candles |
| ES | X | X | X | X | X | | X | X | X | |
| UK | X | X | X | X | | | | | | |
| HR | X | X | X | X | X | | X | X | | Waste containing asbestos |
| Total | 28 | 28 | 27 | 27 | 20 | 11 | 10 | 10 | 8 | |

X EPR scheme | O Takeback obligation but no PRO | Δ Product fee legislation / Governmental fund

It is important to note that European waste legislation currently gives a global framework for the implementation of EPR in Europe. The Member States and their respective legislation are responsible for the implementation of EPR, including regulating the operational aspects of EPR. The present study shows that EPR policies have been designed and implemented in a very heterogeneous manner across Europe.

Despite EPR being, in theory, an individual obligation, in practice producers often exert this responsibility collectively. In collective schemes, a Producer Responsibility Organisation (PRO) is set up to implement the EPR principle on behalf of all the adhering companies (the obligated industry). PROs potentially exert three main functions:

- financing the collection and treatment of the product at the end of its life (targeted waste stream) by collecting fees and redistributing the corresponding financial amounts;
- managing the corresponding data;
- organising and/or supervising these activities.

Although this report mainly focusses on PROs, individual schemes do exist for most waste streams.

In the last ten years, two main evolutions of EPR have occurred:

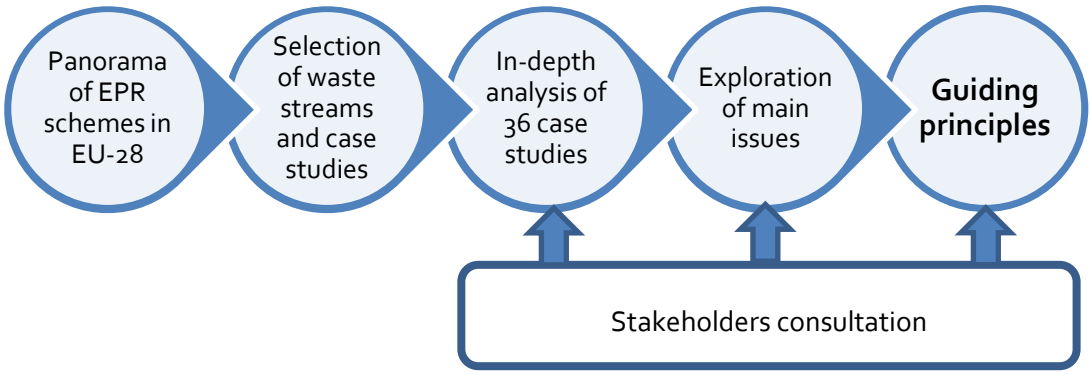
- whereas the initial fees paid by producers represented only a partial contribution to solid waste management costs, **the operational costs coverage by producers fees has gradually increased**, sometimes reaching 100%;
- whereas the PROs were initially created as entities whose role was merely to aggregate the producers financial contribution, **their role has been drifting towards more operational interventions and a broader scope of action** (data management, organising operations, launching bids, communication campaigns, etc.).

Such evolutions have accompanied undeniable **improvements** in waste recycling and recovery performances in all MS. Nevertheless, **large differences in performances do exist** between Member States. It is also important to note that considerable differences in terms of organisation of EPR schemes can be observed depending on the waste stream.

## From performance benchmark to design of Guiding Principles for EPR throughout the EU

The main objectives of this study were to get a better overview of the current situation regarding the implementation of EPR in Europe, identify good practices and, based on a benchmarking exercise and stakeholders consultation, develop guiding principles on how to design efficient and effective EPR schemes. In order to identify these guiding principles, a six-component approach was developed, as shown in **Figure 7**.

**Figure 1: The six-component approach for the project**




For the 28 Member States, the following waste streams where chosen for consideration:

- Those waste streams covered by European directives, i.e.:
  - batteries and accumulators (B&A);
  - electrical and electronic waste (EEE);
  - end-of-life vehicles (ELV);
  - packaging;
- Two additional streams were included:

- Graphic papers, taking into account the large number of EPR schemes in place throughout the EU for this stream and the fact that it is composed primarily of municipal waste;
- Oils, taking into account the high quantity of waste generated within this waste stream.

**Comparison across the EU and access to quality data**

As a preliminary and transversal remark, which applies for all phases of this study, it should be noted that, even after extensive investigation, there is a **severe lack of comparable information available** for the following:

- EPR economic performance: there is a lack of transparency regarding the financial aspects (fees and costs) of EPR schemes (costs are not always aggregated at a national scale), the link between the fees paid by the producers and the costs they are supposed to cover, or general access to the financial information and flows;
- EPR technical performance: data regarding quantities put on the market, waste generated and collection and treatment are hardly comparable, being calculated in very diverse ways, with some quality issues.

The benchmark carried out as part of the first phase of the study for the 28 Member States is thus limited to the accessible data, which makes the comparison difficult between Member States and across sectors.

### Great discrepancies in performance indicators at the EU-28 level[2]

Collection rates vary from 5% (MT) to 72% (CH).

Average fees paid by producers vary from €240 (FR) to €5,400 (BE) per tonne of batteries put on the market, the unit used in order to make different kinds of tariffs comparable (fees are set by product unit in some MS and according to weight in others).

Recycling and reuse rates vary from 64% (MT) to 96% (DE).

No aggregated fees data could be obtained for all MS.

Collection rates vary from 3% (BG) to 61% (BE). Regeneration rates also show great contrasts and the information was not always available.

No aggregated data concerning fees could be obtained for all MS.

[2] No data is reported on Eurostat for graphic paper

Recycling rates vary from 29% (MT) to 84% (DK).

Average fees charged to producers per tonne of packaging (household only) vary from less than €20 (UK) to nearly €200 (AU).

Collection rates vary from 1.2 kg/cap. (BG) to 17.2 kg/cap (BE), the average being 6.6 kg/cap.

Fees vary according to the type of equipment considered (fridges, monitors, TVs…) and can easily double or triple from one MS to another. Information regarding the fees paid by the producers is particularly difficult to obtain for the WEEE sector.

### An in-depth analysis of thirty-six case studies

In order to overcome the inconsistency of available quantitative indicators (notably published by Eurostat), to get a more precise view of fees paid by producers and to understand the inner EPR system functioning, thirty-six case studies were selected for an in-depth analysis (cf. Table 2 ) with the objective of having a good representativeness of the different situations prevailing in Europe.

Table 2: The 36 EPR case studies analysed

| | | | | | |
|---|---|---|---|---|---|
| Austria | Austria | Finland | Belgium | Austria | Denmark |
| Belgium | Finland | France | Finland | Belgium | Finland |
| Denmark | Germany | Netherlands | Germany | Czech Rep. | France |
| France | Netherlands | Sweden | Italy | France | Ireland |
| Netherlands | Slovak Rep. | | Portugal | Germany | Latvia |
| Switzerland | Sweden | | Spain | Netherlands | Sweden |
| | | | | United Kingdom | United Kingdom |

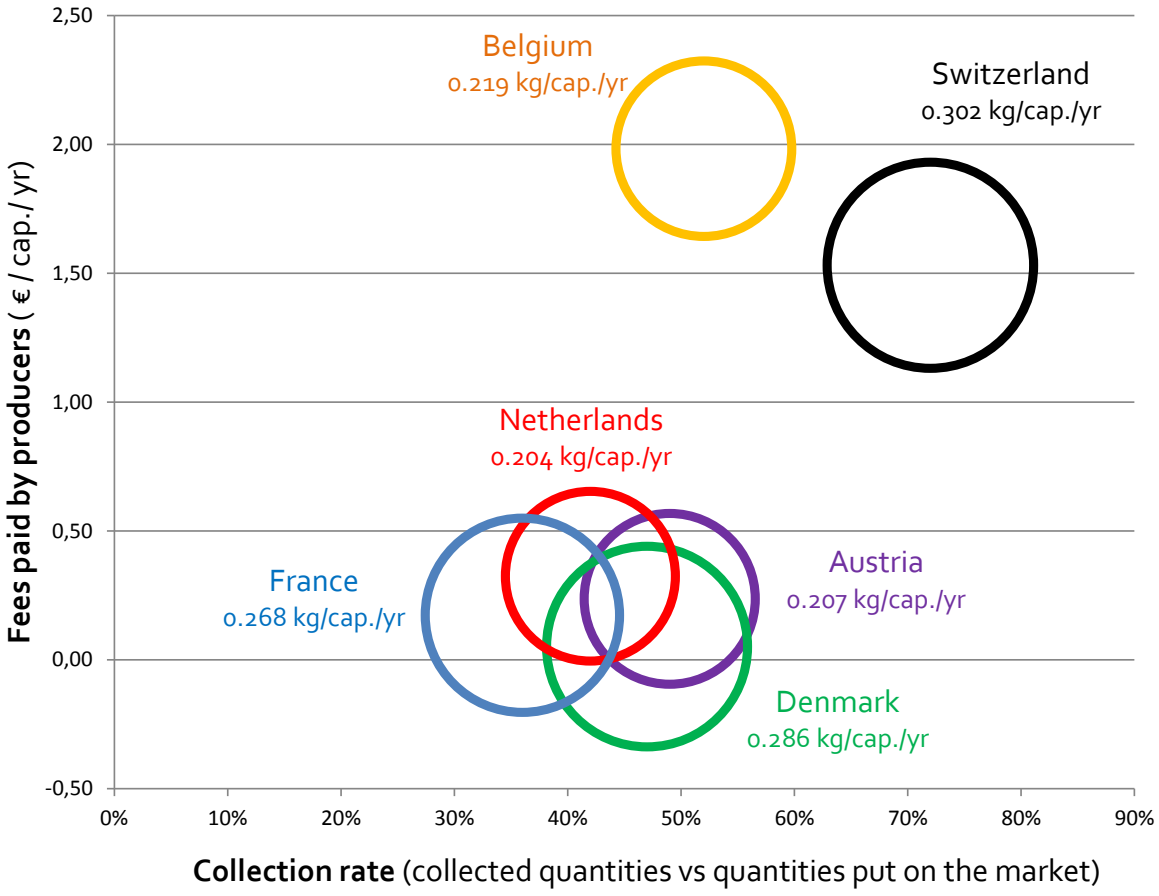
The 36 case studies were analysed in detail with a view to draw lessons and identify good practices. Relevant stakeholders were interviewed in order to complete the understanding of the situation in each country. The 36 factsheets (10-15 pages each), produced using the same framework of analysis, are available on the project website: http://epr.eu-smr.eu.

A quantitative benchmark was performed, comparing systematically technical and financial performances, product stream by product stream:

- Not only relative indicators but also absolute values of **quantities collected and/or recycled** were provided.
- Data related to the **technical performance** was collected and re-calculated on a homogeneous basis.
- In each MS, data related to **fees** was aggregated from all the PROs existing for a product stream.

The result of this quantitative benchmark analysis is presented below.

**Figure 2: Cost effectiveness of EPR schemes for portable batteries in 2011**




The collection rate for portable batteries ranges from 36% (France) to 72% (Switzerland). All the EPR schemes studied thus have a higher collection rate for portable batteries than the EU target for 2012 (25%). Quantities collected in 2011 range from 0.2 (Netherlands, Austria) to nearly 0.3 kg/cap/year (Denmark, Switzerland).

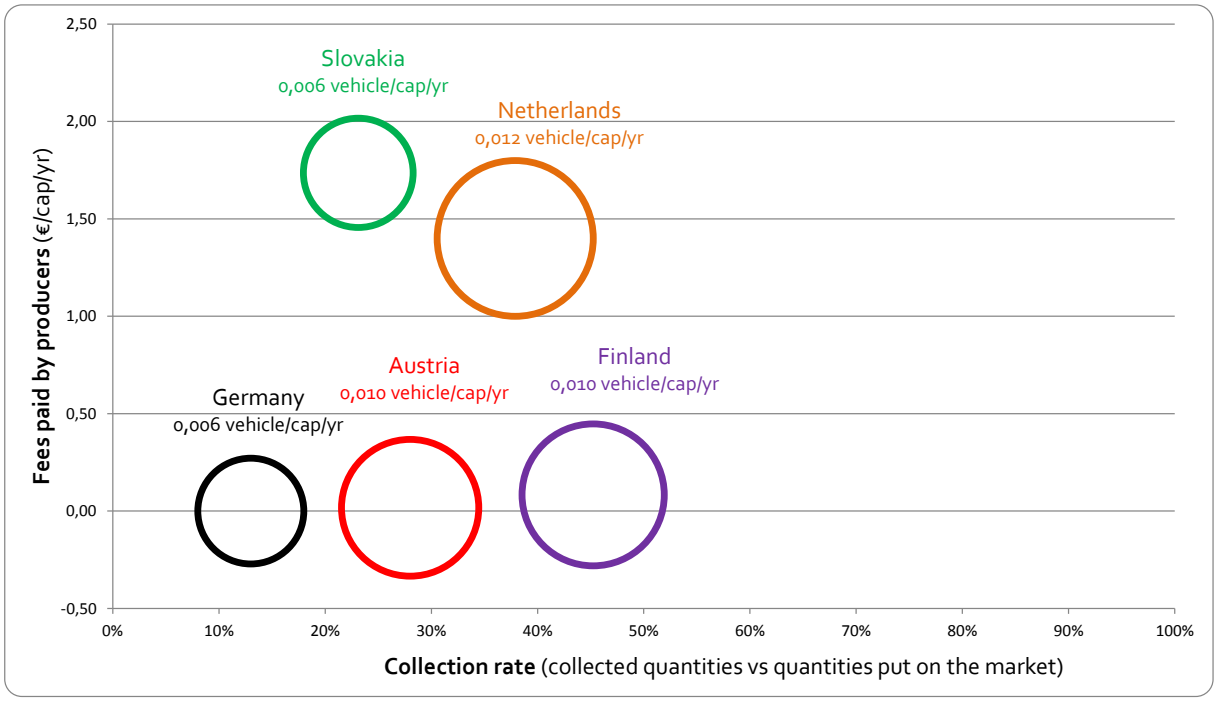
Annual producers' fees vary greatly from one country to another. The EPR scheme for portable batteries producers is much more expensive in Belgium[3] and in Switzerland (1.5-2 EUR/cap./year) than in the four other countries (less than 0.5 EUR/cap./year).

[3] From 1 April 2014 the fees for battery producers in Belgium have dropped from 0,1239€ to 0.075€ per battery, a reduction of 40%. Further reductions and links with type of batteries are expected in the future.

Out of the six countries studied, four have a fairly cost-efficient scheme and homogeneous performance for portable batteries.

The positive market value of industrial and automotive batteries ensures very high collection rates. All six Member States declare 100% collection rates. These EPR schemes are financed by revenues from recycled materials, and no financial contribution from producers is needed.

**Figure 3: Cost effectiveness of EPR schemes for ELVs in 2011**



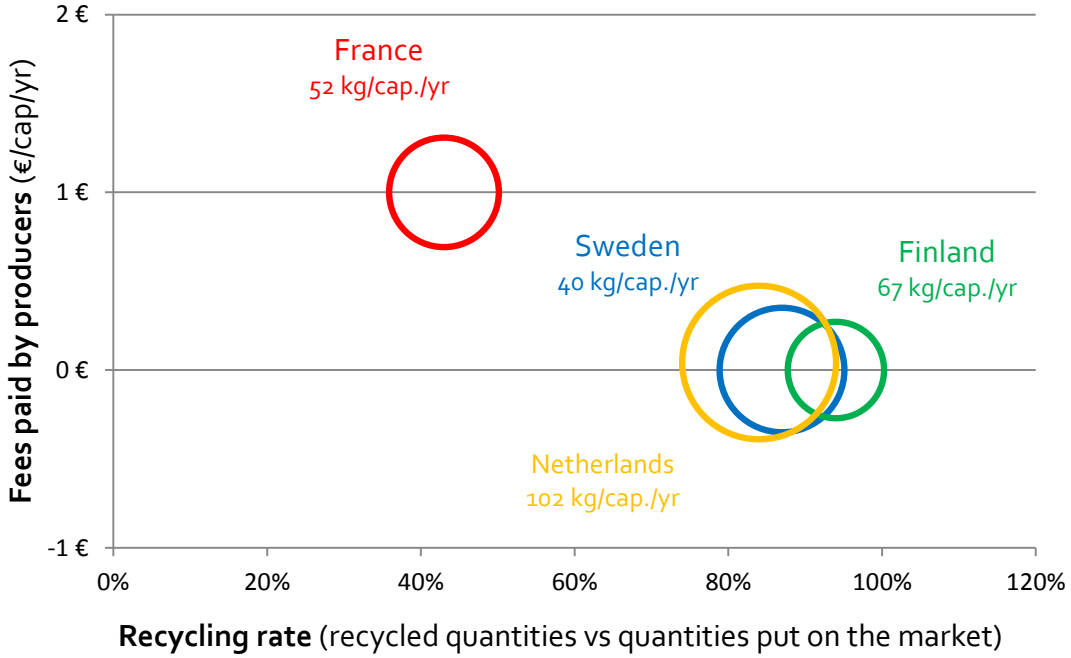

Regarding vehicles collected in 2011, two groups of countries can be distinguished: two schemes deal with only 0.006 vehicles per capita (Germany and Slovakia), whereas three schemes manage nearly twice the amount per capita (Austria, Finland and the Netherlands).

Annual fees paid by producers (manufacturers or importers) vary greatly from one MS to another. They range from no fee (Germany, where there is no PRO at all) or very low fees (3-4 EUR/vehicle, Finland, Austria) to 45 EUR/vehicle (Netherlands) and even 66 EUR/vehicle (Slovakia). This wide gap is due to the fact that some PROs actually cover part of the collection and treatment costs, whereas other PROs do not. From this point of view, the Austrian, German and Finnish schemes appear much more cost effective than the Dutch or Slovakian ones. However, in Slovakia funds raised are partly invested in new treatment technologies.

Despite this discrepancy regarding fees, recycling rates[4] are high and homogeneous: they range between 83% (Finland,[5] Netherlands) and 92% (Germany). All the studied countries have therefore reached the targets set by the ELV directive.

[4] On the basis of what has been collected.

**Figure 4: Cost effectiveness of EPR schemes for graphic paper in 2011**

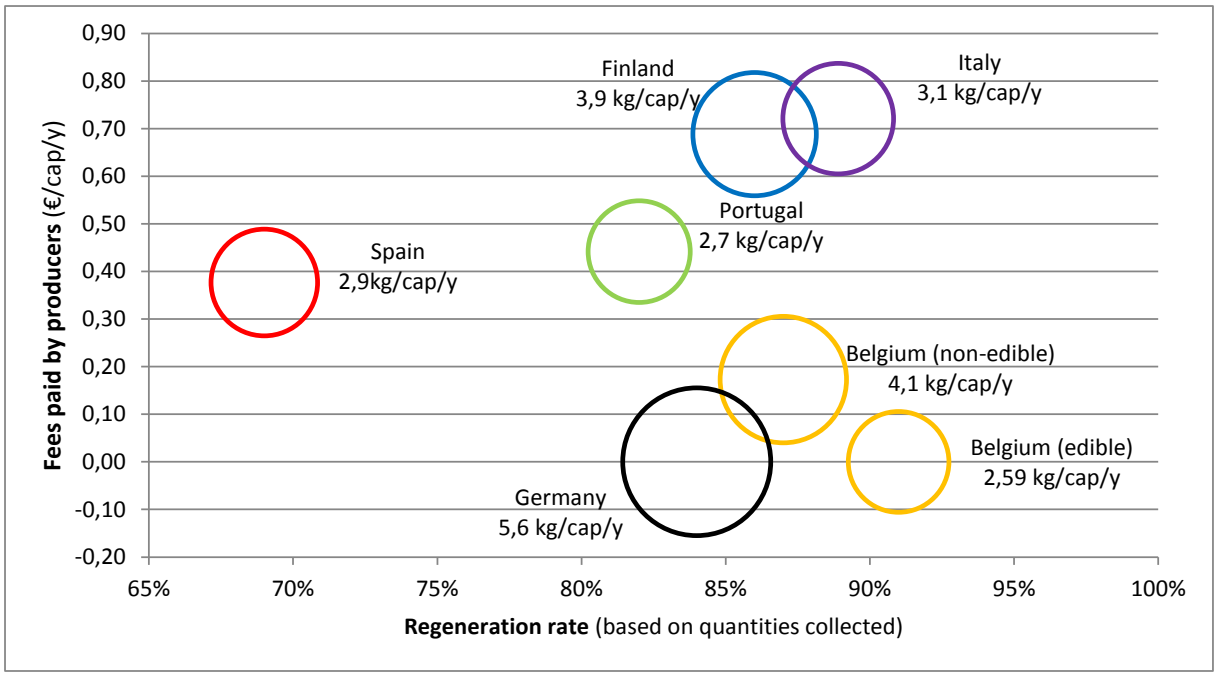



Recycling rates vary greatly: from 43% (France) to 87% (Finland) and 94% (Sweden). This gap is mostly explained by the higher market value of collected waste paper in Scandinavian countries.

In fact, in Finland and Sweden, there are currently no fees: the costs of the scheme are covered by the value of waste paper collected and sold as secondary raw material. In the Netherlands, fees are only levied once every four years to cover for the administrative expenses of the PRO (less than 0.05€/cap./yr). Fees for the financing of the collection scheme are paid by producers in the French case only (1 EUR/cap./yr in 2011).

[5] 2010 data.

**Figure 5: Cost effectiveness of EPR schemes on oils in 2011**

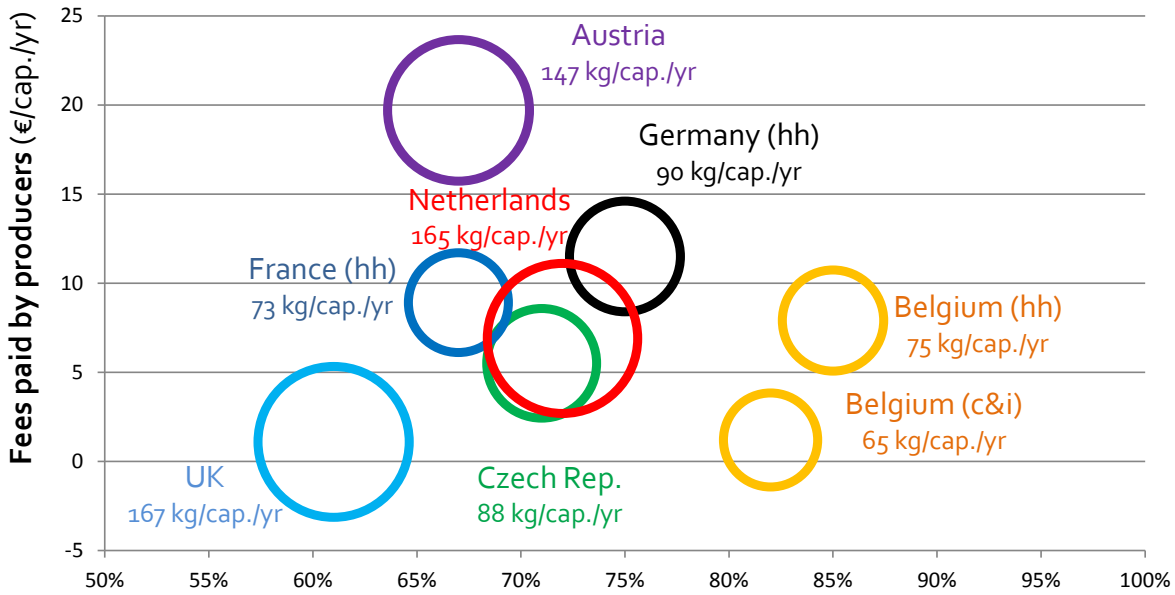



Most of the instituted EPR schemes (except the Belgian one) cover exclusively mineral-based lubricant oils (industrial, non-edible). The quantities of non-edible waste oil collected vary significantly: from 2.7 kg/cap./year (Portugal) to 5.6 kg/cap./year (Germany). Regeneration rates range between 69% (Spain) and 91% (Belgium).

In Germany, no fee is required from producers: the scheme is self-financing (revenues cover the costs for collection and treatment). In other countries, the total amount of fees collected in 2011 varies from less than 0.2 EUR/cap. (Belgium) to more than 0.7 EUR/cap. (Italy).

The Belgian scheme seems to be the most cost effective: achieving high regeneration rates with a relatively low fee level. The Italian and Finnish schemes achieve fairly high regeneration rates but are much more expensive for producers. The Portuguese and Spanish schemes are about as expensive as each other and cover a similar volume of waste oils (in tonnes/cap./yr) but the Spanish scheme achieves a lower regeneration rate (69% compared to 82%), as 32% of the industrial oils are incinerated with energy recovery.

**Figure 6: Cost effectiveness of EPR schemes for packaging (2010 or 2011)**




**Recyling rate** (recycled quantities vs quantities put on the market)

The quantities covered by an EPR scheme vary from around 75 kg/cap./yr (France, Belgium) to around 165 kg/cap./yr (Netherlands, UK). Most of the differences come from the different scopes of EPR: in some MS, EPR covers only household packaging waste, whereas in other countries it also covers commercial and industrial packaging.

The recycling rate is lowest in the UK (all packaging, 61%) and highest in Belgium (household packaging, 85%). All the studied schemes achieve the targets set by the corresponding Directive.

Fees paid by producers range from 1.1 EUR/cap. (UK, 2011) to 19.7 EUR/cap./yr (Austria, 2012). This very wide range is notably due to the different levels of cost coverage. In the UK, it is estimated that the fee covers only 10% of the total cost of the system, whereas in most other schemes, 100% of net costs are covered (80 % in France).

The WEEE recycling rates across countries are fairly homogeneous. All the studied schemes achieve the targets set by the WEEE Directive. High discrepancies arise with regardsto the collected quantities: they range from 2.0 kg/cap./yr (Latvia) to 17.5 kg/cap./year (Sweden). The new collection targets set by the recast Directive represent a challenge for most Member States, including in this relatively well-performing sample.

It was not possible to obtain any financial information for the WEEE schemes. The explanation given by the sector links this overall lack of transparency to the high level of competition on the WEEE market, which makes it difficult to share economic information, even aggregated. As a result, and this is very specific to this sector, a complete benchmark could not be realised.

### A severe lack of transparency and availability of reliable data

Several **methodological difficulties** were encountered during data collection, analysis and EPR system comparison. Extracting and processing comparable quantitative data from the 36 case studies was considerably handicapped by the **lack of transparency and availability of reliable data, especially in the WEEE sector**.

Comparing the performance of six different streams is in itself difficult. However even when comparing several EPR schemes for the same stream, various pitfalls arise:

- **Scope**: It is not always possible to clearly distinguish between household and commercial and industrial waste accountability.
- **Data availability and confidentiality**: when several PROs are in competition, it is much more difficult (and sometimes impossible) to obtain data on fees, costs and revenues.
- **Cost coverage, market structure, historical organisation of waste management (see below)**
- **Methods for data collection and reporting** differ from one country to another, and there is an uncertainty associated with all data provided.

### The best performing schemes are not the most expensive

**Besides the lack of transparency** on key quantitative elements, some clear conclusions emerge from this analysis:

- **The best performing schemes are not, in most cases, the most expensive**.
- **Fees paid by the producers vary greatly for all product categories**. These differences reflect either a difference in scope and cost coverage, or in the actual net costs for collection and treatment of waste (or both).
- **No single EPR model emerges as the best performing and the most cost-effective**.

This last statement can be explained by two main elements:

- Comparison between different product streams is impossible, as the quantities, types of waste, and therefore the organisation of operations, are not comparable; also within each product stream, the sample is too small to conduct any statistically significant analysis, even if it already shows wide spreading across the sample.
- Costs and performance are influenced by many factors, including **factors external** to the design and implementation of the EPR scheme, for example:
  - Population density and country geography;
  - Historical development of the waste management infrastructure;
  - Value of secondary materials on the national market;
  - Awareness and willingness of citizens to participate;
  - Existence of complementary waste policy instruments, especially economic instruments like pay-as-you-throw schemes and landfill taxes.

## Four main issues considered for guidance through a consultative process

This in-depth analytical work of 36 case studies has fed four main issues considered for guidance on EPR, among the many design and implementation features compared:

1. **Allocation of responsibilities among stakeholders:** the responsibility of producers may range from simple financial responsibility to full organisational responsibility.
2. **Costs coverage**: what types of costs are covered by EPR and in which proportions? To what extent does a producer's financial contribution truly reflect the end-of-life costs of its products?
3. **Fair competition**: How is economic competition organised within EPR schemes, in particular at the level of Producer Responsibility Organisations (PROs) and waste management operations?
4. **Transparency and control**: which are the reporting requirements for each actor? Who monitors the different aspects of an EPR scheme and how?

Each of these main issues is addressed following a similar structure:

- **Presentation of the issue under consideration**
- **Findings from the case studies benchmark**
- **Taking the stakeholders' expertise into account**
- **Towards possible guiding principles**

**Inputs regarding good practices and guiding principles were solicited** from a wide range of actors, including: industry federations and producers, PROs, waste management operators, national, regional and local public authorities and NGOs. **A stakeholders' workshop** was organised in September 2013 in Brussels in order to encourage discussion between stakeholders and to provide collective feedback about good practices for the implementation of EPR in the EU. Finally, **an online consultation** was launched in November 2013, focusing on a set of ten proposed guiding principles.

## 1. Imprecise responsibilities and insufficient formal dialogue

The following different types of PRO responsibility were investigated:

- **'Simple' financial responsibility**
- **Financial responsibility through contracts with municipalities**
- Financial responsibility and **partial organisational responsibility**
- Financial responsibility and **full organisational responsibility**

As can be seen in the table below summarising the types of responsibility sharing observed for the 36 EPR schemes:

- ELVs and waste oils are mostly managed through 'financial EPR';
- Waste batteries and EEEs are mostly managed through (partially or fully) 'organisational EPR';
- Situations are more diverse in the packaging and graphic paper sectors.

**Table 3: Types of producers' responsibilities in the 36 EPR schemes studied**

| Main system |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Financial responsibility | AT<br>FI<br>NL<br>SK<br>SE | FI<br>IT<br>PT<br>ES<br>BE[6] | BE – c&i<br>UK | | BE[7] | |
| Financial responsibility through contracting with municipalities | | BE[8] | CZ<br>FR<br>NL | FR | | |
| Financial Responsibility with partial organisational responsibility | | | BE – hh | FI | AT<br>BE[9]<br>DK<br>FR<br>NL<br>CH | DK – hh<br>IE<br>SE<br>UK |
| Financial Responsibility with full organisational responsibility | DE | | AT<br>DE | SE | | DK – c&i<br>FI<br>FR – hh<br>LV |

The study also illustrates the importance of maintaining a dialogue between the different stakeholders that participate in EPR schemes. However, only few specific dialogue structures are in place:

- **In most cases, no formal dialogue initiative was identified,** which can sometimes cause contentious relationships between stakeholders.
- The absence of a specific structure does not mean that there is no dialogue at all between the stakeholders: **dialogue between the stakeholders usually exists informally**.
- Several initiatives foster cooperation between EPR actors (e.g. the set up of a formal consultation committee involving representatives of various stakeholders).

[6] Non-edible oils
[7] Automotive batteries
[8] Edible oils
[9] Portable batteries

**SUGGESTED GUIDING PRINCIPLES:**

**- Statement n°1: The definition and objectives of EPR should be clarified**

**- Statement n°2: The responsibilities and roles of each actor should be clearly defined along the whole product life cycle**

### 2. Producers' fees seldom reflect the true management costs

The extent to which net operational costs are assumed by PROs (and therefore covered by producers' fees) is **highly variable** and depends notably on the share of organisational and financial responsibilities of the various stakeholders, as well as on the national framework for EPR. For example, for packaging, the cost coverage by producers' fees range from around 10 % (UK) to 100% (AT, BE, CZ, DE, NL) of net separate collection and treatment costs.

When the costs that need to be covered by EPR do not fall within the operational responsibility of producers, nor within the direct functioning costs of the PROs, some EPR systems use a **reference cost** to estimate the amounts to be covered.

Although sound waste management and recycling have generally improved, notably through the implementation of EPR, **there is no clear evidence of a strong positive impact of EPR on the eco-design of the products**:

- Few or no targets or indicators regarding eco-design have been developed.
- The development of collective schemes, which mutualise responsibilities of many different individual producers, involve a risk of 'averaging' the costs among producers, thereby de-incentivising individual efforts for eco-design.

However some schemes include mechanisms that lower the fees for eco-designed products (or penalizing the least sustainable products) and that ensure that producer fees reflect recyclability in order to favour industrial eco-design approaches.

There seems to be a consensus on the fact that **EPR systems should cover the collection, sorting and treatment costs of separately collected waste management minus the revenues from recovered material sales** (thus the full net cost).

'Full-costs' theoretically include (in addition to those aforementioned):

- Collection, transport and treatment costs for non-separately collected waste (waste covered by EPR but not entering the separate collection channel, e.g. waste collected together with mixed municipal waste);
- Costs for public information and awareness raising (in addition to a PRO's own communication initiatives), to ensure participation of consumers with in the scheme (i.e. through separate collection);
- Costs related to waste prevention actions;
- Costs for litter prevention and management;
- Costs related to the enforcement and surveillance of the EPR system (including, auditing, measures against free riders, etc.).

In addition, for those costs explicitly covered by the EPR system, the level of coverage (full or partial) by the producers varies. This level of coverage is closely linked to the share of responsibilities between stakeholders.

**SUGGESTED GUIDING PRINCIPLES:**

**- Statement n°3: The design and implementation of an EPR scheme should at least ensure the coverage of the full net costs related to the separate collection and treatment of the end-of-life products.**

**- Statement n°4: The fees paid by a producer to a collective scheme should reflect the true end-of-life management costs of its specific products.**

## 3. Fair competition should be ensured

The question of competition[10] in EPR schemes may arise at different levels:

- Organisation of the system to fulfil the producers' obligations (competition among PRO's)
- Collection and sorting of waste
- Recovery and secondary raw materials supply
- Consulting and expertise (e.g. for local authorities)

In the past few years, European and national competition and antitrust authorities have been led to take several court judgements, in order to correct unfair situations.

As shown in Table 4 below for each of the six product streams considered, there is no clear tendency per waste stream regarding competition among PROs. What can be noted for example is that:

- WEEE are always managed by several competing PROs, whereas
- ELVs are never managed by several competing PROs.

Table 4: Existence of competition among Producer Responsibility Organisations

| Main system | |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| No competition | No collective scheme | DE | DE | | | | |
| | Centralised | FI<br>NL | FI<br>IT | CZ<br>FR | FR<br>NL | NL<br>CH | |

[10] "Competition" in this study does not imply the absence of dominant market positions or restrictions of competition, but only the existence of several competitors in one market.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | organisation | SK<br>SE | PT | NL | SE | BE | |
| | Several PROs, not competing | AT | BE[11] | AT[12]<br>BE | | FR | |
| **Competition** | Several competing PROs *(number of competing PROs)* | | ES (2) | AT (7)[13]<br>DE (10)<br>UK (>30) | FI (2) | AT (4)<br>DK (4) | DK (3)<br>FI (3)<br>FR (3)<br>IE (2)<br>LV (4)<br>SE (2)<br>UK (39) |

Centralised systems are frequent, as well as cases with several competing PROs. And **there is no evidence that a centralised organisation is preferable to the introduction of competition among PROs or vice-versa**.

In conclusion, all stakeholders agreed that a "one-size-fits-all" solution is not convenient and that the most important aspect is to ensure a level-playing field within a legal framework ensuring fair competition along with efficient enforcement and control by the public authorities.

**SUGGESTED GUIDING PRINCIPLE:**

**- Statement n°5: Notwithstanding the way competition takes place, a clear and stable framework is necessary in order to ensure fair competition, with sufficient surveillance and equal rules for all, supported by enforcement measures (including sanctions).**

### 4. Insufficient transparency and need for surveillance

There is a need of **a high level of transparency:**

- On fees, costs, revenues and waste management performances
- For producers, PROs and potentially for other actors (e.g. local authorities managing waste)

The present study is additional proof that data collection and reporting regarding EPR and waste management need to be improved and harmonized. At present, a considerable part of the data published can be regarded as questionable. Better data is needed in order to improve performance monitoring and for strategic decision-making.

[11] Different scope: edible and non-edible oil

[12] Household packaging

[13] Industrial packaging

Optimal transparency can be reached through different measures:

- Ensure data availability, especially when several PROs are in competition;
- Ensure materials' traceability;
- Develop relevant indicators and ensure comparability;
- Precisely define data collection and reporting methods, notably: recycling rates and operational costs.

**Identification of free riders and enforcement**

Despite the fact that the responsibility for identifying free riders can be shared between PROs and public authorities, only public authorities can ultimately enforce sanctions. In some MS, national governments do not entirely carry out this role. It may be due to:

- A lack of capacity: in some MS, enforcement is lacking and unauthorised facilities are in operation;
- A lack of means: more focus and resources are needed at the national level. In different cases, the creation of an ad-hoc independent control authority may be appropriate.

**Surveillance of treatment operations**

A lack of traceability appears at the treatment stage, notably for ELVs and batteries such as:

- De-registration problems;
- Unauthorised take-back points or collectors and/or lack of treatment plants.

Surveillance should be reinforced notably concerning both the quantities treated, the environmental quality of the dismantling and recycling process and the exports of waste. This is particularly the case for ELVs and batteries.

**Surveillance of PROs**

Finally, there is a need for clear guidance on what a PRO is expected to do and achieve. A consolidated public surveillance over PROs is needed. It may be provided through (a combination of):

- Regulation;
- Recognition procedures defining obligations, targets and sanctions;
- Frequent and random audits;
- Enforcement mechanisms.

**SUGGESTED GUIDING PRINCIPLES:**

**- Statement n°6: Transparency is required on the performances and costs of EPR schemes.**

**- Statement n°7: Key definitions and reporting modalities should be harmonised at the European level.**

**- Statement n°8: Member States and obligated industry should be co-responsible for the monitoring and surveillance of EPR schemes, and should ensure that adequate means for enforcement are in place.**

# Chapter 1. Context, objectives and approach

## 1.1 Context and objectives

The objective of this study is to **describe, compare and analyse different types of EPR (extended producer responsibility) systems operating in the EU in order to identify guiding principles for their functioning**.

Two main complementary approaches were implemented:

- A **bottom-up approach**, inferring key issues from:
  - a general overview of EPR schemes throughout EU Member States
  - followed by the in-depth analysis of 36 case studies, focusing on six specific product streams.
- **A top-down approach**, allowing the inclusion of accurate and diversified expertise from nearly 100 stakeholders from all over Europe and covering many different products and waste streams.

The main issues that determine the efficiency and effectiveness of EPR systems were identified and analysed (see Chapter 3. ), leading to eight recommendations on how to design efficient and effective EPR systems (as formulated in Chapter 4. ). These recommendations may be used by the European Commission to inform the revision of the Waste Framework Directive[14] and ensure the **diffusion of optimal conditions for EPR development** throughout the Member States.

The Extended Producer Responsibility (EPR) concept was first defined by Thomas Lindhqvist in 1990. According to the Organisation for Economic Co-operation and Development (OECD), EPR is "*an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle*". EPR, as a principle of product policy, was introduced in legislative acts in the early 1990s to address the life-cycle issues of products, using a target-oriented approach, instead of traditional command-and-control type regulation.

The EPR policy is thus characterised by the provision of incentives to producers to take into account environmental considerations when designing their products. As the OECD puts it, "*while other policy instruments tend to target a single point in the chain, EPR seeks to integrate signals related to the environmental characteristics of products and production processes throughout the product chain*".

Compared to the traditional solid waste management approach, EPR involves a shift in responsibility (administratively, financially and/or physically) from governments or municipalities (and thus taxpayers) to the entities that make and market the products that are destined to become waste. To this extent, EPR still constitutes the implementation of the polluter-pays principle (PPP), but induces a change in the definition of the "polluter'. Whereas in the classical version of the PPP the *polluter* was the individual directly causing pollution (i.e. the consumer),

[14] Directive 2008/98/EC

within the EPR framework the *polluter* is the economic agent who can play a decisive role in avoiding pollution, e.g. through eco-design efforts.

The economic reasoning behind the EPR concept is to have producers internalise treatment and disposal costs so that they have an incentive to design products that last longer and are more easily treated after use. In practice, however:

- the post-consumption cost does not adequately take into account the environmental cost of the waste treatment (recycling is then disadvantaged, which justifies the imposition of imposing recycling targets);
- costs are passed on to consumers, reducing the incentive for producers to invest in eco-design;
- producers often exert this responsibility collectively, through Producer Responsibility Organisations (PROs) (for a definition see Box 1) so that benefits gained from producers who improve their products are distributed to all producers who belong to the same PRO.

Individual producer responsibility, i.e. the take back of used products by a single producer, is rare and limited to instances where one producer sells its products only to a limited number of users. It would be much too complex if all producers of a certain product type set up their own take back systems. As a consequence, collective compliance schemes[15] are much more common than individual schemes. In collective schemes, a specific organisation (PRO) is set up to implement the EPR principle in the name of all the adhering companies. PROs potentially exert three main functions, which can be executed in different ways:

- financing the collection and treatment of the targeted solid waste;
- organising and supervising these activities;
- managing the corresponding data.

**Box 1: A few key definitions**

**EPR system** or **EPR scheme**: Any system set up by one or several producers to implement the EPR principle. It can be an individual system (or individual compliance scheme) when a producer organises its own system, or a collective system (collective compliance scheme) when several producers decide to collaborate and thus transfer their responsibility to a specific organisation (a PRO).

**Producer Responsibility Organisation** or **PRO**: Entity set up in collective EPR schemes to implement the EPR principle in the name of all the adhering companies.

**Fees**: Tariff paid by a producer to have its products dealt with through a PRO.

The legislative framework for the development of extended producer responsibility at the European Union level is composed both by general legislation on waste management, and specific directives framing the recovery and recycling of specific waste streams.

[15] aa structure set up together by several producers to implement the EPR principle (cf. glossary).

The Waste Framework Directive (2008/98/EC) sets the general framework for waste management in the European Union. It enables Member States to set up Extended Producer Responsibility schemes. Article 8 introduces EPR in the following terms:

> "In order to strengthen the re-use and the prevention, recycling and other recovery of waste, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility. Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities. These measures may include the obligation to provide publicly available information as to the extent to which the product is re-usable and recyclable.[16]"

The current study focuses on six waste streams:

- packaging,
- waste electrical and electronic equipment (WEEE),
- end-of-life vehicles (ELV)
- batteries and accumulators (B&A)
- waste oils and
- graphic papers.

The European Union has issued waste stream specific directives for the management of the first four of these waste streams. The recovery and recycling targets set in these directives are summarised in Box 2 below.

**Box 2: Targets set up by EU waste directives**

**The Packaging and Packaging Waste Directive (94/62/EC):**

- 60% waste packaging recovery by 2008; and
- 55% waste packaging recycling (50% for metal, 60% for glass, paper/cardboard, 22.5% for plastics and 15% for wood) by 2008.

**The Batteries Directive (2006/66/EC):**

- 100% recycling of collected batteries by 2009;
- 65% recycling for collected lead-acid batteries, 75% recycling for collected nickel-cadmium batteries and 50% recycling for other collected batteries by 2011;
- 25% collection rate by 2012; and
- 45% collection rate by 2016.

[16] Waste Framework Directive (2008/98/EC), Chapter II, article 8 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0098:EN:NOT)

**The ELV Directive (Directive 2000/53/EC):**

- vehicles to be recoverable to a minimum of 95%, and reusable and/or recyclable to a minimum of 85% by 2005;
- 100% collection, 85% recovery and 80% recycling including reuse by 2006; and
- 100% collection, 95% recovery and 85% recycling including reuse by 2015.

**The recast WEEE Directive (2012/19/EU):**

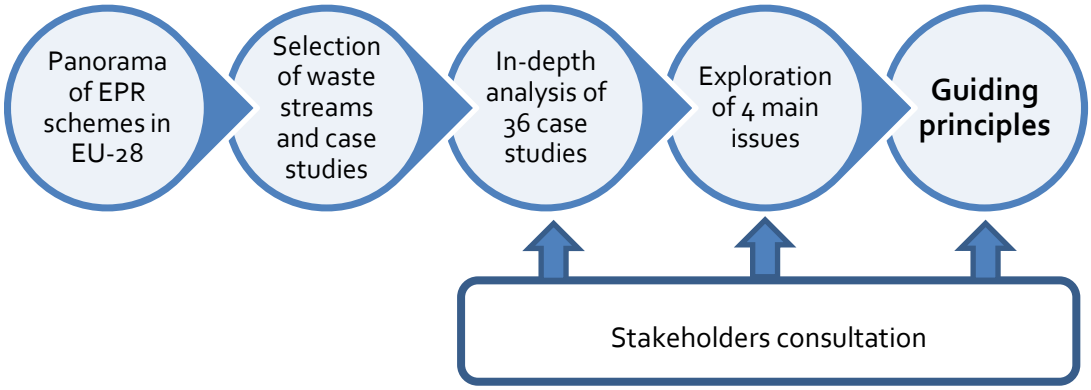
- From 2016 the collection target shall be 45% of EEE placed on the market (in the previous 3 years;
- From 2019, the collection target shall be either 65% of EEE placed on the market (in the previous 3 years), or alternatively 85% of WEEE generated each year;
- From 13 August 2012 to 14 August 2015, the recovery target is set to 70-80% (increasing to 75-85% from 15 August 2015 onwards) depending on the category of WEEE;
- From 13 August 2012 to 14 August 2015 the recycling/ preparation for re-use target is set to 50-75% (increasing to 55-80% from 15 August 2015 onwards) depending on the category of WEEE.

Three of these directives (B&A, ELV and WEEE) specifically require or encourage Member States to set up Extended Producer Responsibility for the products they cover. For packaging, although there is no obligation to set up an EPR scheme, most Member States have chosen this option (at least for household packaging, see Chapter 2. ).

## 1.2 Methodological approach

The main objective of this study is to develop guiding principles on how to design efficient and effective EPR schemes. In order to identify these guiding principles, a six-component approach was developed, as shown in **Figure 7**. Below is a description of each of these components.

**Figure 7: The six-component approach for the project**



### 1.2.1 Panorama of EPR schemes in EU-28

To begin with, a broad panorama of EPR schemes in the European Union was prepared with the aim of providing a clear and comprehensive outlook of the current state of development of Extended Producer Responsibility in all EU Member States.

For each of the 28 Member States, the waste streams for which an EPR system exists at the national scale were identified. This included:

- Those waste streams subject to the EPR concept via European legislation, i.e.:
  - batteries and accumulators (B&A).
  - electrical and electronic waste (WEEE),
  - end-of-life vehicles (ELV), and
  - packaging,
- Other schemes implemented through national regulation, or voluntary schemes, including schemes for: tyres, waste oil, graphic papers, farm plastics, medicines and medical products, plastic bags, photo-chemicals and chemicals, newspapers, refrigerants, pesticides and herbicides, lamps, light bulbs and fittings, textiles, construction materials, etc.

In agreement with the European Commission and in order to focus the study on the most common product streams for which EPR systems exist, key criteria, notably related to the historical evolution and current performance of EPR systems, were defined and investigated for six product categories (batteries, EEE, graphic papers, packaging, oils and vehicles,):

- Date of creation of PROs
- Number of PROs dealing with a specific waste stream
- Existence of a take-back obligation
- Territorial coverage
- Recycling/recovery rates achieved
- Rates of 'free riders'[17]
- Tariffs (fees) charged by PROs to producers
- Private or public-led organisation

Information related to costs and cost effectiveness was sought, especially indicators linking costs and achievements. Special emphasis was put on collecting data such as cost per unit/kg, cost per inhabitant, PROs' turnover/revenues, percentage of costs covered by producers, administrative costs, and costs of information and awareness-raising activities. However in practice it was not possible to collect such data in a comprehensive way, mainly for the following reasons (see also chapter 2 for more explanations regarding the difficulties encountered):

- When several PROs are competing, financial data is often kept confidential;
- Such data was seldom available online in PROs' activity reports;

[17] Producers obliged by an EPR system, but not contributing

- When costs were publicly available, the level of detail was often very limited.

Data in relation to the key criteria were derived from the previous study on the use of economic instruments and their impacts on Member States' waste management performances[18]. Additional key data sources were used:

- Eurostat databases
- PROs' annual reports
- EEA Topic Centre on Sustainable Production and Consumption[19]
- National waste databases
- Association of Cities and Regions for Recycling and Sustainable Resource Management (ACR+) EPR club[20] (notably their Waste Prevention Database)
- Technical reports on municipal waste management

In addition, stakeholder inputs (especially from national representatives) were solicited in order to ensure that all waste streams subject to EPR schemes had been identified in each MS.

Such an extensive investigation revealed that there is a **severe lack of available information in general, and when available, the information is not easily comparable** (see chapter 2 for more details):

- costs of EPR schemes (though this varies by Member State – for example, reports are more readily available for Belgium than for Germany or the UK);
- EPR technical performance (quantities put on the market, collected quantities, recycling rates as Eurostat data are hardly comparable, being calculated in very diverse ways).

Data collected for each of the key criteria were analysed and presented via clear tables and graphics (see Chapter 2 and Annex 5.1).

### 1.2.2 Selection of waste streams and case studies

Thirty-six case studies were selected upon which to perform an in-depth analysis. Six product streams were first chosen, then an average of six MS for each stream were selected in order to obtain the 36 case studies. The idea was to focus on product streams for which EPR exists in many MS, allowing for the selection of a wide range of MS and thus ensuring the derivation of meaningful and broadly applicable guidance from the analysis.

The number of existing EPR schemes for key product streams and the amount of waste generated for each was taken into account in the selection process (see chapter 2). The following product/waste streams were selected: **batteries, end-of-life vehicles, graphic paper, oils, packaging** and **waste electrical and electronic equipment** (WEEE).

[18] DG ENV (2012) http://ec.europa.eu/environment/waste/pdf/final_report_10042012.pdf

[19] http://scp.eionet.europa.eu/

[20] http://www.acrplus.org/epr_Club

Then, all existing national EPR schemes for these six product/waste streams were succinctly summarised, in order to allow the selection of 36 schemes, based on the following criteria:

- **Start date of EPR schemes**: the longest-established EPR schemes were preferred, as these were the most likely to provide valuable experience and lessons for the analysis.
- **Performance**: the schemes presenting high levels of performance (technical and/or cost-efficiency) were preferred.
- **Diversity of EPR organisations**: the case studies were selected to obtain a sample of several types of organisations (e.g. one or several PROs, possibility of individual compliance, etc.).

Table 5 shows the 36 EPR schemes selected for case studies by country and product/waste stream.

**Table 5: The 36 EPR case studies analysed**

| | | | | | |
|---|---|---|---|---|---|
| Austria | Austria | Finland | Belgium | Austria | Denmark |
| Belgium | Finland | France | Finland | Belgium | Finland |
| Denmark | Germany | Netherlands | Germany | Czech Rep. | France |
| France | Netherlands | Sweden | Italy | France | Ireland |
| Netherlands | Slovak Rep. | | Portugal | Germany | Latvia |
| Switzerland | Sweden | | Spain | Netherlands | Sweden |
| | | | | United Kingdom | United Kingdom |

### 1.2.3 In-depth analysis of 36 case studies

For each selected EPR scheme a case study was performed by means of preparing a factsheet. The 36 factsheet (each between 15-25 pages in length) were produced using a unique framework designed to encompass all aspects of EPR: qualitative and quantitative, descriptive and analytical. Box 3 shows the structure of the factsheets[21].

The 36 case studies were analysed in detail with a view to draw lessons and identify good practices. Relevant stakeholders were interviewed in order to complete the understanding of the situation.

**Box 3: Structure of the 36 case studies factsheets**

Each case study includes the following sections:

- Legal framework and objectives
  - General legal framework
  - Targets
  - System functioning
- Role of system actors
  - Producers
  - Retailers/distributers
  - Municipalities
  - Waste collection and treatment operators
- System performance
- Cost efficiency
- General governance
- Governance of producer responsibility organisations
- Surveillance of the system
  - Verification of performance reporting
    - Risk assessment
    - Reporting and monitoring
    - Data availability
  - Financial surveillance
    - Free riders
    - Penalties
- Competition
  - PROs
  - Treatment operators
- Eco-design and prevention
- Impact on consumers
- Advantages and success factors of the system
- Disadvantages and possible challenges of the system
- Best practices and potential golden rules
- References
- Annex

This benchmark has been possible thanks to thorough data collection and stakeholder consultation.

For each case study, a 2-page synthesis was prepared in order to make the essential information easily accessible.

[21] The factsheets are available on the project website: http://epr.eu-smr.eu.

Table 6: Structure of the synthetic outlook for each case study

| Indicator | Description |
|---|---|
| **Collective systems** | Indication of whether collective schemes exist, to which producers can transfer their EPR obligation. |
| **Possibility for individual systems** | Indication of whether producers can chose to fulfil their EPR obligation individually. |
| **Performance** (collection rate, recycling rate, etc.) | Indicator customised by product stream; performance expressed in a percentage (e.g. of quantities put on the market). |
| **Cost efficiency** | Indicator normalising the costs spent in the system by relating them to the amount of waste treated and/or the population. Expressed here as cost per inhabitant, when available data allows for this calculation. |
| **Competition** | Indication of whether competition exists between PROs (e.g. more than one PRO with the same scope), and between collection and treatment operators. |
| **Free riders** | Amount of producers or importers who are theoretically subject to EPR, but who do not join a PRO or set up an individual scheme. Indicated in percent if possible, otherwise qualitative/anecdotal. |
| **Penalties** | Indication of types and level of penalties in the system. |
| **Reporting** | Indication of who reports to whom and indication of the frequency of reporting. |
| **PRO governance** | Indication of stakeholders involved in making decisions within the PROs. |
| **Eco-design, prevention & impact on consumers** | Any actions identified in relation to eco-design, prevention and communication/awareness raising. |

With these monographs, a comparative analysis based on consolidated data was then possible. Different aspects related to the systems' functioning were investigated: share of responsibilities, dialogue procedures, competition conditions, transparency aspects, and reporting and surveillance modalities. The objective of the comparative analysis was to identify best practices in the different areas examined.

Technical and financial performances were systematically compared, product stream by product stream:

- In order to neutralise the density bias (i.e. the fact that costs may be lower in densely populated countries), not only relative indicators but also absolute values of **quantities collected and/or recycled** have been provided.

- Data related to **technical performance** were collected and re-calculated on a homogeneous basis (e.g. recycling rates were recalculated based on raw data, e.g. quantities recycled vs. quantities put on the market).
- In each MS, data related to **fees** has been aggregated from all the PROs of a product stream. It is therefore not an estimated average fee level, but the total amount of fees paid by all collectively organised producers.

This whole comparative study is included in the Annex, with a synthesis of this work presented in chapter 2.

### 1.2.4 Exploration of four main issues related to EPR design and implementation

This in-depth analytical work of 36 case studies, along with a permanent exchange with key stakeholders, has nurtured and structured four main issues considered for guidance on EPR, which are presented in chapter 3:

1. Share of responsibilities between stakeholders
2. Cost coverage and true cost principle
3. Fair competition
4. Transparency and surveillance

Each of these main issues is addressed following a similar structure:

- **Issues under consideration**: the issue at stake is briefly presented and explained *in abstracto*;
- **Empirical assessments from the sample benchmark**: the elements gathered from the 36 case studies are analysed in order to assess how this issue applies *de facto* and what are the most relevant corresponding practices.
- **Taking the stakeholders' expertise into account**: the contributions from the stakeholders are integrated to the analysis, deriving both from their position papers and from their active participation in the workshop.
- **Concluding remarks**: a summary and conclusion from all these elements is proposed.
- **Towards possible guiding principles**: suggestions for guidance are formulated, which will be treated in details in Chapter 4.

Following this structure, each of the four main issues is described, and then discussed on the basis of stakeholder feedback and findings from case studies. Conclusions are drawn, leading to possible guiding principles for the design and implementation of EPR schemes.

### 1.2.5 Guiding principles

Deriving from the empirical analysis of the general situation in the EU-28 and of the 36 case studies, 10 guiding principles were formulated at first. These statements were submitted to an online consultation of stakeholders.

As a whole, the stakeholders mostly agreed on the broad orientations suggested:

- Seven guiding principles were mostly consensual:
  - Statement 1 EPR definition, scope & objectives
  - Statement 2 Shared & defined responsibilities
  - Statement 7 Clearinghouse
  - Statement 8 Transparency
  - Statement 9 Definitions & reporting harmonisation
  - Statement 10 Monitoring & surveillance
- Three guiding principles were vividly discussed by stakeholders:
  - Statement 6 Clear and stable framework for fair competition
  - Statement 3 Full costs coverage
  - Statement 5 True cost principle
- And one statement was seriously questioned:
  - Statement 4 Reference cost

Eventually, Statements 4 and 8 were suppressed as guiding principles *per se* and their content was re-introduced *as policy options* in Statements 3 and 6 respectively.

Hence, **eight Guiding Principles were finalised**. For each principle, the most relevant policy options for the implementation of each Guiding Principle were identified and described.

### 1.2.6 Stakeholder consultation

The process of elaborating the case studies involved **frequent interactions** with stakeholders in order to gather information and key data. Key contacts for the preparation of the case studies were mainly PROs and national or regional authorities.

In a further step, **inputs regarding good practices and guiding principles were solicited** from a wider range of actors, including: industry federations, waste management operators, local public authorities and NGOs.

**A stakeholder workshop** was organised in September 2013 in Brussels in order to encourage discussion between stakeholders and to provide collective feedback about good practices for the implementation of EPR in the EU. The stakeholders were asked to react to several questions, related to the four main issues highlighted. They also brainstormed in small groups in order to identify common grounds of understanding beyond their respective individual interests. The list of workshop participants can be found in the annex and the minutes of the Workshop are

available on the project website[22].

Finally, **a written consultation** was organised in November-December 2013, focusing on a set of ten proposed guiding principles (and one preliminary statement). The questionnaire for this consultation is available on the project website[23]. Stakeholders were invited to react to each statement and express their expectations in terms of guidance from the European Commission. Nearly 60 stakeholders submitted feedback, including:

- 23 industry representatives (or industry federations)
- 12 PROs
- 9 treatment operators
- 7 regional and local authorities
- 2 national authorities and
- 5 NGOs

The filled questionnaires were examined in detail.

In all cases, **the stakeholders' expertise and contributions were taken into account** to shape the final proposition for EPR guiding principles, which are presented in chapter 4. The initial version of the proposed guiding principles and the synthesis of stakeholders' contributions (by type of actor) are to be found in the Annex.

[22] http://epr.eu-smr.eu/documents

[23] see above

# Chapter 2. General overview of EPR schemes in the EU

*This chapter provides a general overview of Extended Producer Responsibility (EPR) in the EU-28.*

*A general panorama of existing EPR schemes in Europe is provided, based on a succinct analysis of EPR schemes conducted at the beginning of this study, aiming at the selection of 36 case studies. A first comparison of the schemes performance was carried out based on data available at the European level (i.e. Eurostat databases).*

*Taking into account data availability limitations and huge discrepancies at the EU-level, 36 case studies of well performing EPR schemes are identified for an in-depth analysis. A qualitative and quantitative benchmark is presented for 6 product streams throughout 17 countries.*

*Finally, the analysis of the 36 case studies is balanced, and the very notion of "performance" for EPR schemes is discussed, taking into account pitfalls in terms of transparency and their current level of maturity.*

## 2.1 Existing EPR schemes in EU-28

Through the last 20 years, the EPR concept has been widely implemented in the EU with a great variety of EPR schemes and the creation of PROs.

For the four streams targeted by specific Directives (packaging, batteries, ELVs and WEEE), an EPR scheme has been systematically implemented in all Member States. Additional waste streams for which EPR schemes have been most commonly identified within the European Union are: tyres, graphic paper, oils, medical waste and agricultural films.

In addition to the main EPR schemes, other product streams are covered by a limited number of EPR schemes in some Member States: old/unused medicines, textiles, furniture, mobile homes, fluorinated refrigerant fluids, pharmaceuticals, lubricants, infectious healthcare waste, dispersed hazardous waste, plant protection product packaging and unused products, fertiliser and soil amendment packaging, seed and plant packaging and office equipment ink cartridges.

The tables below show a more detailed overview of existing schemes for the six product streams selected for this study. The following information is mentioned:

- Start date of EPR scheme(s)
- Whether EPR is, in practice, implemented individually or collectively (i.e. through PROs) by producers.
- Number of collective schemes (PROs), which may cover different product categories, or the same product category (in which case they are in competition)

### Table 7: Overview of EPR schemes in the EU for batteries

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| AT | A voluntary system in 1990 replaced by one obligatory but private in 2005 | Collective | 4 |
| BE | 1996 | Both | 2 |
| BG | 2009 | Both | 3 |
| CH | 2001 | Collective | 1 |
| CY | 2009 | Collective | 1 |
| CZ | 2002 (with new rules 2009) | Both | 1 |
| DE | 1998 | Collective | 1 |
| DK | 2009 | Both | 4 |
| EE | N/A | Both | N/A |
| ES | 2000 | Collective | 1 |
| FI | 2005 | Both | 4 |
| FR | Screlec 1999 | Both | 2 |
| GR | 2004 | Both | 3 |
| HU | Automotive batteries: 2002<br>Portable batteries: 2005 | Both | 6 |
| HR | 2006 | Collective | 1 |
| IE | 2008 | Both | 2 |
| IT | 2008 | Both | 21 |
| LT | 2009 | Both | 1 |
| LU | 2010 | Both | 1 |
| LV | 2006 | Both | 3 |
| MT | 2010 | Both | 1 |
| NL | 2008 | Both | 1 |
| PL | 2009 | Both | 3 |
| PT | 2010 | Both | 5 |
| RO | N/A | Both | |
| SE | 2009 | Both | 3 |
| SI | 2009 | Both | 3 |
| SK | 2001 | Collective | 1 |
| UK | 2009 | Collective | 5 |

Table 8: Overview of EPR schemes in the EU for graphic paper

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| FI | 1999 | Both | 2 |
| FR | 2007 | Collective | 1 |
| NL | 2005 (voluntary in 2001) | Both | 1 |
| SE | 1994, 1996 | Both | 2 |

Table 9: Overview of EPR schemes in the EU for ELV

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| AT | 2002 | Individual | |
| BE | 1999; 2004 | Collective | 1 |
| BG | 2004 | Collective | 2 |
| CY | N/A | N/A | N/A |
| CZ | 2009 | Individual | 0 |
| DE | 1998; amended in 2002 to transpose the ELV directive | | |
| DK | N/A | Collective | 1 |
| EE | 2009 | Individual | 0 |
| ES | 2002 | Collective | 1 |
| FI | 2004 | Collective | 2 |
| FR | 2006 | Individual | 0 |
| GR | 2004 | Collective | 1 |
| HU | Unknown | Appears to be individual | 0 |
| HR | 2006 | Individual | 0 |
| IE | 2006 | Individual | 0 |
| IT | 2005 | Collective | 1 |
| LT | 2005 | Both | N/A |
| LU | 2003 | Both | 1 |
| LV | 2004 | Both | 1 |
| MT | 2004 | | N/A |
| NL | 1995 for voluntary (ARN); 2002 for legally binding (ARN); 2011 for scooter-specific scheme | Collective | 2 |
| PL | 2006 | Collective | 1 |
| PT | 2004 | Both | 1 |
| RO | 2004 | Individual | 0 |
| SE | 1975 for Swedish system; 1998 in line with EU Directive | Collective | 3 |
| SI | 2003 | | N/A |
| SK | 2001 | Collective | 1 |
| UK | 2005 | Collective | 2 |

Table 10: Overview of EPR schemes in the EU for the oils product stream

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| BE | | Valorlub: both<br>Valorfrit: both in Walloon and Brussels Region; in Flanders collective for household oil, no EPR for professional edible oil | |
| BG | 2006 | Collective | 1 |
| DE | 2002 | Collective | Around 100 'collectors' of waste oils have been authorised |
| DK | 2000 | Collective | 1 |
| ES | 2006 | Both | 2 |
| FI | | Collective | 1 |
| GR | 2004 | Collective | 1 |
| IT | 1982 | Collective | 1 |
| NL | N/A | N/A | N/A |
| PL | 2001, 2002 | Collective | 5 |
| PT | 2003 | Collective | 1 |

Table 11: Overview of EPR schemes in the EU for packaging

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| AT | 1993 | Both | 6 |
| BE | 1994 | Both | 2 |
| BG | 2004 | Both | 1 |
| CY | 2006 | Both | 1 |
| CZ | 2002 | Both | 1 |
| DE | 1990 | Both | 9 |
| DK | Government-led scheme | | |
| EE | 2004 | Both | 4 |
| ES | 1996 | Both | 2 |
| FI | 1997 | Both | N/A |
| FR | 1992 | Both | 1 |
| GR | 2001 | Both | N/A |
| HU | Government-led scheme | | |
| HR | 2006 | N/a | N/A |
| IE | 1997 | Both | 1 |
| IT | 1997 | Collective | 1 |
| LT | 2002 | Both | 1 |
| LU | 1995 | Both | 1 |
| LV | 2000 | Both | N/A |
| MT | 2005 | Both | 1 |

| | | | |
|---|---|---|---|
| **NL** | 2013 | Both | 1 |
| **PL** | 2000 | Both | 1 |
| **PT** | 1996 | Both | 1 |
| **RO** | 2004 | Both | 7 |
| **SE** | N/A | Collective deposit system; collective and individual system for other packaging | 1 + several deposit systems |
| **SI** | 2003 | Both | 4 |
| **SK** | 2003 | Both | 11 |
| **UK** | 1997 | Both | 22 |

Table 12: Characteristics of EPR schemes for WEEE

| Member State | Start date of EPR scheme(s) | Collective or individual | If collective, number of EPR schemes |
|---|---|---|---|
| **AT** | 2005 | Collective | 4 |
| **BE** | 2001 and 2002 | Collective | 1 |
| **BG** | 2006 | Collective | 2 |
| **CY** | 2006 | Collective | 1 |
| **CZ** | 2005 | Collective | 3 |
| **DE** | 2005 | | 2 |
| **DK** | N/A | Collective | 1 |
| **EE** | 2005 | Collective | 3 |
| **ES** | 2002, 2005 | Collective | 7 |
| **FI** | 2000, 2004 and 2005 | Collective | 6 |
| **FR** | 2005 | Both | 4 |
| **GR** | 2001 and 2009 | Collective | 2 |
| **HU** | N/A | Collective | 2 |
| **HR** | N/A | Collective | 3 |
| **IE** | 2005 | Both | 2 |
| **IT** | 2004, 2005, 2006, 2007, 2008 | Collective | 16 |
| **LT** | 2006 | Collective | 1 |
| **LU** | 2004 | Collective | 1 |
| **LV** | 2006 | Collective and some individual | 5 |
| **NL** | N/A | Collective | 9 |
| **PL** | 2005 | Collective | 2 |
| **PT** | 2006 | Collective | 2 |
| **RO** | 2007 | Collective | 2 |
| **SE** | 2001, 2007 | Collective | 2 |
| **SI** | 2005 | Collective | 2 |
| **SK** | N/A | Collective | 3 |
| **UK** | N/A | Collective | 29 |

As can be seen in the tables above, most EPR schemes were introduced in the 2005, following the European Directives. However, several systems started earlier:

For batteries, the first schemes started in the early 1990s (Austria, Belgium), others followed in the late 1990's (Germany, France, Spain), but the majority were only implemented in the 2000's.

For ELVs, the first scheme was introduced in 1975 in Sweden. A few other recovery schemes were introduced in the late 1990s (Netherlands, Germany, Belgium) and the majority were put in place in the mid 2000s.

For graphic papers, the first EPR schemes were set up in the 1990s (Sweden, Finland) and others in the 2000s.

For oils, the first scheme was introduced in Italy in 1982. The other existing schemes were implemented from 1998 (Netherlands) to 2006.

For packaging, a considerable number of schemes were implemented in the 1990s, in chronological order: Germany, France, Austria, Belgium, Luxembourg, Spain, Portugal, Hungary, Finland, Ireland, UK. Other schemes followed in the early 2000s.

For WEEE, all EPR schemes were introduced during the 2000s with most following the adoption of the WEEE Directive in 2002.

It should also be highlighted that, in theory, EPR is an individual obligation: each producer (or importer) has to take the necessary steps to ensure that its products will be conveniently collected and treated at the end of its life, thereby reducing the burden on local authorities. In a great number of cases, however, producers have decided to join and create a structure (a Producer Responsibility Organisation, or PRO) to execute this legal obligation. Although this report focusses on PROs (as these entities aggregate and publish relevant data), it should not be forgotten that individual schemes also exist for most waste streams and that they usually co-exist with collective schemes (as can be seen in the tables above and in the Annex).

## 2.2 Performance of EPR schemes in the EU

The aim of this section is not to rank countries and product streams from the most efficient to the least. Firstly, it is impossible to compare the performance of different waste streams, as technical conditions for recycling and recovery are extremely different. Even for specific waste streams, such a performance ranking would be based on fragile data (e.g. Eurostat data lack counter-checking and require caution in their use) and would not accurately illustrate the efficiency of the implemented EPR schemes.

The idea here is rather to aggregate existing data for all Member States, both technical and economic, in order to provide an overview of the heterogeneity of the situation in the six main product streams selected at the EU level (those selected for the 36 case studies).

Whereas recycling rates are publicly available, they are seldom calculated in the same way in all Member States. Eco-design performance, at a national level, is impossible to assess in a systematic way. True costs are seldom publicly available, as PROs consider that it is part of their competitive know-how. It is possible to rely on producer fees in order to assess the economic efficiency of EPR schemes. However, once again, information on fees is not always publicly available. Therefore, in the following pages, for each stream, one or two graphs are provided to illustrate the performance of EPR schemes, which refers to both:

- **technical performance**: to what extent did the EPR implementation foster the capture of a substantial share of the waste arising and the achievement of recycling targets? Collection and/or recycling rates are used to illustrate this technical performance;
- **economic performance**: how costly was it to implement the EPR principle? To illustrate this economic performance, information related to fees was collected, when enough comparable data could be identified; here the majority of the effort has been dedicated to collecting such data on three product categories (packaging, batteries, and EEE).

### 2.2.1 Batteries

Figure 8: Collection rates for portable battery EPR systems (various sources, 2010 and 2011)[24]

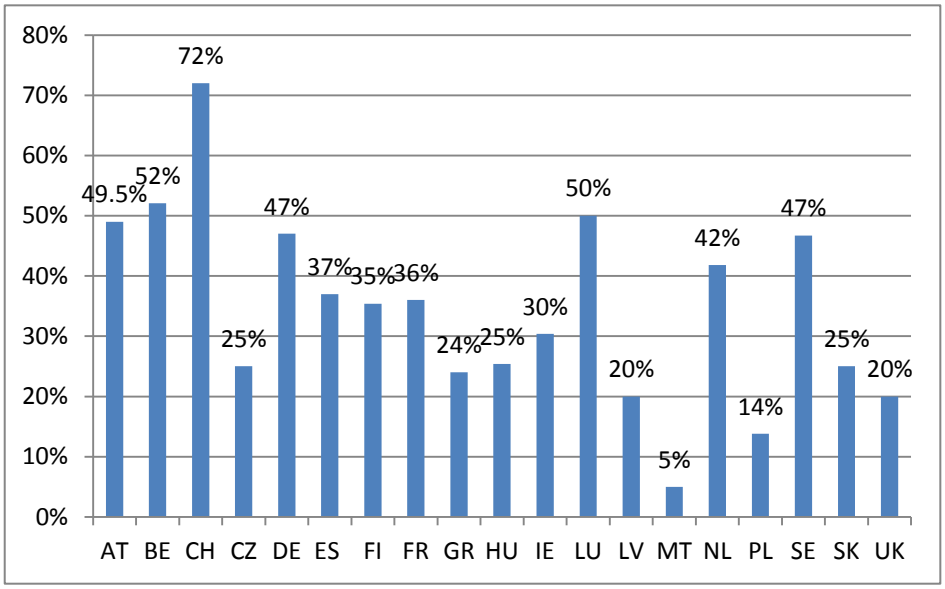
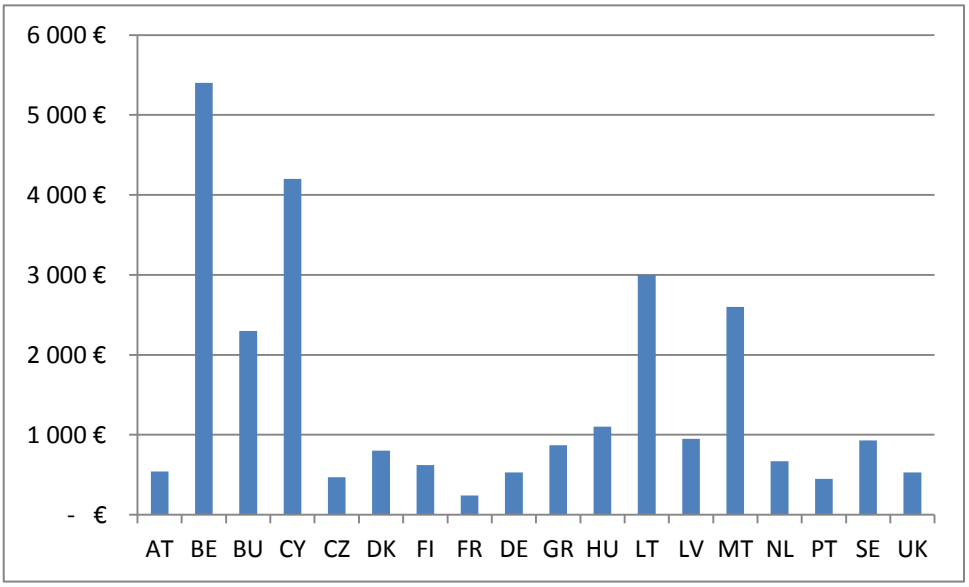



Figure 9: Average fees paid by producers per tonne of portable batteries (various sources)[25]




[24] For Germany (DE) only the collection rate for the state-authorised system (GRS) was used; however, a lower collection rate (24.3%) was identified for ERP, an additional system. It should be noted that statistics on batteries have not yet been published by Eurostat.

[25] For the exact sources, refer to the Annex 5.3

## 2.2.2 ELVs

Figure 10: Recycling and re-use rate for ELV EPR systems (Eurostat, 2011)[26]

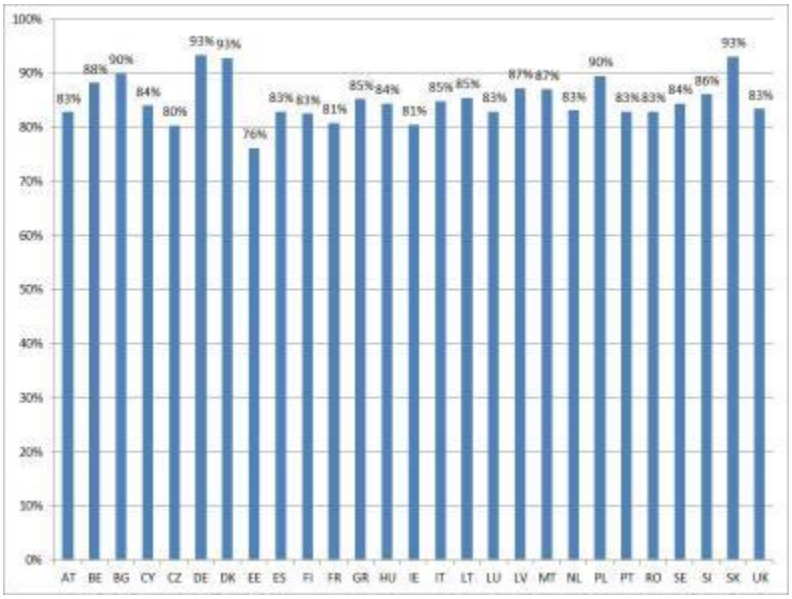
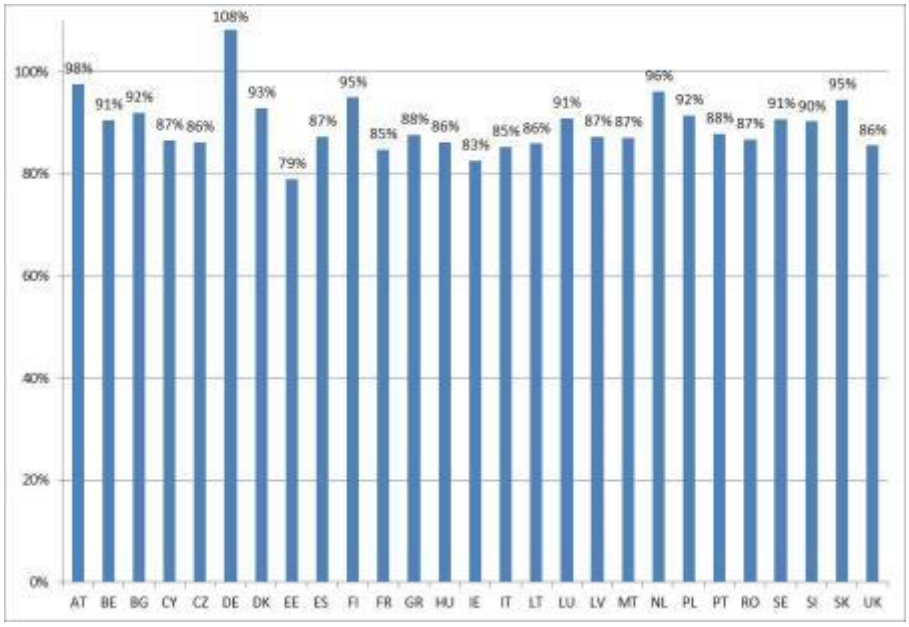



Figure6-: Recycling, recovery and re-use rate for ELV EPR systems[27] (Eurostat, 2010)




[26] It should be noted that Croatia does not yet appear in EUROSTAT data.

[27] It should be noted that Germany's achievement of a recycling, recovery and re-use rate above 100% indicated the effect of a collection incentive (eco-premium) that triggered an important increase in the number of vehicles collected in 2009, and thereof an increase in number of vehicles dismantled in 2010 and 2011.

### 2.2.3 Oils

Figure 7: Collection rate for oils EPR systems (various sources, 2010)

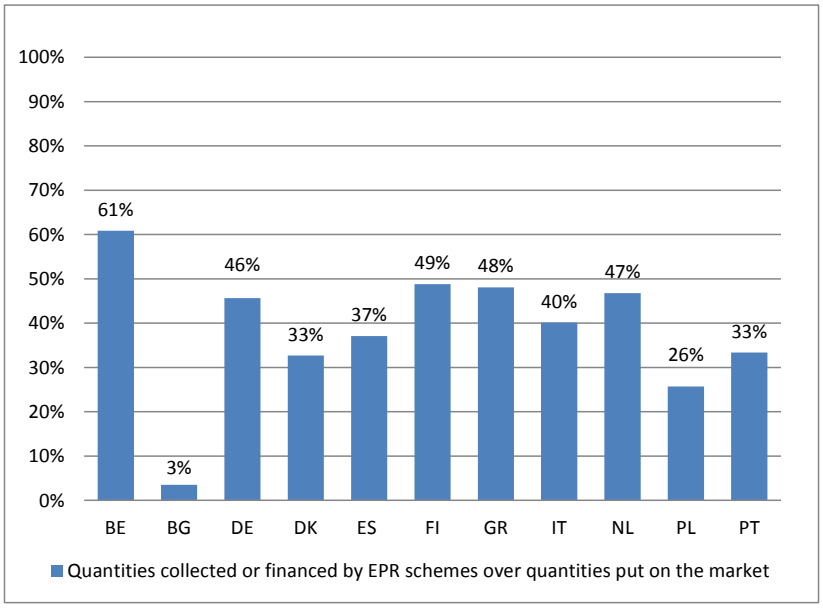
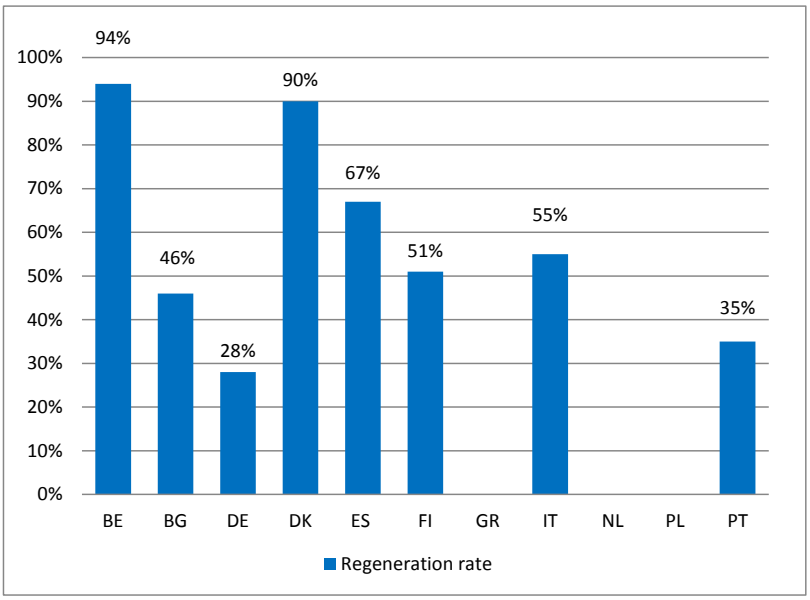



Figure 8: Regeneration rate for oils EPR systems (various sources, 2010)[28]




[28] Quantities collected/financed by oils EPR schemes as a percentage of quantities of oils put on the national market

## 2.2.4 Packaging

Figure 9: Recycling and re-use rate for packaging EPR systems (Eurostat, 2010)

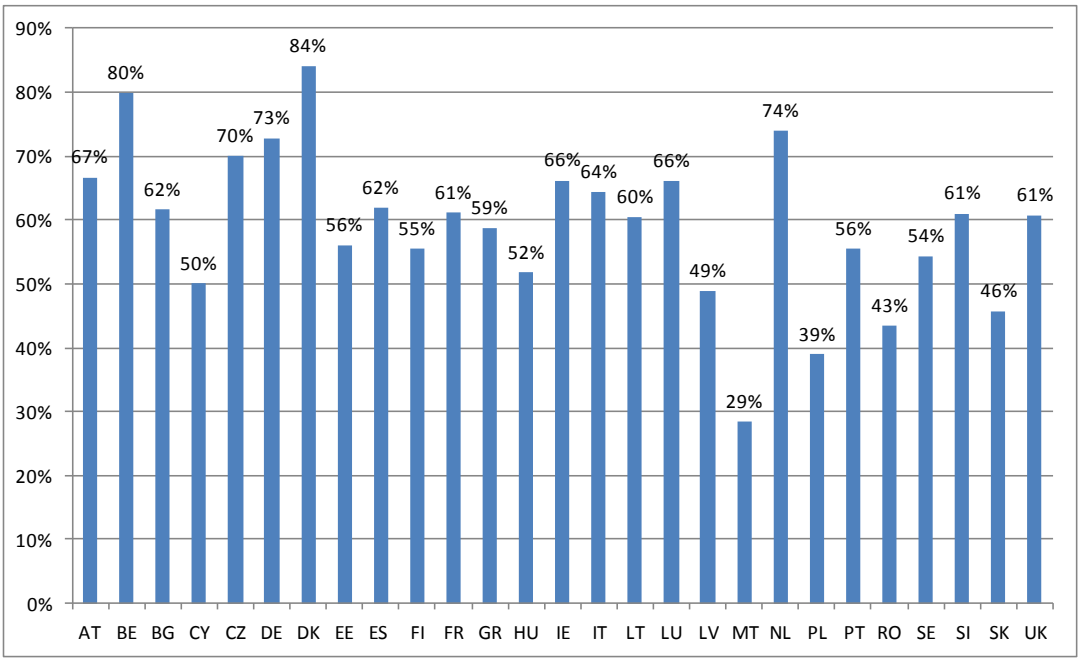
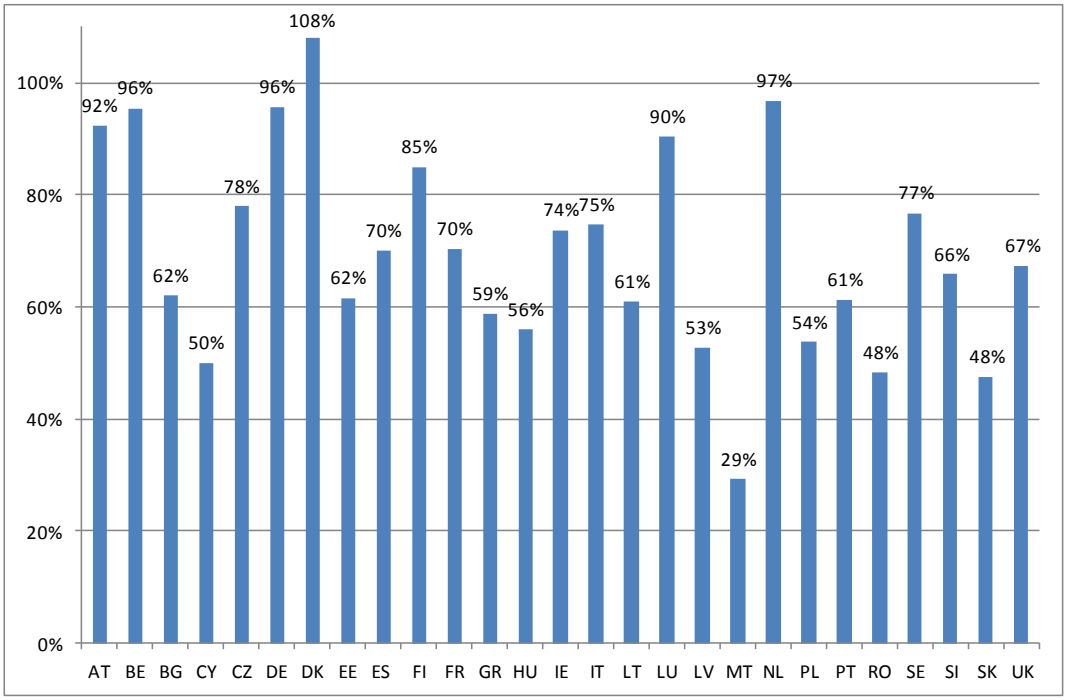
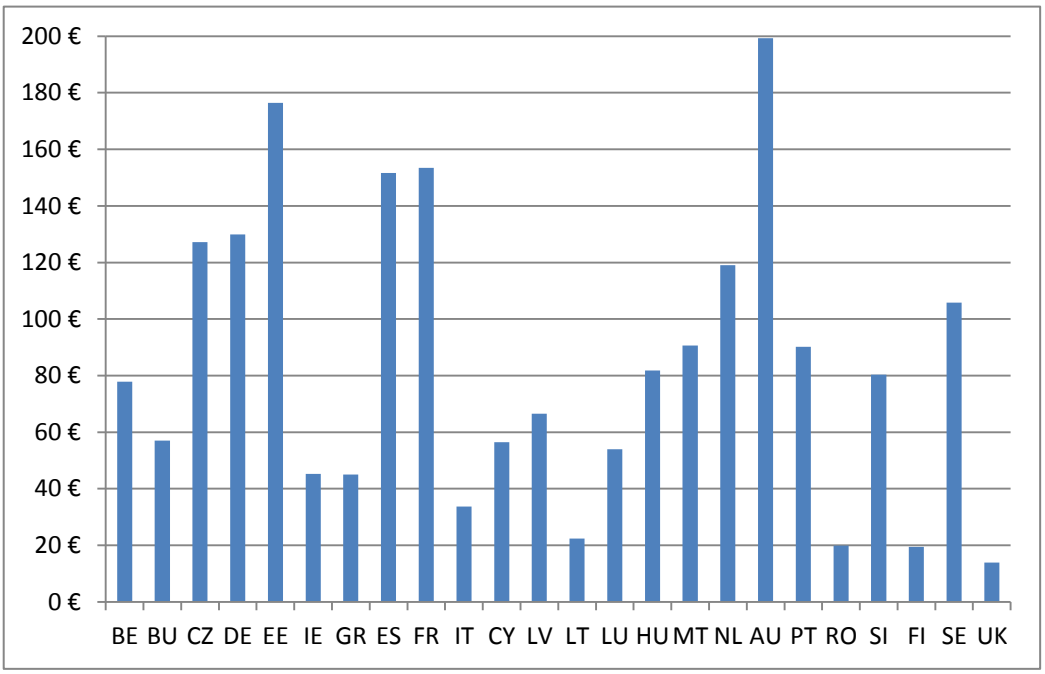



Figure10: Recycling, recovery and re-use rate for packaging EPR systems[29] (Eurostat, 2010)




[29] It should be noted that Denmark's achievement of a recycling, recovery and re-use rate above 100% appears to indicate the treatment of imported packaging waste.

**Figure 11: Average fee charged to producers per tonne of household packaging put on the market[30]**




The average fee per tonne of household packaging put on the market was calculated, based on the EU-28 average share of paper, plastics and glass in total (household and industrial/commercial) packaging waste generated (Eurostat, 2011) and on the EU-28 population data (Eurostat population data, 2012). These fees do not necessarily reflect the real costs of the system. For instance, industrial packaging producers do not always contribute to the EPR scheme, or contribute with different fee rates. These average fees are however an attempt to provide a comparable indicator of the contribution of household packaging producers to the schemes.

30

## 2.2.5 WEEE

Figure 12: Collection performance for WEEE EPR systems (Eurostat, 2010)

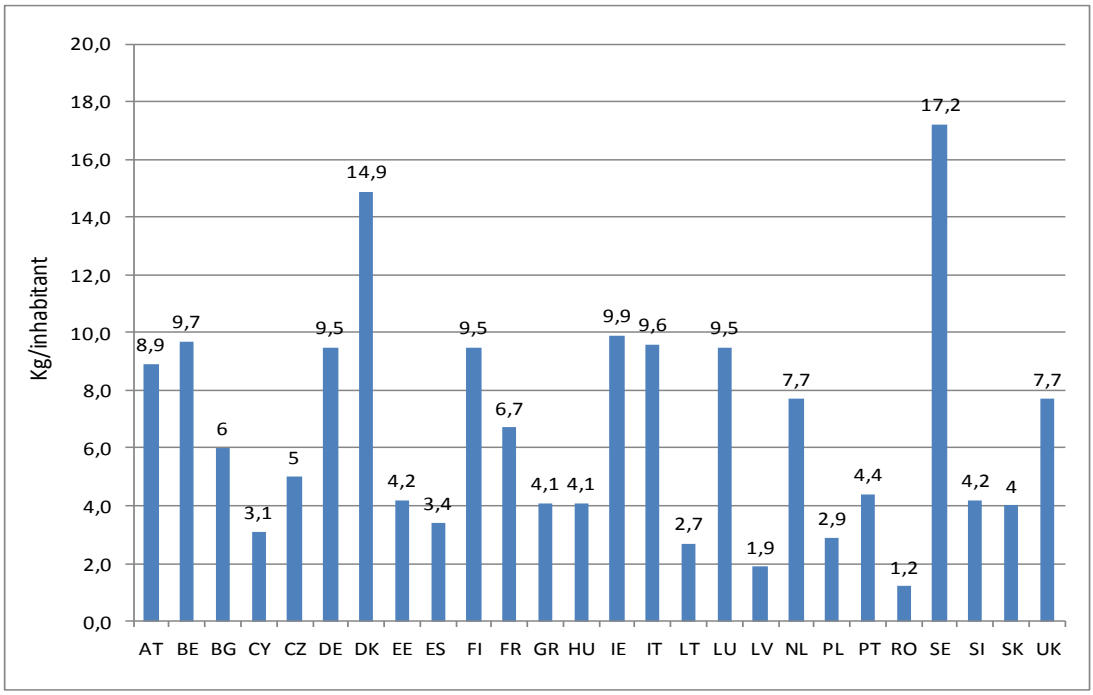



Figure 13: Recycling and re-use rate for WEEE EPR systems (Eurostat, 2010)

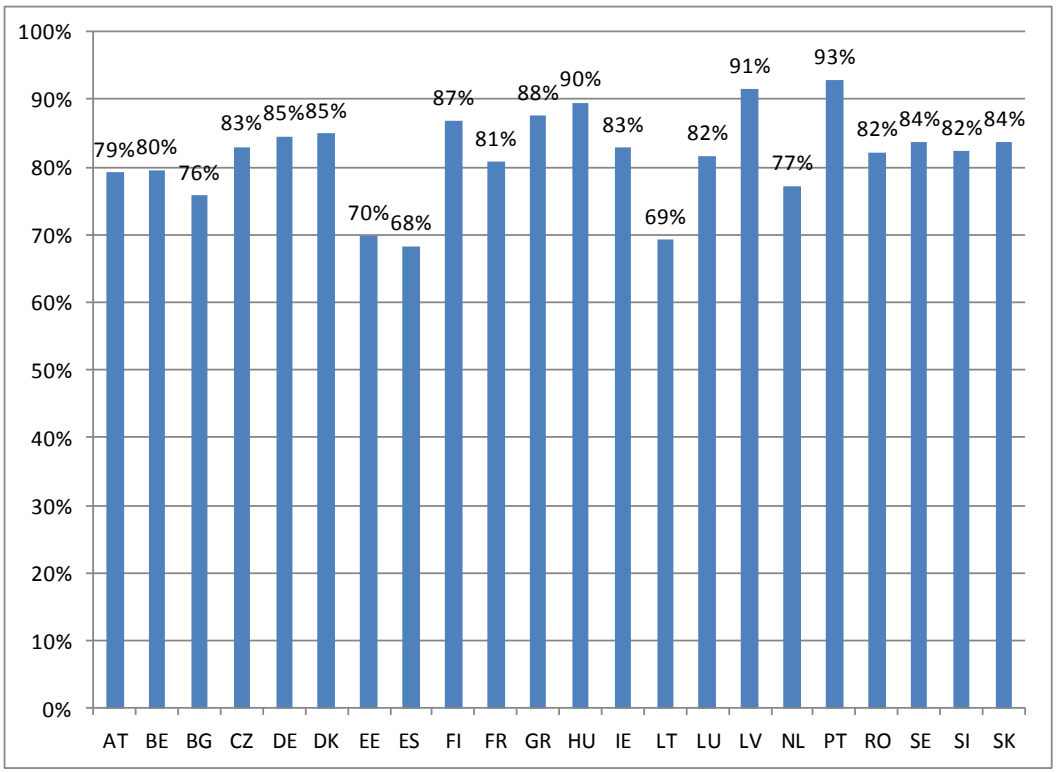
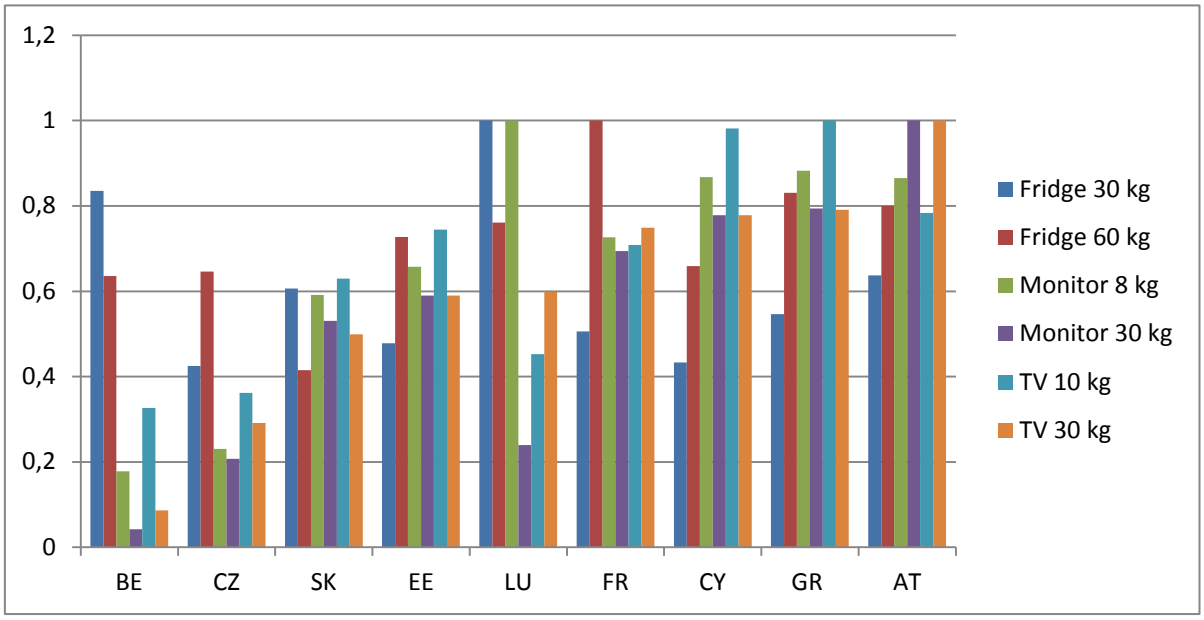


Figure 11: Normalised average fees paid by producers per piece of WEEE[31]




As can be seen from the graphs above, **important discrepancies** still exist among MS for every waste stream considered in terms of both technical and economic performances.

As regards **technical performance**, a distinction should be made between collection and recycling rates.

- **Collection rates** (for oils, batteries and WEEE) are extremely variable from one country to another: from 5% (Malta) to 72% (Switzerland) for batteries; from 3% (Bulgaria) to 61% (Belgium) for oils; from 1.2 kg/cap. (Romania) to 17.2 kg/cap. (Sweden) for WEEE. At any rate, collection rates do not reach more than 80%, apart from the case of oils where 100% collection rates are not unusual.
- Regarding **recycling rates**, the development of EPR has fostered the achievement of reasonably high recovery targets.

In order to assess the **economic performance**, an assessment of fees level has been possible for packaging, batteries and WEEE. For the other product streams, economic data was almost impossible to obtain. Even for these three streams, the analysis of fees relies on average data, collected from *some* PROs in *some* EU Member States. Once again, such data are not always made public, partly due to reasons related to competition among PROs. Nevertheless, the data collected provides some insights:

- Although a majority of PROs charge less than 1,000 EUR/tonne of portable batteries, the fees paid by producers to PROs can vary from 240 EUR/tonne in France to 5,400 EUR/tonne in Belgium[32].

[31] This assessment has been elaborated from various sources (see Annex for more details). The graph is 'normalised', that is to say that all values are presented in a same scale (0 to 1), in order to be easily comparable. Only nine EU countries participating in the WEEE Forum publish the fees paid by producers per WEEE product. A great disparity was found in terms of the way fees were attributed, due to the fact that not all PROs classify WEEE in the same way. The fees are sometimes presented according to few broad equipment categories or to very detailed sub-categories. Also, the fees are either calculated by piece of WEEE put on the market or by weight.

- When comparing the fees charged to producers per tonne of packaging material put on the market, similar discrepancies appear: average fees charged to producers range from 14EUR/tonne to 200EUR/tonne, with an average of 92EUR/tonne.
- In the case of WEEE, tariffs are not set up in the same way and important discrepancies appear. For example, in France, fees for televisions are divided into eight subcategories with prices ranging from 0.8 to 8.0 EUR/piece whereas in Greece producers pay a contribution of 254.2EUR/tonne of televisions put on the market.

## 2.3 Focus on 36 case studies

During the analysis of the 36 case studies, special attention was placed on neutralising as much as possible the biases regarding quantities and on collecting and processing detailed economic data. This allowed the realisation of a more robust quantitative benchmark about the cost-effectiveness of the EPR systems presented hereafter. Please note that although the conclusions that can be drawn on the cost-effectiveness of the 36 case studies are more robust that those at EU-28 level, they nevertheless constitute only indications, as scopes and calculation modes often vary from one country to another.

### 2.3.1 EPR systems functioning

A detailed analysis of 36 EPR systems in the EU was prepared during this study, and their full description can be found in the annex. This chapter provides a synthesis of key features of EPR schemes, including:

- The type of responsibility (financial or organisational)
- The presence of competition among PROs, and among waste treatment operators
- Transparency and surveillance features: surveillance of free-riders, waste management activities, surveillance of the PROs, and legal status of PROs

A further analysis of these key features is provided in Chapter 3. , which concludes on possible guiding principles for the design and implementation of EPR (see Chapter 4. ).

One table for each of the six product categories is presented below.

[32] The fees in Belgium have decreased as of 1st of January 2014 to 3260€/tonne of portable batteries, and will further decrease due to the replacement of a fixed federal tax with an environmental fee that will reflect collection and treatment costs.

**Batteries**

| BATTERIES | | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| Type of PRO responsibility | | Partial organisational responsibility | | | | | |
| **COMPETITION** | | | | | | | |
| Is there competition among PROs? | | Yes, 4 PROs | No, only 1 PRO | Yes, 4 PROs | Yes, 2 PROs + 1 individual scheme | No, only 1 PRO | |
| Is there competition among WM operators? | | Transport: yes Treatment: No | Yes | No | Yes. | Transport: Yes Treatment: No. | |
| **TRANSPARENCY AND SURVEILLANCE** | | | | | | | |
| Surveillance of free-riding | **How many free riders are there?** | There seems to be no free rider problem | Exact percentage unknown, but probably low | N/A | | | |
| | **Which sanctions are provided?** | Fine of double the amount | The PRO informs the regional government | Fines and prison sentences | Fines or criminal sanctions | N/A | Retroactive charge of the due fees |
| Surveillance of collection and treatment operations | | The federal authority and audits by the PROs | Regional governments | N/A | The National Authority verifies declarations and coherence. PROs audit on actors for which there are unusual variations | N/A | Collection points are audited by regional authorities. National authorities undertake controls of treatment activities |
| Surveillance of PROs | **Who is in charge?** | A coordination unit | Regional governments | Ministry of Environment | A consultative commission | N/A | The federal government |
| | **How?** | 6 % of the total system costs are monitoring costs | 1/3 of the declarations are audited yearly | Through the DPA-System | The National Authority audits 15 to 20 producers per year | N/A | |
| PRO's status | **profit-based or not-for-profit?** | 3 are non-profit. 1 is for-profit | Non-profit | Elretur is non-profit Others: no clear trend | Non-profit | | |

## ELVs

| ELVs | | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|---|
| Type of PRO responsibility | | Financial responsibility | Not an EPR scheme | Financial responsibility | | | |
| COMPETITION | | | | | | | |
| Is there competition among PROs? | | No competition | No PRO | No, one single PRO | | | N/A |
| Is there competition among WM operators? | | Yes, competition for shredder plants | Yes, for the treatment operators | Yes, 272 collection points and 4 authorised operators with post-shredder technology | Yes, 247 dismantling and treatment operators | Yes | Yes, between collection and treatment operators |
| TRANSPARENCY AND SURVEILLANCE | | | | | | | |
| Surveillance on free-riding | How many free riders are there? | N/A | - | It is assumed that some companies are not fulfilling their obligations | 17% | N/A | Estimated to be small, doesn't appear to be problematic |
| | Which sanctions are provided? | Financial penalties up to €7,720 are foreseen. | - | N/A | ARN can suspend contracts but has no enforcement power | N/A | |
| Surveillance on collection and treatment operations | | Surveillance by the Ministry for Environment | Surveillance by the local waste authorities | Audits are undertaken by the PRO on treatment operators | | Financial penalties received by the Recycling Fund | N/A |
| Surveillance on PROs | Who is in charge? | The Ministry of Environment | - | PIRELY | N/A | | |
| | How? | N/A | - | PIRELY audits the PRO. Fines can be up to €500,000 | N/A | | |
| PRO's status | profit-based or not-for-profit? | Non-profit | - | N/A | Non-profit | | N/A |

## Graphic paper

| GRAPHIC PAPER | | FI | FR | NL | SE |
|---|---|---|---|---|---|
| Type of PRO responsibility | | Partially organisational responsibility | Financial responsibility through contract with municipalities | | Full organisational responsibility |
| **COMPETITION** | | | | | |
| Is there competition among PROs? | | Yes, 2 PROs | No, one single PRO | | |
| Is there competition among WM operators? | | Yes, contracts with PROs who also provide collection and transportation services | Yes, selection by local authorities | Yes, between operator contracted by the PRO and other operators | Yes, contracted by the PRO |
| **TRANSPARENCY AND SURVEILLANCE** | | | | | |
| Surveillance on free-riding | **How many free riders are there?** | Low (there are currently no fees) | 23% | No estimation | Low |
| | **Which sanctions are provided?** | Financial penalties | Before 2013: taxes After 2013: financial penalties | Penalties range from fines to sentence by judge | No information |
| Surveillance on collection and treatment operations | | Operators must have a permit | Audits are performed by the PRO | Paper waste enterprises report to the PRO | No specific procedure identified |
| Surveillance on PROs | | The Finnish Competition and Consumer Authority is responsible for monitoring the legality of competition between the PROs | Surveillance and approval by the Ministry of Environment. Stakeholders consultation through the agreement advisory committee | The PRO is an emanation of the Dutch Ministry for Environment. | Approval by public authorities; enforcement at the local authorities level |
| PRO's status | **profit-based or not-for-profit?** | The organisation can be for profit and sell other services and products | Non-profit | | |
| Is there any multi-stakeholder dialogue procedure? | | No specific dialogue procedure identified | An agreement advisory commission composed of members of the three ministries and of graphic papers related sector members | No specific dialogue procedure identified | |

**Oils**

| OIL | | BE | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| Type of PRO responsibility | | Financial responsibility | Financial responsibility through a tax | - | Financial responsibility | | |
| **COMPETITION** | | | | | | | |
| Is there competition among PROs? | | No, only 1 PRO | No, 1 collective goverment-run scheme | No, as there is no PRO | No. Each type of oil is managed by 1 single PRO | No, possible but only 1 PRO | Yes, 2 PRO with one that has 90% of the market |
| Is there competition among WM operators? | | Yes, 15 operators | Yes, for treatment operators | Yes, 100 waste collection & treatment operators. | Yes, 242 collectors and 38 refiners | Yes | Yes, more than 100 companies |
| **TRANSPARENCY AND SURVEILLANCE** | | | | | | | |
| Surveillance on free-riding | How many free riders are there? | No estimate available, but limited to 'niche' importers | | - | No free riders | N/A | |
| | Which sanctions are provided? | Administrative fines are in place | | - | No sanction | N/A | |
| Surveillance on collection and treatment operations | | yearly sample of external audits | N/A | BAFA | N/A | The PRO undertakes frequent internal audits + some external audits | Operators have to report to the PRO + annual random audits. |
| Surveillance on PROs | Who is in charge? | Regional authorities are in charge of surveillance | Not clear, L&T status is not clear | - | Oversight authority is not clear | The Portuguese Environmental Agency | Regional authorities |
| | How? | The Flemish Waste Agency has 4 inspection officers (for all wastes) | N/A | - | N/A | Auditers | Regional authorities orders annual audits |
| PRO's status | Profit-based or not-for-profit? | Non-profit | For profit | - | For profit | Non-profit | |
| Is there any multi-stakeholder dialogue procedure? | | No dialogue procedure | | | No dialogue procedure, but the PRO's board composition is varied. | No dialogue procedure | |

## Packaging

| PACKAGING | | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|---|
| Type of PRO responsibility | | Full organisational responsibility | HH: Partial organisational responsibility C&I : simple financial responsibility | Financial responsibility through reimbursement contracts with municipalities and sorting plants | Full organisational responsibility | Financial responsibility through reimbursement contracts with municipalities | Financial responsibility through reimbursement contracts with municipalities and sorting plants | Simple financial responsibility |
| COMPETITION | | | | | | | | |
| Is there competition among PROs? | | HH: Yes but low, 2 PROs but one for beverage packing only C&I: Yes, 7 PROs | No, 1 PRO for HH and 1 for industrial packaging | No, 1 PRO for HH and industrial packaging | Yes, 10 PROs with one representing more than 50% of the market | No, 2 PROs but one is the owner of the second | No, 1 PRO A "substantial majority" being required to operate | Yes, over 30 competing PROs |
| Is there competition among WM operators? | | Yes, Selected by PROs every 3 to 5 years | HH: yes, selection by PRO and local authorities C&I: yes, direct contracts with waste generators | HH: yes, selection by local authorities | Yes, selection by PROs | Yes, selected by local authorities | | yes, 152 reprecessors and 162 exporter of packing waste |
| TRANSPARENCY AND SURVEILLANCE | | | | | | | | |
| Surveillance on free riding | How many free riders? | Estimated to be low | HH: estimated ~7% of the market C&I: no estimate | HH: 5% C&I: 10% (estimations) | Estimated to be high (around 25%) | Estimated below 2% | Estimated to around 2% | Estimated to be an important issue |
| | Which sanctions? | Financial penalties | | | | | | |
| Surveillance on collection and treatment operations | | Performed by the PROs through regular audits of recyclers | | | No information | | A certificate ensures reliable data from waste operators. A PRO's internal organisation performs audits of municipalities and waste operators | A regulatory accreditation system exists for reprocessors and exporters of packaging waste |
| Surveillance on PROs | | Regular audits by the Federal Accounting Office | Authorisation and regular audits by the IPC | Authorised by the Ministry of Environment | No information | Authorised by the Ministry for a 6 year period | No information | Audits on accuracy of data provided by the NWPD |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PRO's status** | **profit-based or not-for-profit?** | No specific requirement | Non-profit | No specific requirement. Most PROs are for profit | Non-profit | No specific requirement. The only PRO is non-for-profit | No specific requirement |
| **Is there any multi-stakeholder dialogue procedure?** | | No specific dialogue procedure identified | Consultation by the Interregional packaging commission, through an ad hoc platform<br><br>Bilateral consultation of other stakeholders | No specific dialogue procedure identified | Consultation committee, regrouping all involved stakeholders + 2 mandatory operational committees to be set up by the PRO | No specific dialogue procedure identified | |

## WEEE

| WEEE | | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|---|
| Type of PRO responsibility | | HH: Partial organisational responsibility<br><br>C&I: Mostly individual systems[33] | Full organisational responsibility | HH: Full organisational responsibility<br>C&I: Possibility to delegate it to the end-user | Partialorganisational responsibility | Full organisational responsibility | Partial organisational responsibility | |
| **COMPETITION** | | | | | | | | |
| Is there competition among PROs? | | Yes, 3 Pros in competition.<br><br>Only 1 PRO for lamps | Yes, between 3 collective schemes | HH: Yes, 3 PROs in competition. Only 1 PRO on lamps<br><br>C&I: yes, 4 PROs in competition | 2 PROs in competition.<br><br>Operation-wise, though, they cover different geographical areas. | 4 PROs in competition.<br><br>Only 1 PRO for lamps | Yes, 2 PROs in competition | Yes, 39 PROs |
| Is there competition among WM operators? | | Yes, selected by PROs | Yes, selected by PROs or individual compliers | Yes, selected by PROs | Yes, selected by PROs | Yes, selected by PROs | Yes, selected by PROs | Yes, however the system of interaction is complex |
| **TRANSPARENCY AND SURVEILLANCE** | | | | | | | | |
| Surveillance on free-riding | **How many free riders are there?** | Not estimated, but probably very few | No estimation | No estimation, probably few on HH EEE | No estimation | No estimation, but low | No estimation | |
| | **Which sanctions are provided?** | Prison sentence up to 2 years. Fines up to 1300€. | Possibilities of fine, but no penalties applied | Financial penalties. | Severe penalties are in place, at least in theory | A higher tax set for non-reporting or non-registerd | Financial sanctions | Financial penalties |
| Surveillance on collection and treatment operations | | Operators must be environmentally approved | Facilities must be authorised | PROs must perform regular audits | PROs perform regular audits | Facilities must be authorised | N/A | Defra is in charge of the surveillance of operators |
| Surveillance on PROs | | DPA-System carries out audits on the information provided by PROs and individual compliers | Collective schemes must be approved by the national implementation agency | PROs and the clearinghouse must be approved by the public authorities | All producers must be registered by the clearinghouse | Authorisation requirements include: the ability to fulfil certain tasks, enough capital reserves | The Environmental Protection Agency is in charge of surveillance and performs regular audits | Producer compliance schemes must seek approval from the Environment Agencies |
| PRO's status | **profit-based or not-for-profit?** | No specific requirements | | Non-profit | Existing PROs are not-for-profit | All PROs are for profit | No specific requirement | |
| Any multi-stakeholder dialogue procedure? | | No dialogue procedure identified | | Consultation committee, regrouping all stakeholders | Monitoring group chaired by the public authority. | No dialogue procedure identified | Bilateral agreements | No dialogue procedure identified |

[33] HH : Household ; C&I : Commercial and Industrial

### 2.3.2 Systems performance

All graphs below show the combination of three pieces of information:

- **Technical performance**, in terms of the collection rate for batteries (quantities collected vs quantities put on the market)[34] and the recycling rate for the other streams (quantities recycled vs quantities collected or quantities put on the market), to assess the overall performance of the scheme in capturing a substantial share of the waste arising and reaching targets;
- **cost**, approximated by the amount of fees paid by producers, to assess how expensive the EPR scheme is; this approach was used to compensate the lack of data on costs, and has its limits, as in many cases the fees are not directly linked to costs (e.g. partial cost coverage);
- an indicator of the **amount of product or waste** covered by EPR (represented by the area of the circle), in order to get a picture of the overall volume in absolute terms (depending on the product category and the available data, this indicator may be quantities put on the market or quantities collected).

Regarding WEEE, economic information was missing for some case studies, mainly for confidentiality reasons. This prevented us from undertaking a thorough cost-effectiveness benchmark.

***Note:*** *Information may not be available or comparable. Scopes and calculation modes vary from one country to another. Furthermore, it is impossible to compare the performance of different waste streams, as technical conditions are extremely different (e.g. between oils and WEEE recovery).*

[34] There is a lack of data on recycling rates for batteries: in the Netherlands and Austria, no recycling rate is available since waste batteries are mainly treated by different companies in neighbouring countries. The Belgian PRO for portable batteries was awaiting the official calculation method to be defined at European level (1 January 2014).

## BATTERIES

***Note:*** *Most data presented here relate to portable batteries, because EPR systems for portable batteries are more challenging to organise than EPR-systems on industrial and automotive batteries. Due to the high market value of industrial and automotive batteries, their recovery is to a large extent enabled by B2B agreements.*

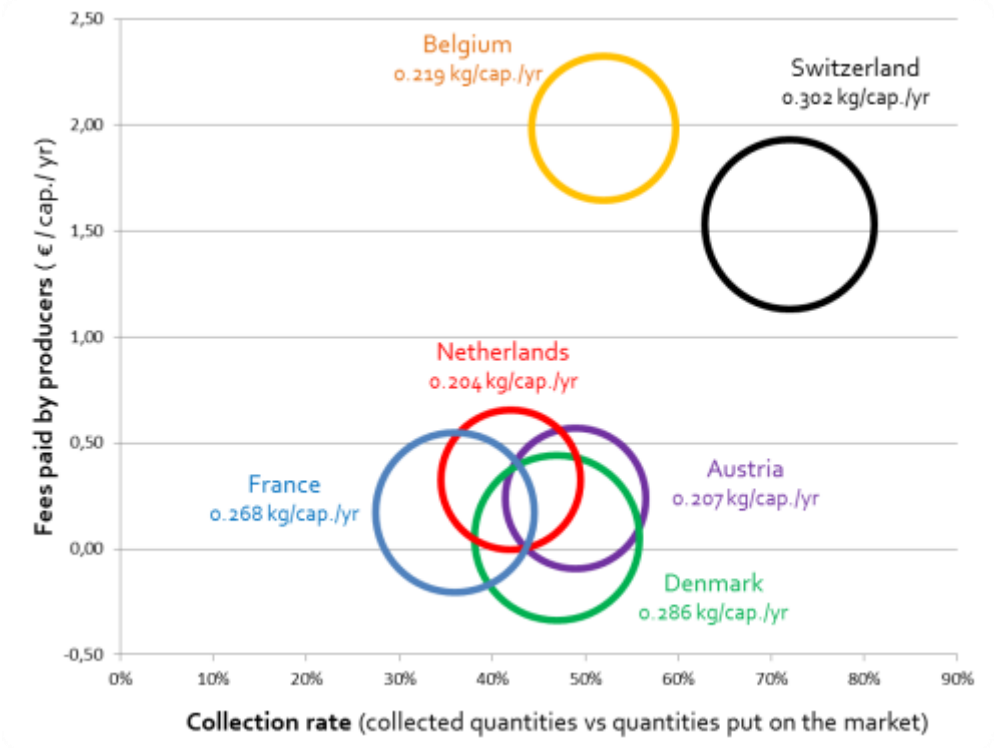
***Portable batteries***

| BATTERIES | | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| Organisational costs coverage | | Full coverage | | Partial coverage | Full coverage | | |
| Technical performance (2011) | Batteries collected | 1,738 t | 2,406 t | 1,589 t | 17,397 t | 3,385 t | 2,375 t |
| | Batteries collected per inhabitant | 0.207 kg/inh | 0.219 kg/inh | 0.286 kg/inh | 0.268 kg/inh | 0.204 kg/inh | 0.302 kg/inh |
| | Return rate | 49% | 52% | 47% | 36% | 42% | 72% |
| | Recycling rate | N/A | | 65% | 68% | N/A | |
| Cost effectiveness (2011) | Total fees € / year | 1,987,150 € | 21,810,427 € | 288 € | 11,300,000 € | 5,400,000 € | 12,050,000 € |
| | Amount of a single fee per battery | 0.1239€ | 0.04€ + annual fee €100 | N/A | N/A | 2,57 € / kg | 0.1239€ |
| | Total fees / recycled tonne | 1,143 €/t | 9,065 €/t | 181 €/t | 650 €/t | 1,595 €/t | 5,074 €/t |
| | Total fees / inhabitants | 0.24 €/inh | 1.98 €/inh | 0.05 €/inh | 0.17 €/inh | 0.32 €/inh | 1.53 €/inh |

The collection rate for portable batteries ranges from 36% (France)[35] to 72% (Switzerland). All the EPR schemes studied thus have a higher collection rate for portable batteries than the EU target for 2012 (25%) and have already gone beyond or are getting close to the 2016 target (45%). Quantities collected in 2011 range from 0.2 (Netherlands, Austria) to nearly 0.3 kg/cap./year (Denmark, Switzerland).

[35] Regarding the French case, it is estimated that approximately one third of the remaining batteries waste is kept unused by individuals and that another third is thrown away with unsorted municipal waste.

**Figure 14:** Cost effectiveness of EPR schemes for portable batteries in 2011




Annual producers' fees vary greatly from one country to another. The EPR scheme for portable batteries producers is much more expensive in Belgium[36] and in Switzerland (1.5-2 EUR/cap./year) than in the four other countries, where the fee level is quite homogeneous (less than 0.5 EUR/cap./year).

Out of the six countries studied, four have a fairly cost-efficient scheme and homogeneous performance for portable batteries. It must be noted that the collected quantities (in kg/cap./yr) are significantly higher in Denmark and France (despite a lower collection rate) than in Austria and the Netherlands.

Belgium appears to have the most expensive scheme with a collection rate similar to the four most efficient countries. The PRO argues that this is caused by the former fixed federal tax that did not reflect actual collection and treatment costs. The PRO therefore invests a lot in communication, education and in building a dense network of collection infrastructure, which leads to a reasonable collection rate (52%). In 2013, the tax was replaced with an environmental fee, so the producer fees are expected to decrease.

Switzerland, whose EPR scheme is also expensive, has a high collection rate (72%) and the volume of batteries treated is significantly larger than in Belgium (0.302 kg/cap./yr vs 0.219 kg/cap./yr).

[36] From 1 April 2014 the fees for battery producers in Belgium have dropped from 0,1239€ to 0.075€ per battery, a reduction of 40%. Further reductions and link with type of batteries are expected in the future.

***Industrial and automotive batteries***

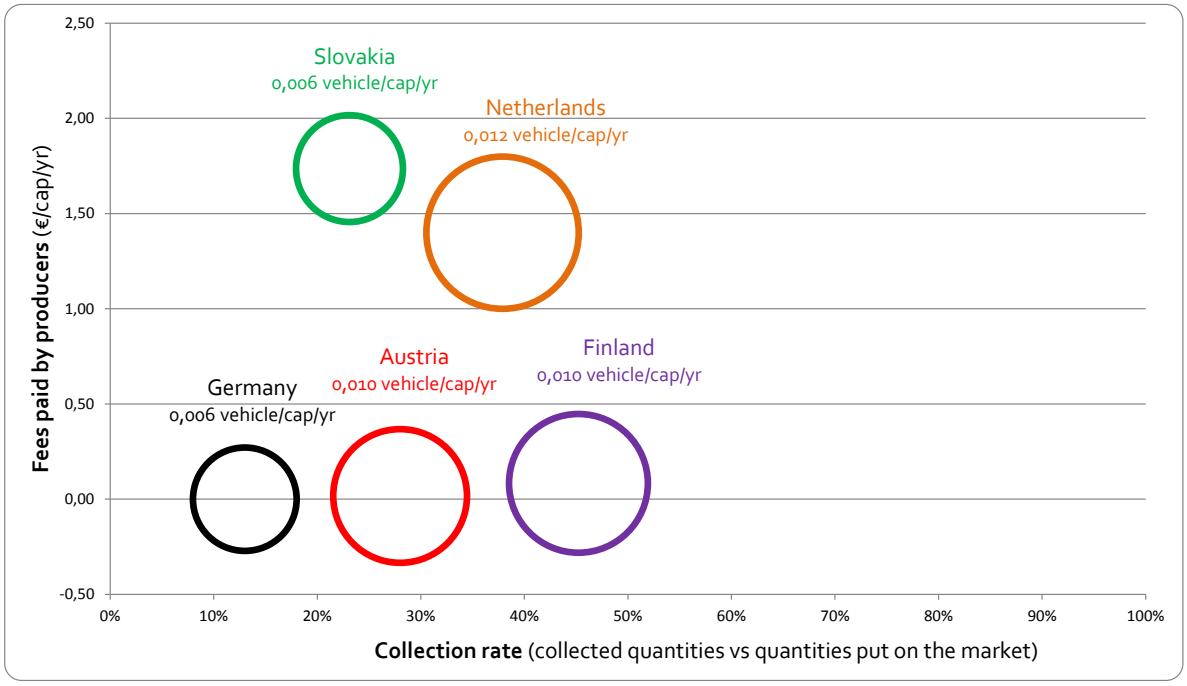
The positive market value of industrial and automotive batteries ensures very high collection rates. All six Member States declare 100% collection rates. These recovery schemes are financed by revenues from recycled materials, and no financial contribution from producers is needed.

**END-OF-LIFE VEHICLES**

| ELVs | | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|---|
| Organisational costs coverage | | Self-financing | - | Self-financing | Fees cover costs for the items which have a negative value | Self-financing | |
| Technical performance (2011) | **Vehicles collected** | 80,000 | 466,160 | 55,075 | 206,150 | 32,796 | N/A |
| | **Vehicles collected per inhabitant** | 0.010 /inh | 0.006 /inh | 0.010 /inh | 0.012 /inh | 0.006 /inh | N/A |
| | **Collection rate** (on the basis of what has been put on the market) | 28% | 13% | 45% | 38% | 23% | N/A |
| | **Recycling rate** (on the basis of what has been collected) | 84% | 92% | 83% | 83% | 88% | 84% |
| | **Recovery rate** (on the basis of what has been collected) | 97% | 106% | 95% | 95% | 90% | 91% |
| Cost effectiveness (2011) | **Total fees € / year** | 142,000 € | - | 450,000 € | 23,311,481€ | 9,418,813€ | N/A |
| | **Fee / vehicle put on the market** | 4 € | - | Min : 3€ Max : 19€ | 45 € | 66 € | |
| | **Total fees paid by producers / recycled vehicle** | 2 € | - | 8 € | 113 € | 287 € | |
| | **Total fees paid by producers / inhabitants** | 0.02 | - | 0.08 €/inh | 1.40 €/inh | 1.74 €/inh | |

Regarding vehicles collected in 2011, two groups of countries can be distinguished: two schemes deal with only 0.006 vehicles per capita (Germany and Slovakia), whereas three schemes manage nearly twice the amount per capita (Austria, Finland and the Netherlands).

**Figure 15: Cost effectiveness of EPR schemes for ELVs in 2011**




***Note:*** *Insufficient information was obtained from the Swedish system to include it in this benchmark*[37]*.*

Annual fees paid by producers (manufacturers or importers) vary greatly from one country to another. They range from no fee (Germany, where there is no PRO at all) or very low fees (3-4 EUR/vehicle, Finland, Austria) to 45 EUR/vehicle (Netherlands) and even 66 EUR/vehicle (Slovakia). This wide gap may be due to the fact that the Dutch and Slovakian PROs actually cover part of the collection and treatment costs, whereas the Austrian and Finnish PROs do not. As a consequence, fees paid by producers (or importers) range from 0 EUR/cap. (Germany) or less than 0.1 EUR/cap. (Austria and Finland) to more than 1.0 EUR/capita (Netherlands and Slovakia).

From this point of view, the Austrian, German and Finnish schemes appear much more cost effective than the Dutch or Slovakian ones. However, in Slovakia funds raised are partly invested in new treatment technologies, thereby developing the waste infrastructure in the country.

Despite this discrepancy regarding fees, recycling rates[38] are high and homogeneous: they range between 83% (Finland,[39] Netherlands) and 92% (Germany). Recovery rates (not represented

[37] Only limited information on BilRetur, the current PRO, is available online. In addition, recent organisational changes make it difficult to assess the current state of the system.

[38] On the basis of what has been collected.

[39] 2010 data.

here) are also homogeneous: between 90% (Slovakia) and 106%.[40] All the studied countries have therefore reached the targets set by the ELV directive.

Differences appear when collection rates[41] are considered. Collection rates are fairly low everywhere and never higher than 45% (Finland). This is due to ELV export practices. The amount of ELVs that do not go through EPR schemes seems to be large, particularly in Germany (collection rate of 13%), Slovakia (collection rate of 23%) and Austria (collection rate of 28%). Those ELVs are possibly illegally dismantled and/or exported.[42] These three countries are also the easternmost Member States studied, which suggests perhaps that exports are towards Eastern European countries where the sector is less consolidated and less well monitored. The European Commission's report on the European second-hand car market analysis can be consulted for further information[43].

**GRAPHIC PAPER**

| GRAPHIC PAPER | | FI | FR | NL | SE |
|---|---|---|---|---|---|
| Organisational costs coverage | | 100 % of net costs for transportation and treatment | Partial coverage of net costs for collection, transportation and treatment | Self-financing (operational costs are covered by resale revenues) | 100% of net costs for collection, transportation and treatment |
| Technical performance | Graphic paper put on the market | 67 kg/cap./y | 52 kg/ cap./y | 83 kg/ cap./y | 40 kg/ cap./y |
| | Recycling rate | 87% | 43% | 84% | 94% |
| Cost effectiveness | Total fees | Currently no fees, the costs of the system are covered by the valorisation waste paper collected. | 67.1 million€ | PRO levies contribution in case of deficit + 700,000€ every 4 years for administration | Currently no fees, the costs of the system are covered by the valorisation of waste paper collected. |
| | Fees / paper put on the market | | 39 €/tonne (for contributing paper) | | |
| | Fees/ paper recycled | | 52 €/tonne | | |
| | Fees/y/inh | | 1 €/inh | | |

The volume of graphic paper put on the market in 2011 ranged from 40 kg/capita (Sweden) to 67 kg/capita (Finland). Recycling rates vary greatly: only 43% in France but 87% in Finland and 94%

[40] In Austria and in Germany, an eco-premium was introduced in 2009, which was paid to customers for replacing an old vehicle with a new one. This scrappage premium was intended to protect the automotive industry during the economic crisis. As a result, more cars became ELVs. In Germany, because of the incentive, four times more ELVs arose in 2011 compared to a normal year, which explains the 106% recovery rate.

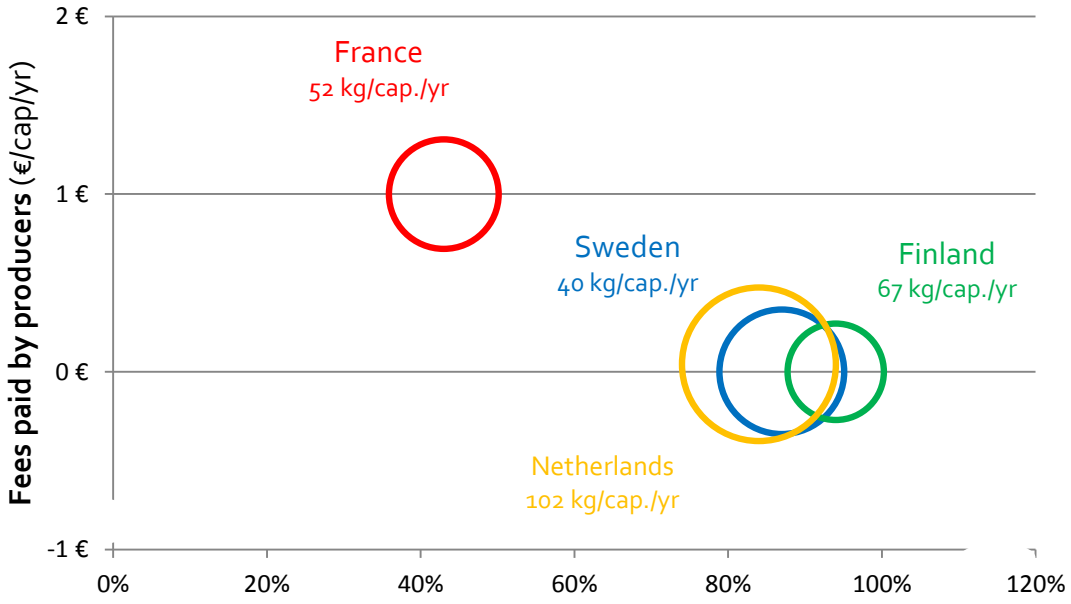
[41] Compared to the number of vehicles put on the market.

[42] Cf. ADEME (2010) *Etude de la gestion de la filière de collecte et de valorisation des véhicules hors d'usage dans certains pays de l'UE*.

[43] http://ec.europa.eu/clima/policies/transport/vehicles/docs/2010_2nd_hand_car_en.pdf

in Sweden. This gap is mostly explained by the higher market value of collected waste paper in Scandinavian countries but also by higher collection costs in France.

**Figure 16: Cost effectiveness of EPR schemes on graphic paper in 2011**




In Finland and Sweden, there are currently no fees: the costs of the scheme are covered by the value of waste paper collected and resold as secondary raw material. In the Netherlands, fees are only levied once every four years to cover for the administrative expenses of the PRO (less than 0.05€/cap./yr). Fees for the financing of the collection scheme are paid by producers in the French case only(1 EUR/cap./yr in 2011).

In the only scheme generating net costs (France), the cost coverage is partial, but could not be quantified.

Due to the market value of graphic paper in Finland and Sweden, these two schemes appear much more cost effective than the French EPR scheme.

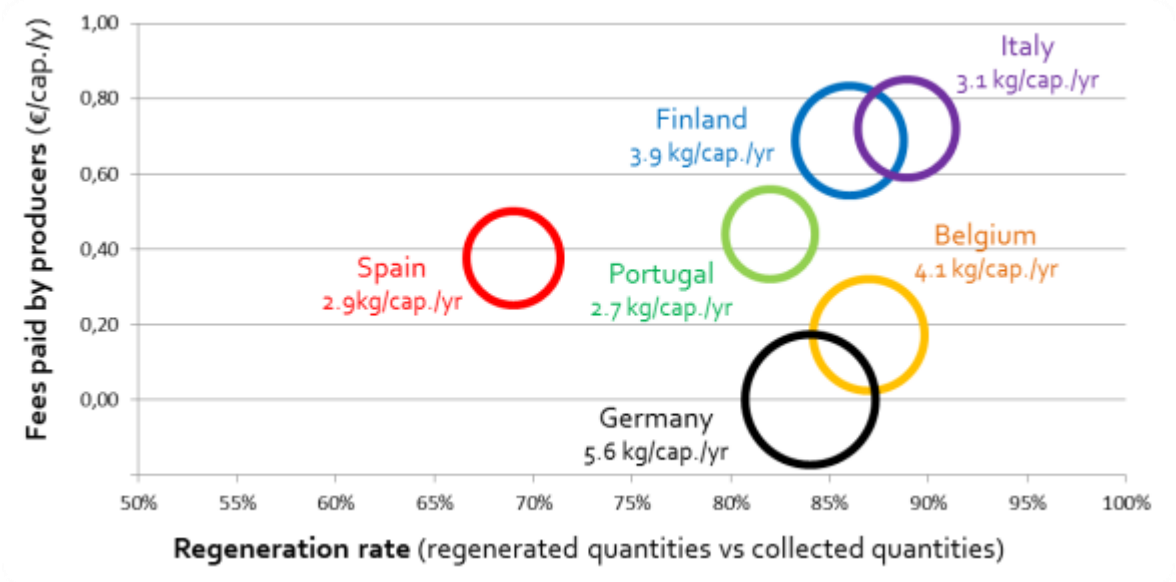
## OILS

| OIL | | BE | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| Organisational costs coverage | | 100% | 100% | 100% The resale receipts cover all costs. | 100% The PRO provides a *cost compensation fee* so that refiners can sell the regenerated oil at market price | 100% | |
| Technical performance (2011) | **Oils collected** | 45,000 t | 20,900 t | 457,000 t | 189,267 t | 28,024 t | 134,452 t |
| | **Oils collected per inhabitant** | 4.1 t/inh | 3.9 t/inh | 5.6 t/inh | 3.1 t/inh | 2.7 t/inh | 2.9 t/inh |
| | **Collection rate** (on the basis of what has been put on the market) | 67% | 70% | 100% | 44% | 76% | 100% |
| | **Recycling rate** (on the basis of what has been collected) | 87% | 86% | 84% | 89% | 82% | 69% |
| Cost effectiveness (2011) | **Total fees** | 1,900,000 € | N/A | 0 | 43,700,000 € | 4,666,237 € | 17,382,256 € |
| | **Total fees paid by producers / recycled tonne** | 42 | N/A | - | 231 | 167 | 129 |
| | **Total fees paid by producers / inhabitants** | 0.17 €/inh | N/A | - | 0.72 €/inh | 0.44 €/inh | 0.38 €/inh |

Waste oils are regulated by the Waste Framework Directive (2008/98/EC). According to Article 3(3) of the Directive, waste oils are "*any mineral or synthetic lubrication or industrial oils, which have become unfit for the use for which they were originally intended, such as used combustion engine oils and gearbox oils, lubricating oils, oils for turbines and hydraulic oils*." Therefore, most of the instituted EPR schemes (except the Belgian one) cover exclusively mineral-based lubricant oils (industrial, non-edible), which actually are the most damaging for the environment.

The quantities of non-edible waste oil collected vary significantly; from 2.7 kg/cap./year in Portugal to 5.6 kg/cap./year in Germany. Regeneration rates range between 69% (Spain) and 91% (Belgium).

**Figure 17: Cost effectiveness of EPR schemes on non-edible oils in 2011**




***Note:*** *In order to increase the readability of the graph, the x-axis starts at 50%.*

In Germany, no fee is required from producers: the scheme is self-financing (revenues cover the costs for collection and treatment). In other countries, the total amount of fees collected in 2011 varies from less than 0.2 EUR/cap. to more than 0.7 EUR/cap. (Italy).

In Spain, around 68% of the industrial oils processed by the main PRO (SIGAUS) are used to produce new base oils (an essential product in the manufacture of new oils), while the remaining 32% are used as industrial fuel (incinerated with energy recovery). In Italy, only 11% of waste mineral oils are incinerated.

The Belgian scheme seems to be the most cost effective: achieving high regeneration rates with a relatively low fee level. The Italian and Finnish schemes achieve fairly high regeneration rates but are much more expensive for producers. The Portuguese and Spanish schemes are about as expensive as each other and cover a similar volume of waste oils (in tonnes/cap./yr) but the Spanish scheme achieves a lower regeneration rate (69% compared to 82%).

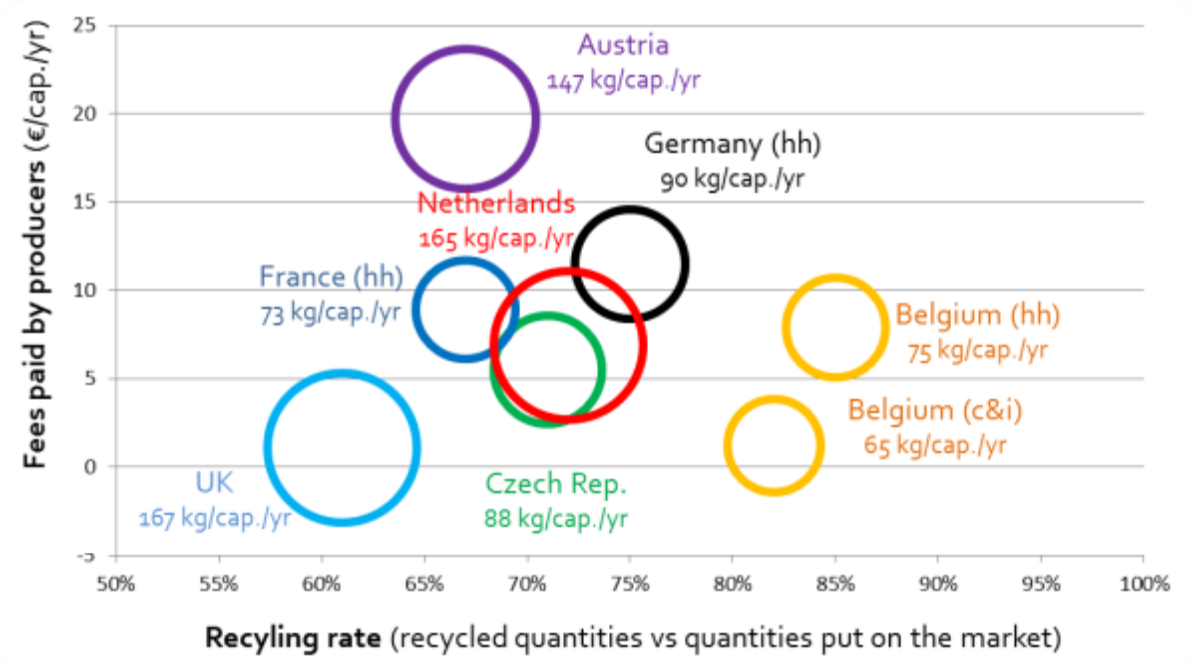
## PACKAGING

| PACKAGING | | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|---|
| Costs coverage | | 100% of collection and net treatment costs for separately collected packaging<br>Costs for incineration of plastic packaging waste not separately collected<br>Participation in local authorities' communication<br>Fund for promoting waste prevention projects | HH: 100% of collection and net treatment costs for separately collected packaging<br>Participation in local authorities' communication<br>PRO's administrative and communication costs<br>Audit of WM operations<br><br>C&I:<br>Incentives for separate collection<br>Reporting by WM operators | 100% of net costs for collection and treatment of separately collected packaging<br>Audits of collection and treatment operators<br>Contribution to the government's environmental fund | 100% of net costs for collection and treatment of separately collected packaging<br>Participation in additional costs for municipalities: communication, clean-up of collection spaces | 75% of net costs for collection and treatment of all HH packaging<br>Participation in communication costs for municipalities<br>R&D, ecodesign and prevention | 100% of net costs for collection and treatment of separately collected packaging<br>Anti-littering program<br>(Until 2013: higher contribution due to tax on packaging) | HH waste: estimated to around 10% (no requirement in terms of costs coverage) |
| Technical performance | Packaging put on the market | 1,226,000 t (147 kg/cap./y) | HH: 825,939 t (75 kg/inh)<br>C&I: 721,517 t (65 kg/inh) | 866,382 t (88 kg/inh) | HH : 7,350,000 t (90kg/inh) | HH : 4,774,000 t (73 kg/inh) | 2,748,000 t (165 kg/inh) | 10,484,000 t (167 kg/inh) |
| | Recycling rate | 67% | HH: 85%<br>C&I: 82% | 71% | 75% | 67% | 72% | 61% |
| | Recovery rate | 92% | HH: 88%<br>C&I: 92% | 0,76 | 80% | 80% | 80% | 67% |
| Cost effectiveness | Total fees | 198.2 M€ (HH: 156,4 M€ C&I: 41,8M€) | HH: 86,7 M€<br>C&I: 13,25 M€ | 55.7 M€ | HH: 941 M€ | HH: 584 M€ | 115,6 M€ | 71 M€ |
| | Fees / packaging put on the market | 129 €/t | HH: 113 €/t<br>C&I: 19€/t | 64 €/t | 128 €/t | 122 €/t | 42€/t | 6.7 €/t |
| | Fees/ packaging recovered | 172€/t (HH: 249€/t C&I: 51€/t) | HH: 119€/t<br>C&I: 21€/t | 91 €/t | 160 €/t | 153 €/t | 52€/t | 10 €/t |
| | Fees/y/cap. | 23,6 €/inh (HH: 18,6 €/inh C&I: 5€/inh) | HH: 7.9 €/inh<br>C&I: 1.2 €/inh | 5.5 €./inh | 11.5 €/inh | 8,9€/inh | 6.9 €/inh | 1.1€/inh |

The quantities of packaging put on the market and covered by an EPR scheme vary from around 75 kg/cap./yr (France, Belgium) to around 165 kg/cap./yr (Netherlands, UK). Most of the differences come from the different scopes of EPR: in France and Germany, EPR covers only household packaging waste, whereas in other countries it also covers commercial and industrial packaging. Although a clear comparison would only be possible within the same perimeter, it was, in most cases, not possible to distinguish the performances of household vs. commercial and industrial packaging (except in Belgium where the two schemes are very different).

The recycling rate is lowest in the UK (all packaging, 61%) and highest in Belgium (household packaging, 85%). All the studied schemes achieve the targets set by the Packaging and Packaging Waste Directive.

**Figure 18: Cost effectiveness of EPR schemes on packaging (2010 or 2011)**




***Note:*** *In order to increase the readability of the graph, the x-axis starts at 50%.*

Fees paid by producers range from 1.1 EUR/cap. (UK, 2011) to 19.7 EUR/cap./yr (Austria,2012). This very wide range is primarily due to the different levels of cost coverage. In the UK, where producers comply by buying Packaging Recovery Notes (PRN) from recyclers, it is estimated that the fee covers only 10% of the total cost of the system. In most other schemes, 100% of net costs for the collection and treatment of separately collected waste are covered (see below; for more details on costs covered and levels of costs coverage, see 89 and Annex).

Nonetheless, the range of costs remains significant even when taking into account these differences.

## WASTE ELECTRICAL and ELECTRONIC EQUIPMENT

| WEEE | | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|---|
| Organisational costs coverage | | HH: 100% transport and net treatment costs C&I: 100% collection and treatment costs | 100% of collection, transport and net treatment costs | 100% of collection, transport and net treatment costs | HH: 100% transportation and net treatment costs | 100% of collection, transport and net treatment costs | | 100% of net transportation and treatment costs |
| Technical performance | **EEE put on the market** | HH: 116,109 t | 148,157 t | HH: 1,370,000 t C&I: 229,285 t | 96,360 t | 15,289 t | 216,558 t | HH: 1,020,509t C&I: 447,208 t |
| | **WEEE arising** | Not evaluated | | Household: 17 to 24kg/cap./y Professional: not evaluated | Not evaluated | | | |
| | **WEEE collected** | HH: 75,134 t (12.7kg/inh) C&I : 1,072 t | 50,886 t (9.5kg/cap./y) | HH: 452,732 t (6.9kg/inh) C&I : 17,284 t | HH: 34,958 t (7.6 kg/inh) C&I : 6,134 t | HH: 4,170 t (2kg/inh) C&I : 117 t | 17,5 kg/inh | HH: 499,024 t 7.9 kg/inh |
| | **Recycling rate** (on the basis of what has been collected) | 84% | 88% | HH: 80% | Between 82% and 88% | 85% | 84% | No information |
| | **Recovery rate** (on the basis of what has been collected) | 93% | 92% | HH: 83% C&I : 95% | 85% | 85% | 92% | |
| Cost effectiveness | **Total fees** | No information available | | HH: 181,000,000€ | 6,567,092€ | No information available | | |
| | **Fees / EEE put on the market** | | | HH: 132€/t | 68 €/t | | | |
| | **Fees/ EEE collected** | | | HH: 384€/t | 160€/t | | | |
| | **Fees/y/cap.** | | | HH: 2.8€/inh | 1.4€/inh | | | |

The recycling rates across countries are fairly homogeneous: between 80% (France) and 88% (Finland). The recovery rate ranges between 83% (France) and 93% (Denmark). All studied schemes achieve the targets set by the WEEE Directive.

High discrepancies arise with regards to the collected quantities: they range from 2.0 kg/cap./year (Latvia) to 17.5 kg/cap./year (Sweden).[44] The new collection targets set by the recast Directive represent a challenge for most Member States, including in this relatively well-performing sample.

There is great difficulty in accessing economic information for WEEE and for 5 of the 7 countries in the sample, no information was provided neither by the EPR schemes nor by the national authorities in charge of the enforcement. Even the level of the fees paid by the producers is not available and the same applies for the cost and revenues incurred in the collection and treatment phases. The main reason put forward by the respondents is that PROs act on a very competitive market and therefore do not share economic information. As a result, a complete benchmark could not be realised, and the small amount of information identified is related to Ireland and France, and shows that large gaps exist: the fees paid by producers are 1.4 EUR/cap. in Ireland and double that in France. Fees charged for certain categories of products (fridges, monitor, TVs) could be obtained in some cases, and this high variability is confirmed by this approach (see Figure 11)

## 2.4 Is there such thing as a 'best performing' EPR model?

EPR in the EU-28 is an extremely broad subject related to many different products, with a great variety of streams, market logics and configurations combined with national and historical specificities. This comparative study is innovative as no such attempt to compare various EPR systems for different countries *and* different product streams has been executed previously.

With regards to the assessment of EPR systems' performance, two main performance indicators were analysed with a view of establishing a quantitative benchmark of the 36 EPR schemes analysed:

- **Recycling or collection rate** (quantities of waste recycled or collected / quantities of waste arising or products put on the market)
- **Cost-effectiveness based on the producers' fees** (total amount of fees collected per inhabitant and per year)

In addition to these two indicators, other secondary data was compiled, when available, in order to allow a more precise comparison:

- Additional product/waste flow data:
  - Quantities of products put on the market
  - Collected quantities
  - Recovered quantities

[44] Some of these figures include professional WEEE, but this usually represents relatively small amounts compared to household WEEE, therefore the comparison remains valid.

- Additional cost information
  - Operational costs and revenues (*when available*)
  - Other costs and revenues for PROs: communication, administrative, surveillance, producer fees, coverage of operational costs (*when available*)

However, several methodological difficulties were encountered during data collection, analysis and EPR system comparison. Extracting and processing comparable quantitative data from the 36 case studies was considerably handicapped by the lack of transparency and availability of reliable data. In most cases, the definition of scope and quantification methodologies differ from one Member State to another (for more detailed analysis of transparency and reporting modalities, see Chapter 3).

Comparing the performance of six different streams is very challenging since, for instance, waste oils are not collected, processed or measured in the same way as packaging or end-of-life vehicles. In addition, even when comparing several EPR schemes for the same stream, various difficulties arise. The main pitfalls were the following:

- **Scope**: The difficulties in defining the scope and limits of an EPR system can be illustrated by the packaging stream. Whereas household packaging is covered by an EPR scheme in all the examined countries, this is not the case for industrial and commercial packaging (the DSD system in Germany and Eco-Emballages in France cover only household packaging). In countries where commercial and industrial (C&I) packaging is covered, it might be through an independent scheme (e.g. Val-i-Pac in Belgium), which allows a clear distinction between household and C&I performance, or through a common scheme (e.g. Nedvang in the Netherlands). In this case, it was not always possible to clearly distinguish between household and C&I packaging performances. Moreover, the respective definitions of household and C&I packaging are not exactly the same in different countries. The same situation applies to batteries (portable [45]/ automotive / industrial), oils (edible / non-edible), etc.
- **Data availability and confidentiality**: when several PROs are in competition, it is much more difficult (sometimes even impossible) to obtain data on costs and revenues as PROs are reluctant to share the data.
- **Methods for data collection and reporting** differ from one country to another, and there is an uncertainty associated with all data provided. For packaging, for example, PROs usually report recycling rates on the basis of the quantities their members put on the market – e.g. Fost Plus (Belgium) and Eco-Emballages (France) annual reports – whereas official reporting to the European Commission takes into account an estimation of the whole market, including the number of free-riders).

Although enormous efforts have been made in the course of this project to ensure comparability of the data collected, not all data discrepancies could be overcome. Because of this, figures might slightly differ from those reported in other sources (e.g. recycling rates reported to

[45] For example, the definition of portable batteries "that can be hand-carried" has led to inhomogeneous definitions among MS (e.g. different weight thresholds)

Eurostat). From the figures presented in this report only the order of magnitude should be regarded as robust information.

However, some clear conclusions emerge from this analysis:

- The best performing schemes are not, in most cases, the most expensive.
- Fees paid by the producers vary greatly for all product categories, even among a small sample of EPR schemes. These differences reflect a difference in scope and cost coverage, or in the actual net costs for collection and treatment of waste (or both).
- No single EPR model emerges as the best performing and the most cost-effective (see Chapter 4. for the discussion on EPR key design and implementation features).

This last statement can be explained by two main elements:

- Comparison between different product streams is impossible, as the quantities, types of waste, and therefore the organisation of collection and treatment, are not comparable; also within each product stream, the sample is very small (4 to 7 cases) and no statistically significant analysis can therefore be conducted.
- Costs and performance are influenced by many factors, including **factors external** to the design and implementation of the EPR scheme, for example:
  - **Population density** (collection costs , which generally represent an important share of net costs, will increase with low population density; these collection costs generally represent the most important);
  - **Historical development of the waste collection and treatment infrastructure**; in particular, economies of scale can be achieved through the development of sorting and treatment capacities. The introduction of EPR may for example trigger this development in its first years of implementation, involving high investments, and therefore high costs, to reach economies of scale, and would then need lower contributions from producers once this implementation period is over;
  - **Value of secondary materials** on the national market; this can be influenced both by the demand in secondary raw materials, and through the development of a recycling industry providing high quality materials;
  - **Awareness of citizens** about the existence of separate collection schemes as well as their willingness to participate in collection schemes. Investing in communication can be a factor of success for EPR schemes;
  - **Existence of other waste policy instruments** (e.g. landfill and/or incineration taxes, pays-as-you-throw schemes, deposit-refund schemes, etc.), which may be complementary to EPR and increase the efficiency of the whole waste management system.

Another lesson from this exercise concerns the significant **lack of transparency** (on key quantitative elements (e.g. fees paid by producers, cost coverage, impact on product sales price, cost structure, free riders percentage, etc.).

# Chapter 3. Main topics considered for guidance

*This section is organised around four main topics relating to the design and implementation of EPR schemes: 'share of responsibilities and dialogue between stakeholders', 'cost coverage and true cost principle', 'fair competition', and 'transparency & surveillance'.*

*These issues were selected based on their relevance with regards to the efficiency and effectiveness of EPR schemes, their applicability to all product categories, and their frequency pertaining to the feedback received from the stakeholders during the course of the study.*

*Each of these topics is initially introduced by providing definitions, a presentation of the analytical framework, and a discussion of the relevance for the development of guidelines. Then, the corresponding stakeholder feedback is summarised in the form of perceived advantages or drawbacks of different available options. Thirdly, an empirical assessment based on the 36 case studies is performed, taking into account additional information on the situation in the EU-28 as a whole. This assessment presents the different situations that are observed in the different Member States, and puts forward interesting cases or case studies.*

*Finally, conclusions are drawn based on both the empirical assessment and stakeholder feedback. These conclusions contribute to the formulation of initial guiding principles on the design of efficient and effective EPR schemes. These guiding principles are then further developed in Chapter 4.*

*NB: For the issues in which very rich stakeholder feedback was conveyed, the conclusions draw mainly on stakeholder feedback. For some other issues, the feedback was not as frequent, therefore the conclusions draw mainly on the assessment of the 36 case studies.*

**Box 4: When is an EPR scheme necessary?**

- **In some cases, financing the collection, recovery and recycling system is not necessary**, as market dynamics are sufficient to reach the recycling targets, because the scheme is self-financed (i.e. through revenues from reselling materials).
- For example, in Austria, the management of ELVS is self-financing and the costs for collection, dismantling, recycling, and treatment are covered by the revenues from the recycling materials. The main difference between the management of ELVs and the management of other waste streams is that ELVs have a comparably high value.
- Consequently, **an option could be to leave material recovery to market forces** when selling revenues from recovered materials are high enough to cover all operational costs. However, revenues from reselling materials fluctuate, as the 2008-2009 economic crisis has shown. Hence, how can these fluctuations be taken into account? No PRO can leave the risk open that self-financing streams get suddenly disrupted because selling revenues are no longer high enough to cover all costs and recovery consequently plummets.
- It must therefore be ensured that the system works in all market conditions and that it is flexible enough to adapt to any situation.

**Box 5: When is an EPR collective scheme necessary?**

- **A collective compliance scheme** (and therefore the setup of Producer Responsibility Organisations) is not systematically required to have a good EPR implementation:
- In some cases, an individual responsibility scheme is more relevant. These cases are those where:
  - The corresponding products market is highly concentrated,
  - Producers can implement a take-back system to their consumers.
- In Germany, for instance, the car producers have individual contracts with collection and dismantling facilities (individual scheme). Car producers and importers have to take back all the vehicles of their brand in an authorised permitted collection facility or an authorised dismantling facility designated by the car producer. Furthermore, the collection and dismantling facilities are organised in loose networks, but negotiation occurs between the individual car producer and the individual facility. The car owner is obliged to bring the car to such an authorised permitted collection facility or an authorised dismantling facility. At the collection or dismantling facility, the owner is given a certificate of destruction.

## 3.1 Share of responsibilities and dialogue between stakeholders

### 3.1.1 Issues under consideration

#### *3.1.1.1 Typology of producer responsibility*

Since the introduction of solid waste management policies in the 1970s, local public authorities have mainly been responsible for household/municipal waste management. Extended Producer Responsibility systems for products which result mainly in household/municipal waste either build upon this responsibility to finance it (partially or completely), or replace it altogether for the respective product/waste type. The situation is different for EPR schemes on products, which result in non-municipal waste. A significant part of non-municipal waste is typically managed through B-2-B arrangements (historically, the 'polluter pays' principle has applied to the professional waste producers).

EPR schemes are often described as being 'financial' EPR schemes when the responsibility of waste management is left to municipalities and the financial responsibility is left to producers. Contrastingly, they are described as being 'organisational' EPR schemes when the physical responsibility of waste management is transferred to the producers. In reality, there is a great variety of schemes, and the border between these two models is blurry. The producers' responsibility within an EPR scheme may be defined as:

- **'Simple' financial responsibility**: Producers have no obligation but to finance the existing waste management channels (e.g. through Packaging Recovery Notes in

the UK). This study shows that schemes using this model have few other incentives to improve waste management, apart from the financial incentive (see Figure 19).

- **Financial responsibility through contracts with municipalities**: Producers establish contracts with municipalities to collect and manage waste (e.g. packaging in France). The producers' motivation to improve waste management depends on the type of contract and on the dialogue with municipalities. The financial contribution of producers can be conditioned to quantitative results reached by municipalities (in terms of collection or recycling rate), quality check, or requirements on the type of collection and treatment schemes to be implemented.
- Financial responsibility and **partial organisational responsibility**: Some activities are kept under the responsibility of municipalities (e.g. collection whether implemented directly by public waste collection operators or contracted to private companies), backed financially by producers, whereas some other activities (e.g. sorting, recovered materials reselling) are under the responsibility of producers (e.g. packaging in Belgium).
- Financial responsibility and **full organisational responsibility**: The producers subcontract activities to professional waste collection and treatment operators (e.g. WEEE in France), or even own part of the collection and treatment infrastructure (e.g. packaging in Germany) (see Figure 20).

In many EPR schemes, the producers' responsibility may be handed over to producer responsibility organisations (PROs), which act on behalf of the producers.

Figure 19: EPR scheme organisation in case of simple financial responsibility from PROs

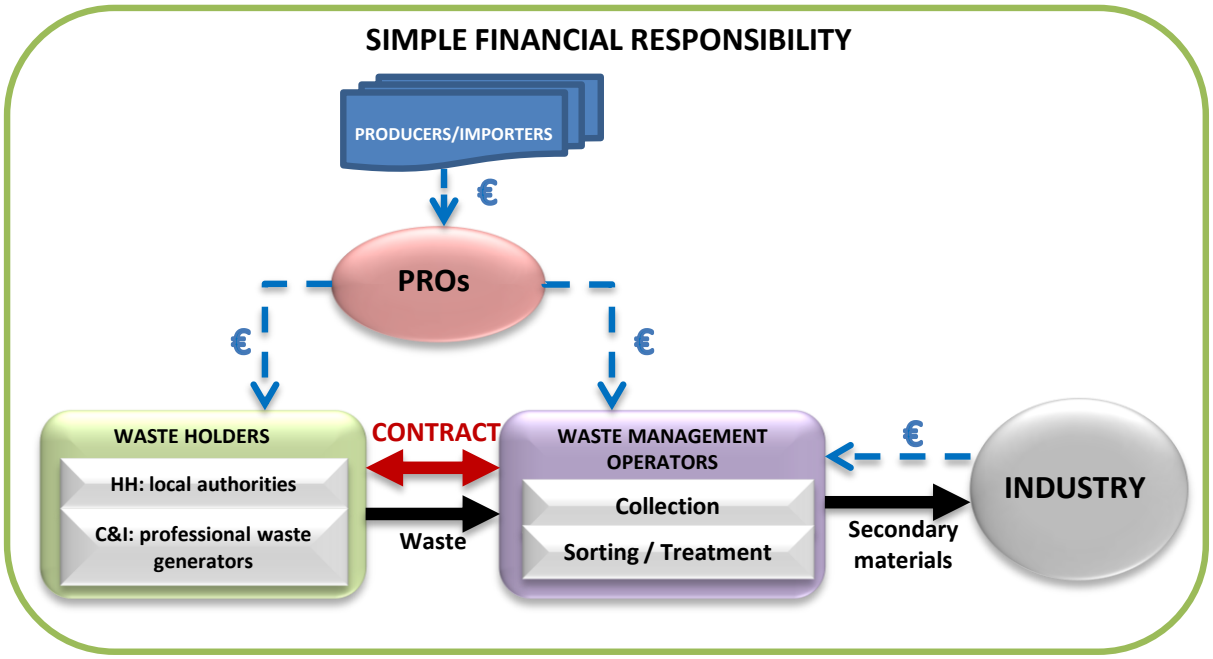


Figure 20: EPR scheme organisation in case of full organisational responsibility from PROs


### 3.1.1.2 *The need for dialogue among stakeholders*

In addition to the definition of responsibilities within EPR schemes, one important and related feature is **the way that dialogue is organised among involved and co-responsible stakeholders** (producers, PROs, national and local authorities, waste management industry, NGOs, etc.). Over time, the waste management chain may evolve along with stakeholders' responsibilities. This may require an institutional arena where stakeholders can meet and interact on a regular basis.

## 3.1.2 Findings from the case studies

### 3.1.2.1 *Share of responsibilities among stakeholders*

The table below summarises the types of shared responsibility observed for the 36 EPR schemes, which were analysed throughout the course of the study. Details about the respective role of producers and other stakeholders (in particular local authorities) are provided in the Annex as well as in each individual case study.

Table 13: Types of producers' responsibilities in the 36 EPR schemes studied

| Main system |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Financial responsibility | AT<br>FI<br>NL<br>SK<br>SE | FI<br>IT<br>PT<br>ES<br>BE[46] | BE – c&i<br>UK | | BE[47] | |
| Financial responsibility through contracts with municipalities | | BE[48] | CZ<br>FR<br>NL | FR | | |
| Financial Responsibility with partial organisational responsibility | | | BE – hh | FI | AT<br>BE[49]<br>DK<br>FR<br>NL<br>CH | DK – hh<br>IE<br>SE<br>UK |
| Financial Responsibility with full organisational responsibility | DE | | AT<br>DE | SE | | DK – c&i<br>FI<br>FR – hh<br>LV |

As can be seen above:

- ELVs and waste oils are mostly managed through 'financial EPR';
- Waste batteries and EEEs are mostly managed through (partially or fully) 'organisational EPR';
- Situations are more diverse regarding packaging and graphic paper.

The following elements may explain such a classification into three groups, which arises from the case studies:

- **Waste streams that are usually collected through professional channels** (ELVs at dismantling facilities, mineral oils at garages), are usually those that have both a hazardous potential and a positive value (their treatment is often self-financed by revenues from sales of the resulting recycling materials). In general, for waste arising from professional sources (industrial or commercial), there is a tendency to maintain the existing structure, with direct transactions or contracts between waste holders and waste management companies. In these cases, producers, or PROs on their behalf, tend to play a financial role only, supporting a part of the net cost necessary to reach the targets set by the regulator.

[46] Non-edible oils
[47] Automotive batteries
[48] Edible oils
[49] Portable batteries

- **Waste streams which arise on the household level and are potentially hazardous** (batteries and WEEE)**,** demand a rather organisational responsibility. This is most likely the case because it is necessary to set up a new specific treatment path adapted to these products.
- The whole range of possible configurations from financial responsibility to financial and full organisational responsibility was identified with **waste types that arise at the household level and which are historically collected by the municipal services along with the household waste** (packaging & graphic paper). These waste streams tend to have been, to some extent, separately collected/sorted and sent to recycling by local authorities before the introduction of the EPR scheme (e.g. glass and paper). Regarding packaging, the heterogeneity of configurations can also be related to the fact that in most Member States it was the first EPR scheme ever introduced. As such, this product stream has been more experimental and has given rise to a diversity of bottom-up approaches.

The table below (see Zoom n°1) provides a qualitative overview of PROs' responsibilities for each of the 6 product streams covered by the case studies.

**ZOOM N°1: STAKEHOLDERS' RESPONSIBILITY ACCORDING TO THE CASE STUDIES**

The most common role for PROs in EPR schemes for batteries includes a partial organisation of the waste battery collection system. PROs provide take-back points free-of-charge to consumers. They furthermore collect and sort batteries brought by consumers to municipal civic amenity centres. To do so, producers transfer their obligation to a PRO, which then organises the pick-up and reimburses municipalities (or retailers) for providing collection points.

Except for the German case, PROs assume only a financial responsibility with respect to the collection and treatment of ELV.

Manufacturers also have the information responsibility (coding standards/dismantling information) (Art. 8 of EU-directive 2000/53/EC), the responsibility to make re-usable/recyclable parts and materials (art. 7(4) and EU-directive 2005/64/EC) and the responsibility to use less hazardous substances (art. 4 and Annex II).

The final car end user/owner brings the vehicle to an authorised treatment plant. The take-back is cost-free, except when the ELV does not contain valuable components anymore. Authorised operators treat the ELV and resell the recovered materials for recycling. These authorised operators report the corresponding quantities either to the PRO or to the authorities. Local public authorities play no role.

With respect to graphic paper there is no dominant model for a PRO's role: PROs can either assume a full organisational responsibility, a partial organisational one or a financial responsibility by contracting local public authorities.

With respect to waste oils, PROs mostly bear a mere financial responsibility. The waste oils produced by industries are collected by private operators and sold to refineries, cement kilns or incinerators. A PRO's role is mainly to aggregate data, both from oil producers and from collection and treatment operators. Whenever costs are not covered by the secondary oil market value, which tends to increase steadily in recent years, PROs reimburse the collection and treatment costs based on the declaration by licensed operators. Local public authorities do not play a big role; they are involved insofar as household oils are concerned.

As for graphic paper, the type of PRO responsibility with waste packaging is quite diverse, ranging from full organisational responsibility (Austria, Germany) to simple financial responsibility (UK and C&I packaging in Belgium). Most of the time, local public authorities are involved in the operations of waste household packaging (collection, sorting).

The responsibility of PROs is either partially or fully organisational. In general, PROs collect WEEE from municipal collection sites or retailers. Local authorities generally accept household WEEE free of charge at their civic amenity centre. In some cases they bear this collection cost (Denmark, Sweden), in other cases they receive a compensation by the PROs (Finland, France).

#### *3.1.2.2 Organised dialogue among stakeholders*

This study illustrates the importance of maintaining a dialogue between the different stakeholders that participate in EPR schemes. The benchmark analysis conducted throughout this case studies shows that only few specific dialogue structures are in place:

- Several initiatives foster cooperation between EPR actors, for example through the PRO recognition procedures (e.g. Accreditation Committees in France, which gather public authorities, producers, retailers, municipalities, waste management industries, consumer and environmental NGOs). This is illustrated in zoom n°2 (for further details, see section 3.4) and further discussed in the last section on control (guidelines).
- **However, in most cases, no specific dialogue initiative was identified** (as in all ELV cases for instance), which can sometimes cause contentious relationships between stakeholders.
- The absence of a specific structure does not mean that there is an absence of dialogue between stakeholders. The most common dialogue platform is the PROs' boards, in which non-voting members are often included. In addition to official dialogue channels (i.e. waste management associations, or governmental agencies), **dialogue between the stakeholders usually exists informally**.

**ZOOM N° 2: MULTI-STAKEHOLDER DIALOGUE PROCEDURES IDENTIFIED THROUGH THE CASE STUDIES**

**In Belgium**: Only for portable batteries, a representative of each regional administration and one of the federal administrations of the environment are members of the Board of Directors of the PRO and do not have any voting power. Four times a year, the PRO organises a monitoring commission with the 3 regional governments in order to discuss results and arrangements.

**In France**: In 2012, an organisational policy committee was created to oversee the system. It is currently composed of collective scheme members and of producers. In addition, a consultative commission was created in order to monitor the PROs actions and assess the possible authorisation of new PROs or of any individual system. It is composed of 18 representatives of the concerned sectors (French Ecologic and Finance Ministries, ADEME, local authorities, producers, treatment operators, environmental protection and consumer associations).

**In the Netherlands**: The PRO for portable batteries (Stibat) collaborates with Auto Recycling Nederland (ARN) for the collection of end-of-life vehicles and automotive batteries.

**In France:** An advisory commission is composed of members of the three ministries and members of the graphic paper related sector. These parties meet every trimester to pilot the activity and agree on general orientations of the PRO.

**In Belgium**: There is consultation by the Interregional packaging commission (who delivers authorisation to PROs), through the 'packaging platform' and bilateral consultation of other stakeholders.

**In France**: A consultation committee regroups all involved stakeholders (producers, retailers, PROs, local authorities, consumers, and environmental NGOs). This committee is consulted, in particular, during the accreditation procedures, and advises on the content of the accreditation contract, which sets the objectives and obligation of the PROs. In addition, two mandatory organisational committees are required to be set up by the PRO. These committees consist of a consultation joint committee (between PROs and local authorities) and an associative joint (composed of representatives from PROs and from civil society organisations).

**In France:** A consultation committee includes all involved stakeholders (producers, retailers, PROs, local authorities, consumers, and environmental NGOs).

**In Ireland**: a WEEE working group was set up to guide and coordinate local authorities in their enforcement of producer responsibility initiatives by providing consistent enforcement throughout the country and a forum for information exchange.

## 3.1.3 Taking stakeholders' expertise into account

### *3.1.3.1 Defining the objectives of the Extended Producer Responsibility*

The discussions with stakeholders revealed that in many cases the goals of EPR scheme under discussion were not clearly specified. Thus the first conclusion from these discussions is that the primary objectives assigned to the EPR scheme need be clarified even before reflecting on responsibilities or dialogue.

Does EPR aim at covering the products' end of life costs? Providing eco-design incentives? Achieving resource efficiency? Ensuring high quality recycling? Its primary goal may not be specified. This may explain why the optimal configuration of responsibilities and the link in the chain where the incentive is the most efficient frequently remain unclear.

The goal of EPR systems could be stated as follows: Extend the producer's physical and financial responsibility for a product to the post-consumer state of a product's life cycle, in order to internalise the end-of-life management costs according to high environmental standards and provide an incentive for producers to take environmental considerations into account along the products' life from the design phase to their end-of-life. As such, the extended producer responsibility aims at supporting the implementation of the European waste hierarchy as referred to in article 4 and therefore at increasing, in priority, prevention, preparation for reuse and recycling.

According to this definition, the producers' responsibility is in in fact a shared responsibility among various stakeholders. There is therefore a need to clarify and specify the respective responsibilities.

### *3.1.3.2 Share of responsibilities*

During the course of this study, no consensus was reached amongst the involved stakeholders regarding the question whether the producers' responsibility should be only financial or also organisational. The following main points were raised:

- Flexibility should prevail to determine the desirable level of each actor's implication. This repartition actually depends on two main factors:

1. **The historical configuration in each Member State:** Stakeholders often underlined the historical role of LPAs in household waste management, and more generally their responsibility in territorial and environmental policies. In particular, citizens identify municipalities as the entity responsible for a city's cleanliness. However, the size and functioning of municipalities vary within and between Member States, and the best approach for involving them in EPR schemes might vary too.

2. As seen in the benchmark analysis, **how far the PROs' responsibility should go may depend on the type of products**:

- Some waste items have historically been collected together with municipal residual waste;
- Some flows have a positive economic balance (and are self-financing) due to resale revenues, whereas most of the flows still represent a net cost;
- Some products subject to EPR might be collected together (e.g. WEEE and B&A, ELV and B&A, paper and packaging), which can make it more difficult to define the scope of organisational responsibility;
- The PROs' responsibility perimeter may also depend on the type of waste producer. Often times, a relevant distinction needs to be made between household waste (or B2C) and between commercial and industrial waste (or B2B).

Stakeholders often mention the following arguments in favour of the two most contrasting setups:

**Arguments in favour of a full organisational responsibility:**

- Direct surveillance of waste handling operations is exercised by the responsible producers;
- Direct investment capacity is available, particularly in the first years of the EPR scheme when infrastructure development is needed, and/or for products that require specific treatment processes;
- There are increased incentives for producers to seek cost-efficiency improvements.

**Arguments in favour of simple financial responsibility**

- Historical organisations are preserved, and adaptation to the local context is facilitated;
- Local authorities remain in charge for all MSW management, which is in line with their general responsibilities for a sound and clean environment and the public service dimension of (municipal) waste management operations;
- EPR schemes can be articulated with other incentives to promote for instance separate collection and recycling (e.g. Pay-As-You-Throw schemes or landfill taxes);
- Social economy actors can still play a role, as public local authorities are their main support;
- Fair competition at the waste management operations level is most likely established (public tenders are set up, operators are not contracted either by a PRO in a dominant position to set prices or by a PRO which provides the same operational services).

As a whole, there was a general agreement to acknowledge that **there is no 'one-size-fits-all' solution, which would be appropriate** for all EU Member States and for all of the waste streams considered.

The stakeholders interviewed also reached a consensus on two additional key issues:

- **Different stakeholders might have a role to play**: producers, producers' responsibility organisations (PROs), local public authorities (LPA), national authorities, waste management operators, etc. **Responsibilities should be clearly defined throughout the whole life cycle of the products/waste flows.**
- **A formal and permanent dialogue** should be established at a national level, with LPAs and other stakeholders.

### *Dialogue among stakeholders*

Taking into account:

i) That producers finance the EPR schemes and

ii) That local public authorities are ultimately accountable of what happens with municipal waste (whether as part of an EPR scheme or outside of it),

All stakeholders agreed that there should be a **dialogue and exchange of information** between public authorities and producers (PROs). Other stakeholders, such as waste management operators (and NGOs), could also be involved in this cooperative approach.

Although dialogue often takes place informally between stakeholders, a formal arena appears opportune, given the share of responsibilities which is at stake. EPR is a policy that involves several actors along the supply and disposal chain. Such actors are not always acquainted among each other and their scope of intervention is evolving. Therefore, dialogue platforms should be promoted.

Stakeholders also underlined that such a dialogue process could be legally framed. In light of this, stakeholders suggested that Member States could play a role in coordinating stakeholders' involvement and setting up a dedicated **multi-stakeholder platform** (as it exists in Austria for batteries, or France for most EPR schemes). Furthermore, (recycling) targets applicable for public authorities and targets striving to be reached by EPR schemes should be harmonised. See also the role of the authorisation procedures in section 3.4.

## 3.1.4 Towards guiding principles

From this analysis, we can infer the following guiding principles (further developed in Chapter 4):

| | |
|---|---|
| **Statement n°1:** | **Definition of EPR**<br>The definition and objectives of EPR should be clarified. |
| **Statement n°2:** | **Shared responsibilities and dialogue**<br>Responsibilities should be clearly defined throughout the whole supply chain.<br>Multi-stakeholders platforms should be encouraged to ensure dialogue among stakeholders. |

## 3.2 Cost coverage and true cost principle

### 3.2.1 Issues under consideration

#### *3.2.1.1 The end-of-life costs covered by producers*

Defining costs that should be covered by EPR is a relevant issue. Most EPR schemes clearly cover partly or fully the **net costs for the management of waste that has been separately collected** (e.g. costs for collection and treatment, minus revenues from the sales of recovered materials), as well as **administrative, reporting and communication costs relative to the operation of collective schemes**.

'Full-costs' theoretically include (in addition to those aforementioned):

- Collection, transport and treatment costs for non-separately collected waste (waste covered by EPR but not entering the separate collection channel, e.g. waste collected together with mixed municipal waste);
- Costs for public information and awareness raising (in addition to a PRO's own communication initiatives), to ensure participation of consumers with in the scheme (i.e. through separate collection);
- Costs related to waste prevention actions;
- Costs for litter prevention and management;
- Costs related to the enforcement and surveillance of the EPR system (including, auditing, measures against free riders, etc.).

In addition, for those costs explicitly covered by the EPR system, the level of coverage (full or partial) by the producers varies. This level of coverage is closely linked to the share of responsibilities between stakeholders, see section 3.1).

#### *3.2.1.2 Modulation of producers' fees to reflect true costs*

Finally, collective EPR schemes differ in how these costs are passed on to each individual producer. Some PROs apply an average fee to all their members (with a minimum degree of differentiation, e.g. per type of materials in the case of packaging), whereas other PROs try to introduce graduations in order to reward those who actively contribute to decreasing end-of-life costs and/or make eco-design efforts.

## 3.2.2 Findings from the case studies

### *3.2.2.1 Costs covered*

**Operational costs**

In most of the benchmark cases, net operational costs (i.e. collection, transportation and treatment costs) for the management of separately collected waste are covered by the EPR system.

The extent to which net operational costs are assumed by PROs (and therefore covered by producers' fees) is highly variable and depends notably on the share of organisational and financial responsibilities of the various stakeholders, as well as on the national framework for EPR.

For instance:

- In most cases for battery waste, the financial responsibility assumed by battery producers covers 100% of collection and treatment costs.
- For WEEE, PROs cover 100% of transportation (pick-up from public amenity centres) and treatment costs. However only in three out of seven cases, PROs also cover 100% of the collection costs, through reimbursement to local public authorities.
- In five packaging schemes studied, 100% of net costs for separately collected waste are covered. This statement is valid with the exception of France (where 75% of the costs related to the management of separately and non-separately collected waste are estimated to be covered), and the UK (where there is no cost-coverage obligation, and where around 10% of the net costs are estimated to be covered by the EPR scheme).
- For some streams, operations are self-financed. This means that revenues from the recycling materials' sales fully cover the costs for collection, transport and treatment. In these cases, producers' fees (if any) are mainly used to fund data management, auditing activities, communication efforts and administrative costs (see below). This mainly applies to ELVs, waste oils and graphic paper. However, the situation may vary from one country to another: in the case of graphic papers, collection and treatment costs are entirely covered by revenues from recycling materials' sales in Finland and Sweden, but only partially in France.

**PROs administration, communication and reporting costs**

Beyond operational costs, the producers' fees also finance the other essential functions of a PRO. This includes:

- Administration of the EPR scheme,
- Communication with producers and other stakeholders,
- Data management and reporting.

More details can be found in the zoom below and in annex 5.3.

**ZOOM n°3: RELEVANT PRACTICES REGARDING COSTS COVERED IN THE CASE STUDIES**

The focus of this zoom is on costs covered aside from net costs for separately collected waste (which are covered in most cases, see above).

| | |
|---|---|
|  | In Austria, PROs have to use 3 ‰ of their annual income to support waste prevention projects. |
|  | In the Netherlands, the producers' fees also cover the costs of a remediation treatment of materials with a negative residual value. |
|  | In the Finnish government-run scheme, 75% of the funds raised go to a remediation fund of oil-related soil contamination.<br>In Portugal, 5% of the PRO's budget must be dedicated to communication and awareness raising activities and 3% to research and development. |
|  | In France, only 75% of collection and treatment costs are covered, however, these include non-separately collected packaging waste remaining in the residual fraction.<br>Beyond operational, data management and communication costs, fees also:<br>- Contribute to a prevention / governmental fund (Austria, Czech Rep, Belgium);<br>- Cover additional costs for municipalities (e.g. use of public space, container area cleaning, etc., cf. Germany);<br>- Cover R&D and prevention actions (France);<br>- Cover anti-litter programmes (The Netherlands, Belgium). |
|  | Beyond operational, data management, communication and enforcement costs, fees also cover:<br>- Clearinghouse costs (Denmark, France, Ireland);<br>- R&D activities (France). |

When the costs that need to be covered by EPR do not fall within the operational responsibility of producers, nor within the direct functioning costs of PROs, some EPR systems use a reference formula (or reference cost) to estimate the amounts to be covered, and to determine how much producers should contribute (e.g. by reimbursing local authorities). This case is exemplified by the Belgian EPR scheme for batteries, where the reimbursement is based on a reference civic amenity site, and the Belgian EPR scheme for oils, where the reference formula takes into account average costs.

**Box 6: Adapting the PRO's role to reselling prices fluctuations**

If a waste stream has a largely positive value, a flexible system could be put in place only requiring contributions by producers as needed. Some **good practices** can be highlighted:

- The EPR system for lubricant oils in Germany does not impose a fee on producers due to the high value of the product stream; neither does the system for graphic papers in Finland.
- The EPR system for graphic paper in the Netherlands requires a producer contribution only in certain cases, dependent on the market.
- The Belgian EPR system for packaging performs highly with high cost efficiency. Fost-Plus covers all costs for the collection, sorting, recycling and treatment of household packaging. Fees are adjusted annually to take into account revenues from recycling.

In some cases, these reference costs are related to a 'minimum level of services'. For example, in Belgium, local authorities are reimbursed for packaging collection based on a certain level of collection services with defined frequency of collection and density of the collection network. In some cases, the reference costs are related to 'optimised net costs'. This is illustrated through France's packaging EPR scheme, where the reference costs are evaluated based on an optimal functioning of the collection and sorting operations.

The zoom below illustrates this issue of cost evaluation through examples from the case studies.

**ZOOM N° 4: RELEVANT PRACTICES REGARDING COSTS EVALUATION IN THE CASE STUDIES**

In Belgium, a fixed environmental tax made producers pay more to the PRO than the actual collection and treatment costs would require. With the recent replacement of the tax by a fee aimed at reflecting only the real collection and treatment costs, producers' contributions are expected to lower in future.

A reference cost is used by the Belgian PRO for portable batteries to reimburse local public authorities, based on a reference civic amenity site.

The cost reimbursement may be based on a reference formula, which takes into account average costs (e.g. Belgium) and/or the world oil base price in order to adjust the reimbursement rate (e.g. Spain).

In the Netherlands, PRN (the non-packaging paper PRO) determines every quarter an 'international market price' for paper. When this price goes below the reference cost (set through a market study and negotiations with municipalities, and regularly revised), PRN reimburses the difference to municipalities (up up to 25 €/tonne).

#### *3.2.2.2 Modulating the producers' fee*

EPR is a policy aiming at internalising end-of-life costs into the products' price, thereby creating an incentive for producers to take into account environmental aspects into the design of their products (i.e. prevention, lifetime, reparability, recyclability, hazardous substances content). Although sound waste management and recycling have generally increased through the implementation of EPR schemes, it is difficult to identify the impact of EPR on eco-design.

Firstly, few or no quantitative targets or indicators on eco-design and waste prevention have been developed within EPR schemes, as all of them are designed around main objectives on waste collection and recycling.

Secondly, the development of collective schemes, which mutualise responsibilities of many different individual producers, involve a risk of 'averaging' the costs among producers, thereby deter individual efforts for eco-design. However, through various approaches, some schemes have introduced a form of fees 'modulation' based on certain eco-design criteria. More globally, the modulation of fees aims at promoting the true cost principle. The true cost aims at individualising the producer responsibility by linking the financial responsibility with the true costs of the management of the products put on the market by a specific producer. Zoom n°5 below introduces some of these initiatives.

**ZOOM N°5: RELEVANT PRACTICES REGARDING FEE MODULATION**

**In France,** PROs have introduced a fee modulation depending on the batteries' respective environmental impacts and accompanied by technical adaptation propositions.

As the schemes from our sample are mostly 'self-financed', fees paid by producers do not cover dismantling and remediation costs and therefore are not conceived to reflect them.

**In France,** an 'eco-modulation' of fees was introduced, based on recyclability criteria, accompanied by technical adaptation propositions.

Although not all kind of oils generate the same amount (some oils evaporate when they are used) and quality of waste oil, in most of the cases from our sample a unique tariff is applied to all producers.

**In Belgium,** fees are set to reflect the realistic costs of collecting and treating various types of packaging material. Green dot tariffs per ton are different for: glass, paper/card, steel, aluminium, plastics, beverage cardboard, "other recoverable" and "other non-recoverable". The current system criticism is based on the fact that fee diversification does not take detailed information on recyclability of sub-fractions into account anymore. Indeed, the membership fee depends on the amount of material (ex: plastics) put on the market and not on the type of material sub-types (ex: PET, PP, HDPE). Still, the eco-modulation principle has been introduced. Furthermore, both PROs offer a zero fee for re-usable packaging.
**In France,** a bonus/malus system (up to 100% of the base-fee) was introduced, based on the recyclability and the producers' prevention efforts and accompanied by technical adaptation propositions.

**In Denmark,** the governance of the PRO (El Retur) has separate sub-organisations for each category of WEEE as well as one for batteries. This ensures that paid fees are at least aligned with the collection/treatment costs for each type of WEEE (fees charged for a certain category must cover the costs for this category).
**In France,** the producers' fees are modulated according to a set of environmental criteria: reusability, recyclability, lifetime, presence of hazardous substances, etc.

## 3.2.3 Taking stakeholders' expertise into account

### *3.2.3.1 What costs should be covered by producers' fees?*

The following bullet points show the main answers stakeholders gave on the questions, 'what costs should be covered by the producers' fees?' and 'to what extent?'

- There seems to be a consensus on the fact that EPR systems should cover the collection, sorting and treatment costs of separately collected waste management minus the revenues from recovered material sales (thus the net costs). The share of costs actually covered by producers should be related to the share and definition of responsibilities within each EPR scheme. In addition, most stakeholders suggested that fees could also cover a reasonable share of the communication and awareness costs, as these are an integral part of any recycling scheme, as long as they are targeted, useful and coordinated.
- Another issue discussed was whether fees should cover the costs of items (targeted by the EPR scheme) collected as part of the residual waste. Stakeholders agreed that this should be applied when no separate collection is provided. In the case appropriate separate collection is provided, and the presence of products covered by EPR in residual waste is due to a lack of participation, no consensus was reached.
- In particular, a question was raised on whether producer responsibility should include litter management costs. In other words, there has been a discussion on whether a distinction should be made between misbehaviours from consumers (litter generation) and misbehaviours from producers (e.g. marketing products which are expensive to treat as waste). No clear consensus between stakeholders was reached on this issue.
- The question was raised, whether it would be appropriate for producers' fees to include also the full environmental impact costs of the product. No consensus emerged on this topic, and it seems that it would go beyond the current study.

In conclusion, there is no 'typical' approach in practice on other costs related to the end of life of the products, and more generally related to the implementation of the EPR scheme. Furthermore, in most cases, these other costs, as well as their level of coverage by producers are poorly defined. Among those, the following costs seem potentially relevant, and are taken into account (in various manners) in at least one of the EPR schemes studied:

- Collection, transport and treatment costs for *non-separately* collected waste (waste covered by EPR but not entering the separate collection channel, e.g. waste collected together with mixed municipal waste);
- Costs for public communication and awareness raising;
- Costs for waste prevention activities;
- Costs for litter prevention and management;
- Costs related to the enforcement and surveillance of the system (including auditing, measures against free riders, etc.).

The level of coverage of these other costs which should be financed by producers remains an open question, and no consensus was reached on this issue.

Taking into account that the cost issue is linked to the level of service delivered to citizens, some stakeholders suggested to set-up **a 'reference cost'** (possibly established by an independent organisation).

- They argued that producers could rely on a reference cost, which would be independent from the actual municipality's choice and which would represent the cost of an optimised performance.
- In addition, it was noted that net costs may change quickly from one year to another, due to price fluctuation of secondary raw materials.
- Furthermore, in cases where LPAs play an organisational role in the collection of some waste flows targeted by existing EPR schemes, some stakeholders argued that municipalities could be paid according to performance, for if their recycling rate increases, they should receive more funds. Such an incentive is applied in some countries already (e.g. Eco-Emballages in France pays local authorities for each tonne of waste sorted).

#### *3.2.3.2 Applying the true cost principle*

EPR systems succeed in organising and financing the separate collection of specific waste streams, but encounter a limited success in promoting eco-design. For instance, in the packaging sector, even long after the introduction of EPR, packaging that is difficult to recycle (or event not recyclable) is still widely used. The reason for this is the possibility for a market or a sector to organise itself as a whole, and to reach general targets for the whole sector without the need for each individual participating company to reach these same targets. The better-than-good performers cover for the weak sector members.

The true cost principle refers to the idea that the fee, which is paid by each producer should reflect as faithfully as possible the end-of-life cost of his own products. Stakeholders were asked to give their opinion on the type of mechanisms that could be implemented to enforce this principle.

A majority of stakeholders agreed on this internalisation principle, which states that costs should reflect recyclability, in order to favour industrial eco-design approaches (a producer that designs recyclable products should be rewarded). These stakeholders, however, also stressed the requirement that any system of this kind should remain simple.

For some stakeholders, the main difficulty in reflecting the 'true' end of life costs in the producer's fee is that the costs (and therefore the respective costs of each product) depend on the collection and treatment infrastructure in place. For example, collection costs are linked to the level of service delivered to citizens, sorting costs are linked to the technology level of the sorting centres, etc.

Few collective EPR schemes have actually developed mechanisms to lower the fees for eco-designed products and ensure that producer fees reflect prevention/reparability/recyclability in order to favour industrial eco-design approaches (a producer that designs recyclable products should be rewarded). This is clearly related to the technical difficulties in defining the corresponding criteria, combined to the necessity to maintain simple calculation rules.

Stakeholders also discussed the modulation systems used to differentiate the fees paid by the producers, according to the product's true end-of-life costs:

- It was explained that, in France, a legal **eco-modulation** obligation (e.g. for packaging and WEEE) had been introduced, accompanied by technical adaptation propositions. However, it seems that the differentiated fees are still far from reflecting real costs and that they merely work as a 'signal' for producers.
- It was also explained that, complementary to a reduced fee applied to producers marketing easy-to-recycle products ('bonus'), increased charges ('malus') can be applied to products containing materials which disrupt the recycling process (e.g. Eco-Emballages in France). However, the results of this 'bonus-malus' system and its impacts on eco-design efforts are not known yet.

### 3.2.4 Towards possible guiding principles

From this analysis, we can infer the following guiding principles:

| | |
|---|---|
| **Statement n°3:** | **Full net cost coverage**<br>The design and implementation of an EPR scheme should at least ensure the coverage of the full net costs related to the separate collection and treatment of the end-of-life products. |
| **Statement n°4:** | **'True cost' principle**<br>The fees paid by a producer to an EPR scheme should reflect, as far as possible, the true end-of-life management costs of his own products. |

These guiding principles are detailed Chapter 4.

## 3.3 Fair competition

### 3.3.1 Issues under consideration

The question of competition in EPR schemes may arise at different levels:

- **Organisation of the system to fulfil the producers' obligations**: Producers are usually allowed to fulfil their obligations individually or collectively. The mutualisation of responsibility creates a 'market' for the organisation of the collective system, on which PROs are the suppliers.
- **Collection and sorting of waste**: Depending on the nature of the producers' responsibility (financial or organisational, see 3.1), the role of producers (or collective schemes) may range from a financer (with limited decision power) to a service requester (the PRO contracts directly with waste operators). In some cases, service providers (the PRO itself takes over waste management activities).
- **Treatment, recovery and secondary raw materials supply**: Similarly to the abovementioned market, the role of producers and collective schemes may range from a 'simple' financer to a supplier.
- **Consulting and expertise**: in order to fulfil their responsibility, producers and collective schemes need to access data and technical information, in particular on the collection, sorting, recovery and secondary raw material supply markets, and thus develop an expertise that can be used to provide consulting services (e.g. to local authorities).

In the past few years, European and national competition and antitrust authorities have issued position papers[50] on this topic. The relevant Commission decisions have led to several court judgments[51]. For example, the Duales System Deutschland (DSD) has raised antitrust concerns, mainly due to institutional arrangements between DSD and associated waste-recovery firms (2003, 2009).

A more recent example is the case of packaging in Austria. In July 2013, the European Commission informed ARA via statement of objections of its preliminary view that ARA was abusing its dominant position on the markets for the management of household and commercial packaging waste and may thereby have prevented competitors from entering or expanding in these markets[52]. An amendment to the Austrian Waste Management Act and a new Packaging

[50] See for example : DG Competition Paper Concerning Issues of Competition in Waste Management Systems (2005), Position of the French Competition Authority on Waste Management Activities Covered by EPR (n° 12-A-17, July 2012)

[51] See for example: ECJ : Case C-385/07 P. General Court : Case T-151/01 & Case T-289/01 22 March 2011, Case T-419/03. Commission : Decision 2001/663 of 15 June 2001 (Eco-Emballages), Decision 2001/463 of 20 April 2001 (DSD), Decision 2001/837 of 17 September 2001 (DSD), Decision 2002/204 of 30 October 2001 (ARN), Decision 2004/208 of 16 October 2003 (ARA, ARGEV, ARO )

[52] European Commission (2013) Antitrust: Commission sends statement of objections to ARA for suspected abuse of dominance on Austrian waste management markets. Press release, Brussels, 18.07.2013.

Ordinance with new and clear boundary conditions for competition in the household sector have been negotiated and will enter into force by 2015.

#### *3.3.1.1 Competition among PROs*

Although the impact of EPR on competition depends on many contextual and design characteristics of the schemes, one central feature is the market structure at the level of Producer Responsibility Organisations, and in particular the number of competing PROs offering compliance services to producers.

The three most frequent configurations are:

- EPR schemes managed by one single PRO,
- EPR schemes managed by several non-competing PROs (e.g. they cover different product categories),
- EPR schemes managed by several competing PROs.

In addition to the number of competing PROs, the possibility and existence of individual compliance schemes must also be considered.

#### *3.3.1.2 Competition among waste management operators*

The question underlining impacts of EPR on the competition in the waste management industry is also analysed, as it is an essential elements to keep waste management costs at a low level.

### 3.3.2 Findings from the case studies

During the preliminary steps of this study (see 2.1), a general overview on the number of existing PROs in every existing EPR scheme (for the six product streams studied) in Europe was provided.

**The situation is heterogeneous among Member States and product categories:**

- Compliance for packaging waste are evenly organised through a single compliance scheme or through several PROs (up to 39 in the UK);
- Compliance for ELVs and oils (when collective schemes exist) is mostly organised through a single PRO. When several PROs exist, their number stays low (no more than two or three schemes);
- Compliance for WEEE and B&A is mostly organised through multiple schemes, but single organisations exist in several countries;
- Among the few graphic paper EPR identified, three are managed with a single organisation, and one has two competing PROs.

**However, the number of existing PROs does not necessarily reflect the PROs market structure**: when several PROs exist, they may have a strictly different scope (e.g. product subcategories, or geographical scope). Therefore, further analysis was carried out on the 36 EPR schemes studied, in order to better characterise the market structure.

### 3.3.2.1 *Competition at the PROs level*

Table 14 below shows, for each of the six product streams considered, the situation regarding competition among PROs.

**Table 14: Existence of competition among Producer Responsibility Organisations**

| Main system | |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| No competition | No collective scheme | DE | DE | | | | |
| | Centralised organisation | FI<br>NL<br>SK<br>SE | FI<br>IT<br>PT | CZ<br>FR<br>NL | FR<br>NL<br>SE | NL<br>CH<br>BE | |
| | Several PROs, not competing | AT | BE[53] | AT[54]<br>BE | | FR | |
| Competition | Several competing PROs *(number of competing PROs)* | | ES (2) | AT (7)[55]<br>DE (10)<br>UK (>30) | FI (2) | AT (4)<br>DK (4) | DK (3)<br>FI (3)<br>FR (3)<br>IE (2)<br>LV (4)<br>SE (2)<br>UK (39) |

As illustrated above, there is no clear tendency per waste stream regarding this feature. What is noted is that:

- WEEE are always managed by several competing PROs, whereas
- ELVs are never managed by several competing PROs.

Centralised systems are frequent, as well as cases with several competing PROs.

Even when there is competition, is it common to have one dominant PRO with a large market share. The table below presents the market share of the dominant PRO, when this information was available.

[53] Different scope: edible and non-edible oil

[54] Household packaging

[55] Industrial packaging

Table 15: Market share of dominant PROs for some EPR schemes

| EPR scheme | | Number of competing PROs | Market share of dominant PRO |
|---|---|---|---|
| | ES | 2 | 90% |
| | AT | 4 | 48% |
| | DK | 4 | 86% |
| | DE | 10 | >50 % |
| | DK | 3 | 89% |
| | FR | 3 | >70% |
| | IE | 2 | 75% |
| | SE | 2 | >75% |

For a great majority of cases, the producers' compliance market structure is therefore centralised or very concentrated. This may give PROs an important power over the different product markets mentioned in the introduction, especially when the PROs have an organisational role.

However, in several cases, this dominant situation may be mitigated through a set of rules (mandatory or voluntarily set by the PROs) such as:

- Selection of waste management operators through open tenders, in compliance with public procurement rules;
- Organised dialogue between stakeholders, in particular between PROs and waste management operators;
- Minimal requirements in terms of the tenders' contract duration or geographical scope;
- Clearing house (see below).

***PRO's status: profit-based or not-for-profit***

In most cases, national legislation requires that PROs are non-profit entities. When it is not required, for-profit PROs are common. Three main types of juridical and decisional structures are found throughout the case studies:

- Public structures in which the regulator has a dominant role;
- A non-profit institution that is owned by the adhering producers. Its legal form can be an anonymous society in which the producers are shareholders, or a professional association. This second category hosts the majority of PROs;

- A private PRO, owned by investors looking for profit. In particular, some waste management operators claim that they should be enabled to act as PROs.

**Table 16: Juridical status of PROs throughout the case studies**

| Main system |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| ***Not-for-profit*** | AT<br>BE<br>DK<br>FR<br>NL<br>CH | AT<br>NL<br>SK | FR<br>SE | BE<br>PT<br>ES | BE<br>CZ<br>NL<br>FR | DK<br>FR<br>IE |
| ***For-profit*** | AT[56]<br>DK | | FI | FI<br>IT | AT<br>DE<br>UK | DK<br>FI<br>LV<br>SE<br>UK |

As outlined in the table above, both models exist for all product streams. This distinction does not entail any visible incidence on technical performance or on costs.

The main argument in this debate is that PROs execute a mission linked to the general interest and therefore should not make profit out of this activity. The opposite position argues that the profit goal entails a more optimal economic performance. Nothing could prevent not-for-profit PROs to have huge administration expenses or high salaries for their agents. Therefore, the profit or non-profit status of PROs is arguably a sovereign political choice. It is suggested to rather focus here on the conditions needed to ensure a fair competition among such entities, be they profit oriented or not.

Returning to the competition issue, **there is no evidence that a centralised organisation is preferable to the introduction of competition among PROs and vice-versa**. In particular, the observation of performance and cost effectiveness indicators (see section 2.3.2) does not lead to any clear conclusion.

First of all, it must be stressed that cases of real competition are quite rare. There is almost always a largely dominant PRO, which demonstrates very few evidence on the effects of competition. In addition, the level of economic data that can be obtained is insufficient to allow for a clear comparison (see section 2.4).

This being said, the comparison of results for several product categories does not lead to clear conclusions:

- For batteries, except for Belgium and Switzerland, the costs per capita and performances of the four remaining schemes are close (two of them having introduced competition among PROs);

[56] For batteries, in Austria, not-for-profit PROs are competing with one for-profit PRO.

- For oils, the only case of competition amongst PROs is in Spain. Its costs are within the average observed for other schemes (where no competition exists);
- For packaging, (e.g. household) Austria and Belgium show respectively the highest and lowest costs, although they both have a centralised organisation;
- For other streams, comparison is not relevant or not possible (insufficient data or no competition cases).

**ZOOM N° 6: COMPETITION AMONG PRO – THE GERMAN PACKAGING CASE STUDY**

The case of packaging EPR in Germany is the one which may provide the most teachings on the advantages and drawbacks of competition among PROs. This may be true because, throughout its history, the system has experienced two situations: a centralised organisation (DSD) until 2003, and the introduction of several competing PROs since 2003 (there are 10 competing PROs today, DSD representing around 50% of the market).

One fact is that the costs of the system have significantly dropped since 2003. However, the analysis of this costs reduction leads to several contradictory interpretations:

- The reduction of costs is presented by some stakeholders as the result of competition at the level of compliance schemes, as this competition has triggered the search for efficiency (producers may choose another PRO if he proposes to help him comply with lower fees). Additionally, flexibility can be reintroduced at the producer level (they are now offered choice between different compliance schemes) and at the level of waste management operators.
- Others highlight that the cost reduction is the result of competition eventually introduced at the waste management operations level. Following important financial difficulties in 1993, DSD had to sign 10-year long contracts with waste management operators, and therefore only started to launch calls for tenders for packaging waste collection and sorting in 2003.
- This illustrates that, even within a very specific case, which theoretically should allow for a factual comparison based on concrete evidence, the complexity of the situation and the interaction of several possible explanatory factors hinder drawing clear and definitive conclusions.

### *3.3.2.2 Coordination at the PROs level*

In almost all cases, the existence of competition among Producer Responsibility Organisations entails a need for coordination by a central organisation which can also be called 'clearinghouse'. The status and roles of such a structure, when it exists, may vary (see annex 5.5, PROs surveillance):

- The coordination may be performed by either a national public body;
- or this task may be assigned to producers (e.g. through the creation of a separate body, authorised by public authorities, with a shared governance between existing PROs).

The tasks of the **clearinghouse** may include:

- Centralising and aggregating data reported and inspection of data quality and completeness ('Register' role);
- Verifying compliance (free riders identification), in link with public authorities in charge of enforcement;
- Ensuring that all competing PROs work in a level-playing field by verifying that all requirements are met;
- Calculating market shares and ensuring a fair determination of the PRO's individual objectives.

Furthermore and when necessary, cost sharing related to certain operations will be organised (e.g. reimbursement of local authorities, national communication campaigns), through common agreements with public local authorities, or through common calls for tenders. This structure may also manage common communication and R&D activities. The clearinghouse can also manage a common communication fund fed by each PRO's communication budgets.

Common communication and awareness raising campaigns may even extend beyond the sole scope of a specific product stream. For example, there is an obvious lack of harmonisation between WEEE and batteries and accumulators PROs. No real synergies exist between them. It could be advisable to initiate a centralised approach for both streams, at least for communication and awareness raising campaigns.

#### *3.3.2.3 EPR and competition in the waste management industry*

EPR schemes potentially introduce competition issues in the waste management industry. **When producer responsibility is organisational**, they become service requesters since they directly contract with waste management companies for the collection and treatment instead of municipalities and professional waste generators who are historically known as those responsible for waste management. When collective schemes are set up, this can lead to a concentration of the demand for waste management operations, potentially giving the PRO enough negotiation power to disrupt the economic and competition balance in the waste management sector.

However, this risk seems to have been mitigated, and many collective schemes select waste management operators through **public call for tenders** (see Annex 5.5).

Another issue arises **when PROs themselves provide waste management services** (or when waste management industries act as PROs). This situation seems to be rare among EPR schemes in the EU. In a majority of cases, waste management operators are not allowed to act as PROs and vice-versa (cf. batteries, oils, WEEE). Some Member States have even legally limited the role of PROs. For ELVs, **Austria** is an exception: six shredders partly own one of the two PROs, together with car producers. For packaging, it is not unusual that waste management operators act as PROs.

Among waste management operators, a specific role is sometimes preserved to social economy organisations. In the WEEE sector in France, for instance, the non-profit organisation *Envie* was the first actor to actually promote and perform WEEE dismantling and recovery. As they employ persons who are in precarious social situation, and pursue a sustainable development goal which

goes beyond economic profit, it is difficult for them to compete with conventional private companies. The same situation is valid for other streams (textiles, furniture, etc.).

### 3.3.3 Taking stakeholders' expertise into account

The issue of the producer compliance market structure and the benefits and disadvantages of PROs competition versus centralisation is one that raises many debates and one that sparks many diverging or contradictory opinions. The arguments below were raised (note that some of these are not shared amongst all stakeholders).

**Arguments in favour of a centralised organisation for PROs:**

- Possibility of economies of scale (e.g. administrative burden, communication, data reporting, surveillance is centralised);
- Simplicity of the system (e.g. for producers who have a single organisation to join to fulfil their responsibilities, and for municipalities who have a single partner to organise waste collection, no need for additional clearing house level);
- Verification of compliance (in particular the monitoring of progress towards targets and control of free-riders) is simplified;
- Helps ensuring the quality of waste management and avoids 'cherry picking' (in order to lower costs, competing PROs would tend to cover geographical areas or waste types which generate less costs);
- Higher transparency and surveillance levels.

**Arguments in favour of competition amongst PROs:**

- Naturally avoids risks related to a monopolistic situation (no supply monopoly on producer's compliance market). These risks can be mitigated through specific rules to ensure fair competition in the case of a single organisation;
- Old single PROs tend to accumulate a lot of market power, without a counterpart;
- Maintains flexibility on the market (by allowing several different approaches to reach the targets, and by diversifying the demand for waste management services);
- Naturally triggers the search for cost efficiency, and avoids suboptimal functioning.

In conclusion, all stakeholders agreed that a "one-size-fits-all" solution is not convenient and that the most important aspect is to ensure:

- Freedom to choose the most adequate configuration;
- A level-playing field within a legal framework ensuring fair competition along with efficient enforcement and control;
- Clear rules and standards along the value chain;
- No additional complexity at the operating level (e.g. avoid multiple infrastructure, keep a single service and point of contact for citizens, etc.).

In addition, most stakeholders agreed that a clearinghouse is necessary in case there are several PROs, in order to acknowledge market shares, reach agreement with public authorities and communicate with population. To that respect, some stakeholders highlighted that citizens need a stable system: if a company goes bankrupt, it cannot disrupt the whole EPR system.

Concerning the PRO's governance, no consensus emerged on the question of the PROs' profit or not-for-profit status. Some stakeholders argued that PROs should only be controlled by the obliged industry.

Although some stakeholders argued that PROs and waste management companies should communicate, but remain separate organisations, no clear consensus emerged on whether waste management operators could act as PROs.

Beyond their status issue, all stakeholders agreed on the idea that a PRO's authorisation should be delivered by the public authorities, defining the PRO's duties and targets.

Most stakeholders agreed that there is the need for a level-playing field (actors must compete under the same conditions) ensured by a clear legal framework:

- Specify the definitions of household / commercial and industrial waste;
- Equal obligations among PROs, and particularly minimal geographical coverage so as to avoid cherry-picking;
- Minimal operating license, in order to prove it is a credible system;
- Minimum requirements on consumer information and auditing;
- Strict enforcement by authorities (parties must be audited).

Regarding competition at the organisational level, the following points were highlighted by stakeholders:

- Make sure that the operational markets are transparent in antitrust terms;
- Enable PROs to contract with NGOs and social institutions;
- Provide a long-term vision, so that operational actors acquire a greater visibility to support long-term investment in installations and innovation.

### 3.3.4 Towards possible guiding principles

In order to ensure fair competition within EPR schemes, one main recommendation emerges (which is further developed in Chapter 4):

| | |
|---|---|
| **Statement n°5:** | **A level-playing field to ensure fair-competition**<br>A clear and stable framework is necessary in order to ensure fair competition with sufficient surveillance and equal rules for all, supported by enforcement measures (including sanctions) and transparency. |

## 3.4 Transparency and surveillance

### 3.4.1 Issues under consideration for transparency

#### *3.4.1.1 Transparency on techno-economic criteria on costs and performances*

Transparency is an important feature, namely for regulatory and accountability purposes. In addition, clearer data would allow policy makers to assess the costs and the benefits of EPR schemes in place and could be used at regular intervals to review and adjust the schemes from a strategic perspective. Furthermore, it is useful to allow for international benchmarking and replication of good practices.

With these objectives in mind, precise requirements could be stated in terms of transparency, regarding both environmental performances, financial and technical aspects. The lack of transparency and homogenisation regarding EPR schemes is a recurrent criticism identified in the study.

Transparency on costs also allows producers to make better-informed decisions when choosing a PRO in cases where several collective schemes exist.

Transparency is also a citizen right, who contribute to the waste management costs both as taxpayers (through the municipal taxes or tariffs for waste management services) for and as consumers (through the fees integrated in the selling price of the products), to get better information about the efficiency of the systems they pay for.

#### *3.4.1.2 Harmonised reporting modalities*

Transparency calls for clear reporting modalities as situations vary to a high extent from one country to another. In most cases, the lack of consistent data originates from different definitions, different stream perimeters, and different calculation modes. Precise reporting modalities for each stream should therefore be clearly stated and made compulsory to all stakeholders in order to rigorously monitor target achievement and compare performances from different countries.

### 3.4.2 Issues under consideration for surveillance

Surveillance specifications generally exist for each stream in almost all Member States. The main questions arise around how to make sure that surveillance is effectively enforced, and determine who is in charge of this task.

#### *3.4.2.1 Surveillance of free riding*

Free riding is a common problem in the implementation of EPR. Here it refers to producers who do not finance the end-of-life management costs, although they put a share of the corresponding

products on the market. While reducing free riding to zero might be complicated (as perimeters change, new products appear, etc.), their number should remain very low. Surveillance modalities must therefore be introduced in order to quickly identify any producer, importer or reseller who does not fulfil its obligations.

Another form of free riding is non-compliance. This refers to producers who contribute to the PRO but do not fulfil all obligations that they have agreed to respect or provide erroneous data about quantities put on the market.

#### *3.4.2.2 Surveillance of collection and treatment operations*

In addition to quantitative targets, a thorough monitoring of the quality of the recycling process is needed in order to avoid improper recovery processes and illegal exporting practices towards non-EU countries.

#### *3.4.2.3 Surveillance of PROs*

At the EU level, there is no clear definition of what a PRO should be. PROs potentially exert three main functions:

1. Aggregating and managing data for monitoring;
2. Financing the collection and treatment of the targeted solid waste;
3. Organising operationally these activities.

In 2008, the French PROs for packaging Eco-Emballages admitted having placed EUR 55 million (i.e. 20% of its global budget) in fiscal paradises, hence putting a non-negligible part of producers contributions at risk. Following this, the French law introduced a State censor for all PROs; the censor particularly has access to all information regarding the PRO's finances.

#### *3.4.2.4 Sanctions*

As a matter of fact, audits, penalties and sanctions already exist, in law, to regulate PROs' activities. However, it seems that they are seldom applied. Main PROs have acquired a great market power and often lack clear accountability rules. Therefore, the standing issue is the opportunity to reinforce the control by the public authorities and ensure an equal treatment and fair level playing field.

### 3.4.3 Findings from the case studies

#### *3.4.3.1 Transparency*

Assessing the well-functioning of EPR schemes in the EU is made very difficult due to the lack of transparency and availability of reliable data. Most of the time, scope, definitions, and calculation methods differ from one Member State to another. Such a quantitative assessment is however useful, in order to ground any guiding principle on thorough facts.

Two main performance indicators were analysed in order to establish a quantitative benchmark of EPR schemes:

- Recycling rate (quantities of waste recycled / quantities of waste arising);
- Costs (given the lack of availability of costs data, these were approximated by the fees paid to PROs).

In addition to these two indicators, other "secondary" data were compiled when available, in order to allow a more precise comparison:

- Additional product/waste flow data,
- Quantities of products placed on the market,
- Collected quantities,
- Recovered quantities,
- Operational costs and revenues, when available : split-up between collection, sorting, material reselling,
- Other costs and revenues for Producer Responsibility Organisations, when available: Communication, administrative, surveillance, producer fees, coverage of operational costs.

Taking the example of the packaging stream, below are listed the main difficulties when comparing different EPR schemes:

- **Scope**: Whereas household packaging is covered by an EPR scheme in all countries studies, this is not the case for industrial and commercial and industrial packaging (the DSD system in Germany and Eco-Emballages in France only cover household packaging). In countries where commercial and industrial (C&I) packaging is covered, it might be through an independent scheme (e.g. Val-i-Pac in Belgium), which allows a clear distinction between household and C&I performances, or through a common scheme (e.g. Nedvang in the Netherlands). In this case, it was not always possible to clearly distinguish between household and C&I packaging performances. Moreover, the respective definitions of household and C&I packaging are not exactly the same in different countries.
- **Data availability and confidentiality**: When several PROs are in competition (e.g. Germany, Austria, or the United Kingdom), it is much more difficult (even impossible) to obtain data on costs and revenues, and, in some cases, extrapolations were used to fill in the gaps.
- In addition, **methods for data collection and reporting** differ from one country to another. There is an uncertainty associated with all data provided (for example, PROs usually report recycling rates on the basis of the quantities their members put on the market, e.g. Fost Plus and Eco-emballages annual reports – whereas official reporting to the EC takes into account an estimation of the whole market, including free-riding quantities).

### 3.4.3.2 *Surveillance of free riding*

**Table 17: Surveillance modalities on free riders throughout the 36 case studies**

| Average situations |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| **Estimated free-riders** | minimal | minimal | minimal | minimal | From 2% to 25% | No estimation |
| **Identification of free-riders** | PROs and national authorities | PROs identify<br><br>National authority enforces | *No specific measures identified* | PROs identify<br><br>National authority enforces | National authorities, with support from PROs | Carried out by the national authorities, with support from the clearinghouse and PROs |
| **Penalties against free-riders** | Financial or criminal penalties | Financial penalties | Financial penalties | Financial penalties | Financial penalties | Financial penalties or prosecution |

In the case of packaging schemes, the free riders phenomenon is frequently an important issue. Audits are performed. Irregularities are sanctioned with financial penalties.

For other streams, the estimation of free riders is seldom available, but generally estimated to be low, limited to a few 'niche' importers. Free riding is not always an issue: for ELVs, for instance, the easy-to-identify car brands and the high market value of ELVs reduce the importance of this phenomenon.

Three main sources of free riding practices were identified throughout the case studies:

- Excessive fees for small producers, which disincentive them to contract with any PRO;
- Insufficiently precise definition of the scope, particularly regarding new products;
- Trans-frontier and online trading as resellers, who are subject to EPR obligations, are not always aware of it and/or do not have the take-back infrastructure (i.e. the case of EEE).

PROs generally contribute to the identification of free riders, but only national authorities detain the power to have them respect the law. Sanctions are usually in place: Non-compliance may lead either to criminal liability or to financial penalties, depending on the cases. However, they seem to be seldom applied.

### ZOOM N° 7: INTERESTING CASES REGARDING FREE RIDING AND NON-COMPLIANCE[57]

The Swiss system has gaps in online trading. When batteries are bought online, the disposal fee is not paid, which can put a strain on the entire system. Moreover, consumers are not well aware of take-back deposits.

Until 2011, only portable batteries of less than 5kg were subject to fees. Since 2012, the rule related to these fees has been extended to all batteries (i.e. portable but also automotive and industrial) without limitation of weight. The suppression of the 5kg threshold allows for all producers of batteries to be subject to the EPR scheme' fees and, thereby, made it easier to track possible free riders inside this specific category.

In Austria, a producer that does not participate in a PRO system (as requested) would get a fine of double the amount he would have to pay to a PRO.

In France, the estimated high level of free riders is attributed to a recent extension of the scope, which led to a strong increase in non-compliant activities. But such non-compliant practices were not due to a lack of willingness and rather to a juridical ambiguity.

The primary source of revenue for the Spanish main PRO is a monthly fee of EUR 0.06 per kg of traded oil by actors placing oil on the domestic market. A unique membership fee of EUR 5,000 is also charged at the time of signing the membership contract with SIGAUS. However, in order to avoid deterring registration of small producers or resellers, a lower amount is expected from the company (EUR 2,000) if the amount of industrial oils it placed on the market is less than 2,000 tonnes per year).

In Austria, in order to ensure compliance with the EPR, collection and treatment obligations for product streams, a two-tiered audit system was put in place:
1. Governmental agency audits individual producers and/or PROs;
2. Collective schemes or individual producers audit the collection and treatment operators with which they contract. Collective schemes can also audit their members.

Audits undertaken both by the government and by PROs allow for the identification of problems and ensures surveillance of all actors in the system.

In France, a large number of new products (e.g. electronic cigarettes) do not comply with their EPR obligations. The corresponding producers do not adhere to PROs and take advantage of the difficulty for the PROs to identify them.

[57]This zoom identifies both identified causes for free-riding, and some initiatives implemented to tackle it

### 3.4.3.3 *Surveillance of collection and treatment operations*

In general, treatment operators have to report their data (quantities and costs) on a regular basis (monthly) either to a PRO or directly to national authorities. Specific reporting obligations, however, are not systematically applied (especially for WEEE, graphic paper and packaging). Besides, there are frequent traceability problems, particularly at the treatment stage.

In general terms, the information (volumes and transactions) declared by collection and treatment operators (and in some cases by local authorities also) is either verified by the national authority or by PROs, through random audits on a regular basis.

In many of the ELV cases studied (Austria, Germany, Finland, Netherlands), a difficulty exists for the authorised treatment operators to get a significant portion of the ELV arisings. Unauthorised operators usually have lower costs than authorised ones, due to less permits and illegal treatment practices. Consequently, in several cases there are '***ghost vehicles***' in the national registry. This phenomenon is not only linked to temporary de-registrations by treatment operators outside the official PRO network, but also to illegal dismantling and/or export to countries outside the EU.

In Switzerland, for batteries, verifications on declarations and coherence in reporting are undertaken every year by the Federal Office for the Environment together with the PRO. The only treatment operator (Batrec) is subject to a very strict national legislation concerning the respect of the environment during the recycling process. Toxic products must be completely recycled and may not let in possible residues. Swiss national authorities undertake regular audits to make sure Batrec is fulfilling its legal obligation.

### 3.4.3.4 *Surveillance of PROs*

The surveillance of PROs issues may take three different aspects: ex-ante regulation on PROs (i.e. authorisation procedures), governance of PROs and ex-post monitoring.

**Ex-ante regulation on PROs**

In some MS, authorisation procedures for PROs are defined by law and include precise Terms of Reference.

**Box 7: Accreditation Committees in France**

- Accreditation procedures for PROs are defined by law in France and conducted through an ad-hoc entity called the CCA ('*Commission Consultative d'Agrément*').
- Accreditation Committees define the Terms of Reference to be respected by PROs, including: conditions to get the accreditation, financial rules, relationships with producers and retailers, relationships with other PROs, relationships with collection and treatment operators, with governmental agencies, respect of waste hierarchy, precise targets in terms of territorial coverage, preparation for reuse, recycling and recovery, the juridical framework, a frequent reporting to make anticipate any 'collection crisis' which could be due to insufficient producers obligations compared to actual collection needs.
- Administrative advisory commissions are set up by the Ministry of Ecology to contribute to

the governance of the system. The commission delivers public opinions on relevant issues to the national authorities in charge of the environment. Its scope is comprised of monitoring objectives on collection and recycling for a specific product stream. This type of commission gathers all involved parties (compliance scheme, local authorities, producers, associations, consumers, ONG, recyclers).

- This commission aims to guarantee the proper functioning of the sector, throughout dialogue and discussion and reach of consensus. The CCA is an advisory body and it is the exclusive responsibility of the ministry to attribute accreditation to possible collective schemes.
- In addition, to promote further dialogue between the different actors involved in the system, packaging PROs put in place two operational committees: a consultation joint committee (*'comité de concertation'*) between PROs and local authorities, as well as an associative joint (*'comité associatif'*) committee.

**Box 8: PRO permitting in Belgium**

In the Belgian transposition of the European directive on packaging, **PROs are required to be non-profit organisations and focus on one statutory goal (take back).** Permits for the PROs also include provisions on data gathering, data quality, recycling effectiveness, transparency, controllability, the performance of auto-control, the role of independent auditors etc.

The Intergional Packaging Commission gives out permits to the PROs, undertakes inspections, and aggregates data on the packaging system to report to the Belgian government.

Consultation with stakeholders is set up through the 'packaging platform', a group of industry federations coordinated by the FEB, Federation of Enterprises in Belgium. Because this body does not cover all industry federations (e.g. not the smaller ones), IPC communicates directly to all known federations as well.

Among the clauses set to be respected, the equity in the PRO's relations to its members deserves special attention. Large professional waste producers are sometimes able and willing to take over part of the organisation of the waste streams. This entails that there is far more pressure on PROs to be efficient (or to offer more attractive terms) if they work for those customers than if they are working for small customers.

**Governance of PROs**

In most cases, only producers compose the PRO's board. In some cases, government officials are also allowed to participate, often times with a mere observatory status (no voting power).

**ZOOM N° 8: INTERESTING INITIATIVES REGARDING GOVERNANCE OF PROs**

**In Belgium**, in addition to producers, other actors are allowed to compose the PROs' board, although they cannot hold voting power. These actors include: association of retailers, association of automotive distributers, regional authorities.
In France, all decision-making processes are conducted by a consultative commission composed of representatives of the concerned sector such as: Ministries, Environmental Agency ADEME, local authorities, producers, treatment operators, and environmental protection and consumer associations.

**In Slovakia**, the government-run PROs' board is composed by a wide range of actors, including representatives from government, industry and NGOs.

**Ex-post monitoring of PROs**

**Table 18: Monitoring modalities regarding PROs throughout the 36 case studies**

| Main system |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| ***Who is in charge of monitoring PROs?*** | National or regional authorities The clearinghouse | National authorities | | National or regional authorities | National authorities | Clearinghouse or national authorities |
| ***How? What is monitored?*** | Finances & quantities | Audits on finances and quantities | Legality of competition among PROs | Finances, quantities, environmental standards | Authorisation and regular audits of data provided | Audits on finances and quantities |
| ***How is public surveillance effectively enforced?*** | Retroactive fines | Penalties | At local authorities level | External auditors. Licence revocation | *N/A* | *N/A* |

Regarding reporting modalities, in general terms:

- Producers are required to keep records of the amount of products manufactured, imported, exported and re-exported. In some cases, an electronic reporting system is used. At any rate, they have to deliver a public annual report;
- The PRO aggregates data provided by producers and conveys it to national authorities. If organisations opt for individual responsibility, they report directly on their actions to national authority, which oversees the system;
- The PRO then report to the national authorities. In general, the PROs' annual reports include either general or detailed information on costs. Schemes which are not led by a PRO (i.e. Finland, Germany) may be less transparent regarding aggregated data (quantities and costs).

The national authority may act as a clearinghouse, assuming data collection, verification and publication, free riders monitoring, accreditation of treatment operators, assessment of market share, coordination of supplementary charges paid to the municipalities, coordination of co-tendering, etc. National clearinghouses were identified:

- For WEEE in all Member States,
- For packaging in Austria and in the UK.

Surveillance modalities vary significantly. In some cases, surveillance of PROs is rigorously executed, while in other cases, public information is seriously lacking. It is not always clear who is in charge of monitoring PROs. When specified, national authorities are usually responsible.

In general, public authorities lack of enforcement means that licence revocation is not very realistic, especially when there is only one PRO. In many cases, information on penalties is vague; while fines or potential actions are often listed in legislation. It is difficult to assess to what extent they are applied. Furthermore, enforcement appears to be at the discretion of the national authorities.

**ZOOM N° 9: INTERESTING INITIATIVES REGARDING SURVEILLANCE OF PROs**

In the Austrian case, if the systems do not fulfil their obligations of free take-back, the Ministry of Environment can organise the collection and recovery of the ELVs and charge the costs to the responsible system.

In all countries, PROs and the clearinghouse must be approved by the public authorities (for a x-year period). Requirements for receiving an authorisation as a PRO include the ability to fulfil certain tasks, such as the collection and treatment of WEEE, as well as sufficient capital, and reserves aligned with the number of producers which are members. The clearinghouse defines the market shares and collection obligations of the schemes. It verifies compliance by carrying out audits on the information provided by PROs and individual compliers.

In Sweden, PRO members use an insurance system in order to ensure the financial safety of the EPR scheme. Producers that adhere to a PRO must pay an annual fee, an insurance premium based on the number of products sold and on their recycling cost that will be used to cover the overall system costs.

### 3.4.4 Taking stakeholders' expertise into account

Transparency on costs for PROs is an issue that motivates different positions from stakeholders.

**Arguments in favour of transparency on costs and revenues:**

- Transparency, which entails better performance, should be as widely applied as possible. Performance is also about cost-efficiency;
- Citizens should have a clear vision of what is respectively covered by producers' fees/ local taxes;

- In a centralised system, or when a dominant PRO covers more than a defined threshold of materials placed on the market (e.g. above 50% market share), it should make its costs transparent;
- In a competitive system, it would enhance competition if the different systems were obliged to publish their economic data.

**Arguments in favour of a certain degree of confidentiality on costs and revenues:**

- PROs should primarily provide transparency to their own members;
- The costs engaged at the level of municipalities are the only ones that need to be made public;
- What should be ensured, is that fees are used properly, which does not necessarily imply that the financial results would be made public, but that some control is ensured;
- In a competitive system, a balance between the benefits and the potential risks of transparency should be kept, as too much transparency may disrupt competition, e.g. due to the dispersion of know-how or a potential facilitation of anti-competitive coordination between competitors.

No matter the extent of the transparency principle, the need for harmonised reporting modalities is widely acknowledged among stakeholders.

The need for a thorough surveillance is also widely acknowledged although some stakeholders stress the fact that subsequent administrative costs should be fairly distributed among actors.

## 3.4.5 Concluding remarks

### *3.4.5.1 Transparency*

There is a need of **a high level of transparency:**

- On costs, on benefits, and on flows;
- For all stakeholders: notably public authorities and PROs, but also the producers themselves who want to keep a degree of control on PROs.

The present study is additional proof (if needed) that EPR data at the EU level imperatively needs harmonisation. Currently, a considerable part of the data is not available and, when published, can be regarded as questionable. Better data is needed for all stakeholders and for future strategic political decision-making. It is impossible to check whether targets are actually reached without publication of proper data.

Optimal transparency can only be reached through harmonisation of calculation rules and reporting procedures. The reporting format for all PROs (independently of stream or country) should be homogenised in order to get reliable and comparable data:

- Ensure data availability, especially when several PROs are in competition;

- Ensure materials' traceability;
- Precisely define the following parameters:
  - Scope: Household/commercial and industrial waste, products covered, separately collected and residual fraction, etc.;
  - Targets (i.e. definition of 'recycling' and 'recovery');
  - Qualitative aspects (not only quantities reached, but also degrees of quality achieved);
  - Reporting obligations (frequency);
  - Statistics.
- Define precisely data collection and reporting methods, e.g.:
  - Quantities put on the market and arising waste;
  - Recycling rates;
  - Costs and the link with producers fees.

#### *3.4.5.2 Surveillance of free riders*

Despite the fact that the responsibility for surveillance of free riders can be shared between PROs and public authorities, only MS can ultimately enforce sanctions. PROs can support MS by identifying free riders but mostly do not have enforcement capacities. Harmonised mechanisms for enforcing EPR compliance to prevent free riders within every stream should be established.

In some MS, national governments do not assume this role. It may be due to a lack of means, for more focus and resources are needed at the national level. In different cases, the creation of an ad-hoc independent authority for surveillance and enforcement may be appropriate. It could be financed by a tax on PROs: surveillance efforts could at least be partially financed by those who place products on the market.

Possible options to remedy these problems are:

- For each stream, a common threshold (e.g. minimum quantities put on the market) for producers to contribute to EPR schemes could be defined at the EU level;
- Counter-check mechanisms, so that surveillance does not rely only on one single actor;
- Involving customs authorities and harmonising shipment regulation (particularly for ELVs and WEEE).

#### *3.4.5.3 Surveillance of collection and treatment operations*

Although collected quantities declared seem correctly verified, a lack of traceability appears at the treatment stage, in particular for some products (i.e. ELVs and batteries):

Surveillance modalities should therefore be reinforced concerning treatment operators, concerning both the quantities treated (in order to lower illegal exporting practices) and the environmental quality of the dismantling and recycling process. Random audits should be frequently conducted and communication aimed at end users should be reinforced in order to

terminate unauthorised take-back points. Gradual processes could be fine-tuned in order to lead a greater number of unauthorised operators to improve their process and get the license.

#### *3.4.5.4 Surveillance of PROs*

There is a need for a clear guidance on what a PRO is expected to do and achieve. All stakeholders wish to be able to operate in a level playing field:

- Defined by the European Commission and;
- Implemented, enforced and monitored by the Member States.

A consolidated public surveillance over PROs is needed. It may be provided through:

- **Control and monitoring:**
  - A clear authorisation process (recognition procedure to act as a PRO) must be defined, and this authorisation should be renewed on a regular basis;
  - At a minimum, collective PROs need to be monitored in order to ensure that they are not engaging in price gouging, entry-deterrence or any other anti-competitive activity;
  - Control can be enacted by an EPR operational orientation board or a dedicated regulation system. The administrative organisation of the control should remain as simple as possible.
- **Frequent and random audits:**
  - Periodical (for instance every five years) in-depth assessment of PROs should be conducted by public authorities, conditioning public agreement's renewal;
  - It should ensure that PROs have the required resources and expertise to fulfil their obligations in the long run.
- **Enforcement mechanisms:**
  - Enforcement mechanisms should be introduced or existing ones should be reinforced, enabling effective and strengthened public oversight to ensure that national regulation and EU guidelines are fully enforced down to the final recycling or end-processing step.
  - PROs should be subject to sanctions if not respecting the regulation or the authorisation conditions.

### 3.4.6 Towards possible guiding principles

In order to improve transparency and surveillance throughout the European extended producer responsibility schemes, three main recommendations emerge (which are further developed in Chapter 4):

| | |
|---|---|
| **Statement n°6:** | **Transparency**<br>Transparency is required on performance and costs. |
| **Statement n°7:** | **Data harmonisation**<br>Harmonisation of key definitions and reporting procedures is needed at the European level. |
| **Statement n°8:** | **Monitoring and surveillance**<br>Member States and obliged industry sectors are co-responsible for enforcement and should ensure that adequate means for monitoring and surveillance are in place. |

# Chapter 4. Guiding principles and recommendations

*This chapter presents and develops the guiding principles that were inferred from the case studies analysis and the stakeholder consultation.*

*The above statements were submitted to consultation in November 2013 and December 2013, and feedback was taken into account in the development of the associated policy options.*

In addition to specificities relating to every product category (and waste stream), several commercial, organisational, historical and cultural aspects influence the way EPR schemes are designed and implemented. On many aspects of the design and implementation of EPR schemes, some flexibility should prevail.

However, in order to achieve maximum results, to improve the cost effectiveness of existing and forthcoming EPR schemes, and to ensure a European level-playing field, a certain level of clarification and harmonisation seems to be desirable.

From the analysis of the main EPR design and implementation issues presented in Chapter 3, as well as the feedback obtained during the stakeholder consultation, 8 recommendations are proposed; they are presented in the form of short statements and further detailed in the following chapter.

## 4.1 Statement n°1: Clarification of the definition and objectives of EPR

### 4.1.1 Guiding principle

**The definition and objectives of EPR should be clarified**

The concept of EPR is currently defined in general terms in European legislation (cf. art. 8 of the Waste Framework Directive 2008/98). Differences in EPR implementation and difficulties for companies participating in EPR systems in different EU Member States arise from the varied interpretation in terms of scope, objectives and exact definition.

The concept of EPR, along with other key definitions (see Statement n°9), needs to be clarified. As a basis for its definition, the fundamental goals of EPR need to be stated. For example:

- EPR aims at internalising environmental externalities (in this case, the internalisation of end-of-life management costs according to high environmental standards) and should provide:
  - An incentive for producers to take into account environmental considerations throughout a products' life, from the design phase to the post-consumption phase;
  - An incentive for designing longer-lasting products, containing less hazardous substances, which are easier to treat once they have become waste.

- EPR is a **financial and/or operational instrument**, which aims at fostering the operational implementation of sustainable products and waste management schemes in line with the waste hierarchy and the EU quantitative recycling and recovery targets, prioritising waste management in the following order:
    i. prevention,
    ii. preparing for re-use,
    iii. recycling,
    iv. other recovery
    v. and disposal.
- Within the framework of the EU Raw Materials Initiative[58], EPR is a key tool to facilitate the use available resources more efficiently, to keep secondary raw materials within the EU boundaries, and to provide improved access to strategic materials.
- As such, EPR also paves the way for the development of a more resource-efficient and circular economy, sustaining a national and European recycling society, as recalled by the European Resource Efficiency Platform[59] in its recommendations adopted on 31st March 2014:

  "*Boosting Extended Producer Responsibility: Extended Producer Responsibility (EPR) establishes incentives for producers to move to better waste management solutions beyond the end-of-life of products, pushes product design, remanufacturing and recycling, and enables the take up of resource efficient business models. We believe that EPR schemes can be made more efficient and effective if they are transparent and operate according to certain minimum principles across the Single Market. We call on the EU to use the opportunity of the Waste Policy Review to develop this, with a view to ensuring a fair business environment and a level playing-field, with special attention to SMEs. This implies a better definition of producer responsibility, better distribution of costs and benefits over the value chain, better targeted monitoring and enforcement by Member States, improved data collection, utilisation and reporting, as well as increased dialogue between stakeholders along the value chain. The need for additional waste streams to be covered by EPR should be assessed, taking into account the costs and benefits of new schemes.*"[60]

[58] https://ec.europa.eu/eip/raw-materials/en

[59] The Platform's members include European Commissioner Potočnik, Vice-President Tajani, Commissioners Hedegaard, Šemeta and Rehn, members of the European Parliament (MEPs), ministers, business CEOs, academia and representatives of NGOs and civil society.

[60] http://ec.europa.eu/environment/resource_efficiency/documents/erep_manifesto_and_policy_recommendations_31-03-2014.pdf

### 4.1.2 Policy options

The clarification of EPR definition and scope should be done through **European legislation,** to ensure a harmonised approach and shared objectives.

## 4.2 Statement n°2: The shared responsibilities principle

### 4.2.1 Guiding principle

**The responsibilities and roles of each actor should be clearly defined throughout the whole product life cycle**

Even if EPR focuses on the responsibility of the producers/importers[61] for products which are placed on the market, many other actors play a role in reaching the objectives of the scheme. This includes: consumers (individuals or companies, as the final users of a product, and as the actors who are responsible for discarding products through the right channel – e.g. by separate collection); local authorities (responsible for municipal waste management, and more generally for the environmental quality of their territory); waste management companies (as waste management operators investing in infrastructure and R&D in order to improve collection, sorting and recycling processes); social economy actors; retailers, etc.

The achievement of a good national level EPR performance is the result of each stakeholder's contribution towards a common goal. Therefore, any national EPR scheme should define the respective responsibilities (organisational and/or financial) of each stakeholder (to the extent that it plays an important role in the system). There is no 'one size fits all' solution when allocating the responsibilities. Nonetheless, precise roles should be defined at the national scale, in accordance with the respective financial and/or operational obligations. The individual responsibilities of all actors should be clearly defined along the following lines:

- **Producers/distributors** (obligated industry, at the heart of the EPR principle): Responsible for the products they put on the market, for executing take-back or financial obligations, for low-environmental-impact treatment of their waste products and for meeting recovery and recycling targets;
- **Producer Responsibility Organisations**: Act collectively on member producers' behalf, to collectively implement their take-back or financial obligations;
- **National authorities**: Responsible for implementing EU legislation, reaching mandatory EU legal targets, defining regulations and operational requirements, monitoring and enforcing the proper implementation of the EPR principle by all stakeholders as well as establishing additional economic instruments like landfill taxes or PAYT schemes ;
- **Consumers/citizens**: Responsible for participating in the separate collection schemes through effective sorting and using the provided infrastructure for separate collection

[61] In the present document, the word "producers" has to be understood in the sense of article 8 of the WFD 2008/98

to the fullest extent possible (or, when generating industrial amounts of waste, make their own arrangements with producers, waste management companies and/or producer responsibility organisations);

- **Local authorities**: In charge, in certain cases (e.g. for certain types of household waste covered by EPR) of waste collection and/or certain transport and treatment operations, achieving environmental objectives in direct collaboration with citizens-sorters/tax-payers and in charge of setting up local incentives fostering separate collection and efficient recovery schemes (including Pay-As-You-Throw schemes);
- **Waste management operators and recycling industry**: In charge of different waste management operations (collection, transport, treatment) in compliance with the regulation (and on behalf of other actors), of improving the waste collection and of treatment infrastructure and processes.

It should be noted that all effective EPR policy should be associated with other economic instruments, such as landfill taxes and Pay-As-You-Throw systems that encourages behavioural change (i.e. moving up in the waste hierarchy).

In addition, **multi-stakeholder platforms should be encouraged to ensure dialogue among stakeholders** with the involvement of representatives of PROs, obligated companies (producers, importers, retailers), public authorities (national and regional/local), waste management industries, consumers (citizens and industrial consumers), environmental NGOs and EU policy makers.

Such dialogue structures (to be set up at the national/regional level) should aim at:

- Increasing transparency of the systems, by sharing information along a product's life cycle, as far as possible without any infringement of competition law;
- Improving the precise allocation of responsibilities and surveillance, for example by consulting stakeholders on the operational objectives of the systems, the approval of collective schemes, etc.;
- Coordinating efforts (in particular, in terms of communication campaigns and R&D) in order to optimise the performance and cost-efficiency of the systems.

### 4.2.2 Policy options

The main policy option for the implementation of this guiding principle is through **national legislation**:

- The extent of responsibilities and roles of different stakeholders (e.g. producers, local authorities, private waste operators) should be set in a political decision process within each Member State.
- Multi-stakeholders dialogue platforms should be defined, set up, and managed at the national scale.

## 4.3 Statement n°3: The full net cost coverage principle

### 4.3.1 Guiding principle

**The design and implementation of an EPR scheme should at least ensure the coverage of the full net costs related to the separate collection and treatment of end-of-life products.**

The implementation of the EPR principle, within the Polluter Pays Principle framework, implies that producers are considered responsible for the environmental impacts of their products along their whole life cycle, including the end-of-life management.

The obligated industries should contribute to communication and awareness-raising efforts to reduce litter and improve source segregation by consumers. They should also contribute to the costs associated with setting up sufficient separate collection infrastructure. Consequently, taking into account Statement n°2 (Shared responsibilities), every EPR scheme should cover **the following net costs related to the end of life of products:**

- Costs for establishing a separate waste collection system;
- Collection, transport and treatment costs for separately collected waste;
- Administrative costs, i.e. costs linked to the running of PROs;
- Costs for public communication and awareness-raising (on waste prevention, litter reduction, separate collection, etc.) as long as producers have a say in their design and implementation;
- Costs for the appropriate surveillance of the system (including auditing and measures against free riders (see statement 9);
- Subtract revenues from recycled material sales.

It should however be highlighted that such a cost coverage should be implemented in line with the allocation of responsibilities (see Statement n°2).

### 4.3.2 Policy options

The following policy approaches could be adopted to implement the full net costs coverage principle:

- **Through European legislation**: Such a principle could be included as a minimum legal requirement for EPR in the Waste Framework Directive;
- **Through national legislation**: Each MS could be given the freedoms to set up the scope of the financial responsibility that each system should bear;

Another possible tool is **the definition-at national level-of a reference cost, set** to be paid by producers to local authorities (in case of mere financial responsibility). Producers could rely on a reference cost, which would be independent from the actual local public authority's choice and which would represent the cost of an optimised performance, taking into account raw material market fluctuations.

**The independent definition of a (national) reference cost**

When obligated companies (through Producer Responsibility Organisations) are required to financially contribute to waste management operations while **leaving the actual choices on the organisation of waste management to a third party** (e.g. local authorities, for instance in charge of collection and/or sorting operations), a flexible 'reference cost' should be established.

Especially **in cases where a local authority decides to use a non-standard collection system,** the costs that the PRO bears should be limited to the agreed reference costs for the optimum collection and treatment system.

This reference cost:

- Should correspond to the **optimal level of service necessary to reach the targets** and obligations of the EPR scheme,

- Should be based on the materials resale market price, and

- Be v**erified by an independent entity with full transparency**.

To this end, **performance indicators** should be developed to address the concept of optimisation, including: environmental, financial, minimum level of service to citizens, minimum requirements in terms of geographical coverage, quality of treatment operations, monitoring of exports, etc.

If such a cost is discussed and agreed among all actors involved, a reference cost could contribute to transparency and equity and avoid disputes between the actors concerned.

The **national (or even regional) scale** is the most relevant for a collective definition of such reference costs of EPR schemes.

## 4.4 Statement n°4: The true end-of-life costs principle

### 4.4.1 Guiding principle

**Fees paid to a collective system by a producer should reflect the true end-of-life management costs of its products.**

In line with the original goal of EPR, which is to foster **eco-design and closed loop systems** by having producers internalise the end-of-life management costs of their products, fees paid by each producer should reflect the actual end-of-life management costs of its own products as much as possible.

Today, through the development of collective schemes for obligated companies to fulfil their EPR requirements, there is a **risk of 'averaging'** costs among producers, thereby **disincentivising** individual efforts towards eco-design. Applying differentiated fees hence appears as a **fair approach**: rewarding those producers who implement eco-design processes in order to facilitate recycling efforts and contribute to resource efficiency.

Whereas the **technical specifications** of such a modulation of fees paid by producers have not yet been defined, there should be a **clear requirement** for EPR schemes to set up **differentiated fees.** The aim of such a principle is to ensure that fees best reflect the **real costs of end-of-life management of products**, based on the strict **application of the waste hierarchy**, i.e. with clear priority given to prevention, reuse, preparation for reuse and recycling.

The criteria upon which differentiated fees are based should be:

- Limited in number, simple to implement, easy to monitor and periodically revised (to ensure that they continue to incentivise eco-design efforts);
- Established by independent third parties or established by the PROs themselves;
- **Reflected in treatment and recycling standards** to make sure eco-design efforts by producers are not implemented in vain.

This principle would work best in combination with a transparent cost and fee structure from PROs. Outcomes would include: a reduction in the use of resources, better reparability or reuse, weight reduction for packaging (quantitative prevention), hazardousness reduction (qualitative prevention) and improvements in the dismantlability and recyclability of products. It can also contribute to the removal of unsustainable products.

Furthermore, this modulation of fees should be made **explicit and visible to consumers, in order to guide their choices** (e.g. through visible fees on products). Beyond the impact on eco-design, such a measure may have an effective marketing impact (if there is a significant enough difference in the final product price).

### 4.4.2 Policy options

The following policy approaches could be adopted to implement the true costs principle:

- **Financial instruments:** Prevention, reuse and recyclability can be achieved thanks to EPR systems through a bonus-penalty fee scale.
- **EC technical guidance:** A study aimed at defining such criteria for each stream could be conducted at the EU level. It would provide guidelines on how to modulate fees in order to apply the waste hierarchy. These criteria should be established at the EU level, as international manufacturers cannot optimise their design for 28 different sets of criteria.
- **EU legislation:** Eco design for recycling requirements could be introduced, although this type of policy must take into account the whole life-cycle of products.

The main policy option here appears to be a financial mechanism aimed at modulating the producers' fees according to their products eco-design degree, reparability and recyclability.

## 4.5 Statement n°5: The fair competition principle

### 4.5.1 Guiding principle

**Notwithstanding the way competition takes place, a clear and stable framework is necessary in order to ensure fair competition, with sufficient surveillance and equal rules for all, supported by enforcement measures (including sanctions).**

Today there are generally two broad management models within EPR schemes:

- **Single Producer Responsibility Organisation (PRO),** owned by the obligated companies: Competition is organised by the PRO (through public calls for tenders) at the operational level (for waste collection, sorting or/and treatment operations and sales of the recycled materials);
- **Several competing PROs,** privately owned (by the obligated companies or other entities), among which the obligated companies are free to choose in order to fulfil their responsibility obligations; competition exists also at the PRO level.

Based on an analysis on available data and stakeholder feedback, it can be concluded that advantages and drawbacks exist for both models. There is **no strong evidence that one model is more effective** (in reaching the targets) **or more efficient** (in reaching the targets at the lowest costs) **than the other**.

In case competition exists or arises among several PROs, actors should be enabled to **compete fairly, within a clear and stable framework,** thorough surveillance and equal rules for all (to avoid cherry-picking practices such as targeting only the most valuable or the most easily collected or treated waste or geographical areas) and realistic enforcement measures in case of irregularities. In case of single producer responsibility organisation, it is essential to ensure strong public surveillance so that the PRO does not take advantage of its dominant position and competition is ensured at the operational levels of waste management.

A number of **recommendations** emerge from this analysis:

- Operators should be systematically selected through transparent public calls for tenders at the three levels of service (collection, sorting and treatment operations).
- EPR systems should provide fair competition conditions, including for operators belonging to the social economy (i.e. third/charity/voluntary sector organisations), who have been active players in this field for decades.
- **Ensure equal treatment to all concerned producers and notably same price conditions** (i.e. same tariff per tonne of product they put on the market) for all customers (be they large or SMEs). Producers should become members of a PRO only if they so wish. For that, not-for-profit PROs should provide full-cost transparency (in order to allow producers to choose individual compliance) and profit-based PROs should be encouraged to provide maximum transparency to their customers (the publication of their yearly balance sheets being insufficient);
- When there is a single collection infrastructure, **ensure equal access to it by competitors,** similar to network access in the railway sector;

- When PROs expand beyond their role as facilitators and become collection or treatment operators or vice-versa, ensure strict separation of these activities.
- Public authorities should closely monitor PROs and the EPR system as a whole even when there is competition, in order to ensure that the principle of cost-covering prices is observed and the objective of the creation of an efficient, effective and low impact waste management system is achieved.

In any case, it is important that an adequate regulation and administrative capacity is in place at the national level to ensure that no anti-competitive behaviours emerge.

### 4.5.2 Policy options

The following policy approaches could be adopted to implement the clear and stable competition framework principle:

- **European legislation**: Make public calls for tenders mandatory for operations, impose non-discrimination of small and medium enterprises, introduce specific provisions for social economy organisations, require minimum transparency requirements from PROs to producers and make sure MS put in place the necessary enforcement capacities.
- **European monitoring and enforcement:** The EC should ensure that national authorities have administrative capacity and will to monitor competition among PROs.

A specific policy option to ensure a clear and stable competition framework in the case of competing PROs is the implementation of a clearinghouse, as presented in the box below.

**In the case of competing PROs, an independent clearinghouse is necessary**

**Definition:** A clearinghouse may be defined as an independent third-party central agency, acting as a regulator for a competitive market.

**Basic Principle:** A clearinghouse must be an independent body. It could be initiated by the producers themselves or by an independent entity from the obligated economy (e.g. chamber of commerce). In either case, it should be subject to strong public surveillance, and should also maintain a strict separation of financial interest from any specific PRO.

Its role and scope should be precisely defined at the national level, especially with regard to other existing entities (e.g. PRO authorisation Ministry, Registry) in order to avoid unnecessary administrative burdens.

**The main functions of the clearinghouse include:**

- Balancing financial and material flows: Fair determination of the PROs' individual collection, recycling and financing obligations, based on market shares. The allocation of quantities/market shares should not have an impact on the compensation that municipalities receive. It should ensure that the whole territory is covered, including rural areas, and prevent 'cherry-picking' strategies.
- Introducing a data collection system, aggregation of reported data (see Statement n°8) and verification of data quality and completeness ('register' role). The clearinghouse should

publish the total amounts of products put on the market, of waste collected and treated, and of material recycled annually, together with a summary of changes in price.
- Ensuring a level playing field for all competing PROs, by verifying that all requirements are met (see Statements n° 8 and n°3).

**Further optional functions of a clearinghouse could be:**
- The clearinghouse could be the main contact point for municipalities.
- When necessary, it could organise the sharing of costs related to certain operations (e.g. reimbursement of local authorities, national communication campaigns), through common agreements with public local authorities, or through common calls for tenders.
- Provide support to public authorities, ensure producer compliance monitoring (i.e. identify free riders).

## 4.6 Statement n°6: The transparency principle

### 4.6.1 Guiding principle

**Transparency is required on the performance and on EPR scheme costs.**

Information on the environmental **technical performance** of the EPR schemes (i.e. achievements in relation to recycling and collection targets) as well as on **financial aspects** (e.g. producer fees, expenditure on collection, transport, sorting and treatment, revenues from resale, expenditure on information and awareness raising campaigns, administration) of the schemes should be provided and made publicly available, especially since cost effectiveness is part of performance measurement.

Legislation should require all EPR systems/PROs to publish:

- Their fees;
- The amount of products placed on the market by their members;
- The amount of waste collected and treated (reused, recycled, recovered [including energy recovery] and disposed of), so that the final destination of all collected waste is identified.

Similarly, **municipalities that have an operational role should publish their costs** in order to make all waste management costs transparent. This would provide a more comprehensive picture of EPR schemes' performance. In other words, there is a need to provide **a comprehensive overview** on the total waste management costs. More specifically, **the types of services consumers pay for should be indicated and clarified** (i.e. what the EPR schemes do and do not cover).

Concerning costs, there might be a need to adapt the transparency requirements depending on the situation in terms of competition at the level of PROs, as PROs' costs constitute a core element of their competitive performance.

### 4.6.2 Policy options

The following policy approaches could be proposed in order to implement the transparency principle:

- **European legislation:** Transparency could be included as a minimum legal requirement in the Waste Framework Directive.
- **European technical guidance:** The EC could set up harmonised methods for performance and cost reporting.

## 4.7 Statement n°7: The reporting harmonisation principle

### 4.7.1 Guiding principle

**Key definitions and reporting modalities should be harmonised at the European level**

At present, there is a lack of harmonisation among EU Member States regarding the key definitions and reporting modalities that can be used to monitor the performance of EPR schemes. The issue of data validation has also been identified as a key challenge at national and EU levels. This makes performance comparisons very difficult.

Standards for the following should be precisely defined and harmonised at the EU level:

- Key definitions:
  - Treatment operations–recycling, recovery (based on the Waste Framework Directive);
  - Products and waste categories–household, municipal, industrial, commercial, professional, post-consumer, etc.)
- Reporting modalities, including:
  - Scope,
  - Data collection methods,
  - Calculation modes,
  - Validation methods,
  - Frequency of updates.

Public authorities should perform a more thorough quality check on provided data in order to facilitate performance benchmarking, sharing of best practices, and continuous improvement of EPR schemes. The European Commission could develop and propose a set of common definitions and reporting modalities, to be applied by Member States once they are available.

### 4.7.2 Policy options

The following policy approaches could be adopted in order to implement the reporting harmonisation principle:

- **EU legislation:** The existing legislation should be harmonised, especially for key definitions. This harmonisation could be facilitated via setting common standards for monitoring, calculation and reporting of waste management data by MS to Eurostat.
- **EC Guidance:** The EC could provide complementary detailed guidance, including a number of acceptable alternatives for data collection, processing and quality reports methodology, with minimum levels of validation of data to be applied by Member States. This guidance could outline best practices under each type of EPR scheme, to be applied by Member States within their system.

## 4.8 Statement n°8: The monitoring and surveillance principle

### 4.8.1 Guiding principle

**Public authorities and the obligated industry should be co-responsible for the monitoring and surveillance of EPR schemes, and should ensure that adequate means for enforcement are in place.**

Monitoring and surveillance should be initially ensured by **public authorities**, with powerful means of investigation and enforcement, through the following actions:

- Provide a formal authorisation (or recognition) procedure for PROs;
- Provide monitoring procedures and audits over PROs, including self-control procedures;
- Set up a system of compliance promotion and enforcement that effectively discourages free riders;
- Define ambitious targets and develop the indicators and reporting obligations to allow their monitoring;
- Ensure the quality of statistics reported;
- Define and enforce monitoring procedures on quality of recycling for exported materials.

Public authorities should endow relevant administrations with sufficient staff and material means necessary to fulfil effective monitoring, enforcement, and to define proportionate sanctions. This is especially relevant in the case of non-attainment of the targets and/or non-respect of the requirements set in the regulation and in the authorisation agreement.

To complement this, **some responsibility for PROs is also required** in order to ensure complete transparency on data management methods and results, and to assist national authorities in their surveillance (e.g. monitoring of exported materials).

PROs should take an active part in the surveillance of the EPR schemes by strictly monitoring:

- Their members (data reporting, free riders, etc.);
- Their members' subcontractors (data reporting, collection and recycling performance, etc.);

- Through regular audits on data reported and waste management activities.

Such surveillance should include monitoring of:

- Producers' compliance with the requirements of the scheme;
- Respect of minimum environmental requirements regarding collection, treatment and recycling operations;
- Inspection on illegal waste shipments.

### 4.8.2 Policy options

The following policy approaches could be adopted in order to implement the monitoring and surveillance principle:

- **European legislation:** The EU legislation could impose minimum requirements to be implemented by the MS in terms of control, authorisation procedure and monitoring. It should then be accompanied by guidelines for enhanced enforcement in MS.

**National legislation:** control, monitoring, authorisation process and sanctions fall under the competence of national authorities in the MS who have to set up the necessary legal framework and enforcement measures.

# Chapter 5. ANNEX

*This section presents all the detailed tables on which the analysis of the above chapters are grounded. This section is organised in the same order than the previous chapter: it starts with a broad overview of EPR schemes in the EU and then goes into depth for each of the four issues dealt with.*

*This annex is composed of the following sections:*

*5.1 Preliminary analysis of EPR in the EU*

*5.2 Organisational aspects and share of responsibilities between actors*

*5.3 True cost principle and cost coverage*

*5.4 Fair competition*

*5.5 Transparency and surveillance*

*5.6 Recommendations*

## 5.1 Preliminary analysis of EPR in the EU

The table below presents the waste streams for which collective schemes were identified in the EU-27 and Croatia.[62]

[62] General: http://www.azo.hr/Otpad; WEEE: http://bewman.eu/croatia.html; Packaging: http://pro-e.org/croatia1.htm; ELV, Batteries, Tyres, Oils: http://www.eea.europa.eu/soer/countries/hr/soertopic_view?topic=waste; Medical waste: http://narodne-novine.nn.hr/clanci/sluzbeni/298682.html

## Table 19: Existing extended producer responsibility schemes in the EU-27 and Croatia

| MS | Batteries | WEEE | Packaging | ELV | Tyres | Graphic paper | Oils | Medical waste, old/unused medicines | Agricultural film | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| AT | X | X | X | X | X | X | X | X | | |
| BE | X | X | X | X | X | X | X | X | X | Disposable plastic kitchenware; photo-chemicals |
| BG | X | X | X | X | X | | | | | |
| CY | X | X | X | X | X | X | X | | | |
| CZ | X | X | X | X | | | | | | |
| DK | X | X | Δ | X | X | X | | | | |
| EE | X | X | X | O | X | | | O | | |
| FI | X | X | X | X | X | X | | X | X | |
| FR | X | X | X | X | X | X | | X | X | Fluorinated refrigerant fluids; pharmaceuticals; lubricants; textiles; infectious healthcare waste; furniture; dispersed hazardous waste; plant protection product packaging and unused products; fertiliser and soil amendment packaging; seed and plant packaging; mobile homes; office equipment ink cartridges |
| DE | X | X | X | O | | | X | | X | |
| GR | X | X | X | X | | | | | | |
| HU | X | X | Δ | X | Δ | | | | | |
| IE | X | X | X | X | X | | | | X | |
| IT | X | X | X | X | X | | | | X | |
| LV | X | X | X | X | X | X | X | | | |
| LT | X | X | X | X | X | X | | | | |
| LU | X | X | X | X | | | | | | |
| MT | X | X | X | N/A | | | | | | |
| NL | X | X | X | X | X | X | | | | Window panes |
| PL | X | X | X | X | X | | X | | | |
| PT | X | X | X | X | X | | X | X | | Packaging of medical waste, old medicines; packaging of phytopharmaceuticals |
| RO | X | X | X | O | | | | | | |
| SE | X | X | X | X | X | X | | X | X | |
| SK | X | X | X | X | X | X | | | | |
| SI | X | X | X | X | X | | X | X | | Waste from hazardous pesticides; graveside candles |
| ES | X | X | X | X | X | | X | X | X | |
| UK | X | X | X | X | | | | | | |
| HR | X | X | X | X | X | | X | X | | Waste containing asbestos |
| Total | 28 | 28 | 27 | 27 | 20 | 11 | 10 | 10 | 8 | |

X EPR scheme | O Takeback obligation but no PRO | Δ Product fee legislation / Governmental fund



bio by Deloitte.

Table 20 below shows product streams with over 5 EPR schemes in place and the amount of waste generated for each. Those product streams for which less than 5 EPR schemes were identified across the EU-27 (and Croatia) are listed in the lower part of the table for reference.

Table 20: Selection of six product streams for further analysis[63]

| Product stream | Number of EPR schemes in place in EU-27 | Quantity of waste generated in EU-27 (tonnes) |
|---|---|---|
| **WEEE** | 26 | 10 000 000 |
| **Packaging** | 25 | 78 672 423 |
| **ELVs** | 25 | 7 334 930 |
| **Batteries** | 27 | 1 720 000 |
| **Tyres** | 20 | 3 250 000 |
| **Graphic paper** | 11 | 51 540 000 |
| **Oils** | 10 | 3 000 000 |
| **Medical waste, old/unused medicines** | 8 | 240 000 |
| **Additional product streams covered by EPR schemes (identified in less than 5 MS)** | | |
| Bulky metals, glass, plastics and wood; plastic foils; compound packaging (Tetra-Pak); expanded polystyrene; disposable plastic kitchenware; photo-chemicals; fluorinated refrigerant fluids; lubricants; textiles; dispersed hazardous waste; furniture; ink catridges; mobile homes; office equipment; farm plastics; packaging of medical waste and phytopharmaceuticals; waste from hazardous pesticides; graveside candles; waste containing asbestos | | |

[63] WEEE data : 2012, EC : http://ec.europa.eu/environment/waste/weee/index_en.htm; Packaging data : 2010, Eurostat : http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/key_waste_streams/packaging_waste; ELV data : 2010; 2009 for Italy; no data available for Malta, Eurostat: http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/key_waste_streams/end_of_life_vehicles_elvs; Batteries data: 2010, Eurostat: http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/key_waste_streams/batteries; Tyres data: 2008, European Tyre Recycling Association (ETRA): http://tinyurl.com/cxjwgzs; Graphic paper data: 2010; Paper and cardboard wastes generated by households, Eurostat: http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/waste_generation_management/generation/households (mutiplied by 3, as the figure represented is considered to be equal to cardboard/paper packaging, equal to 25% of the total stream including graphic paper and cardboard/paper packaging; Oils data: 2012; EC: http://ec.europa.eu/environment/waste/oil_index.htm; Medical waste, old/unused medicines data: 2010; Chemical and medical wastes generated by households, Eurostat: http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/waste_generation_management/generation/households

Table 21: Proposed selection of MS for portable batteries product stream

|  | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Austria | **Third highest collection rate for portable batteries** and relatively high cost efficiency. | Austria has the **oldest batteries scheme**, which was initially put in place as a voluntary system in 1990, and replaced by a mandatory system organised by private industry in 2005. The new system involves **4 competing EPR organisations and a governmental monitoring institution.** In Austria, EPR schemes on **batteries and WEEE are strongly interlinked.** The system covers portable consumer, industrial, and automotive batteries. |
| Switzerland | **Notably high collection rate (72%) and recycling rate (90%)** | Switzerland has a **producer-led system** with **one collective producer responsibility scheme.** Producers have a financial obligation; 65% of producers have joined the collective scheme. Furthermore, **each Swiss citizen pays an estimated 1.45 francs per year for waste battery recycling via built in fees at purchase.** |
| Belgium | **Highest collection rates for portable batteries**; however the system in place is the most costly. | Belgium also implemented a first battery EPR scheme quite early (1996) and introduced a second, specifically for automotive batteries in 2003. The system in place allows for individual or collective producer responsibility; **the single PRO for portable batteries is producer-led.** The system covers household, industrial and automotive batteries. |
| Denmark | The Danish system appears to achieve the **highest per capita battery collection at the lowest costs.** | The system in place allows for individual or collective producer responsibility; **4 competing PROs exist and municipalities serve as collectors of portable consumer batteries.** The system covers household, industrial and automotive batteries. |
| Netherlands | **Relatively high collection rate and high cost efficiency.** | The Netherlands has a **long experience in EPR schemes** for batteries, with the **single producer-led PRO launched in 1994**. The system in place allows for individual or collective producer responsibility. The system covers household and industrial batteries. |
| France | France achieves **low costs per tonne of portable batteries collected,** with a moderate collection rate. | The system in place allows for individual or collective producer responsibility; **2 competing producer-led PROs exist.** The system covers household, industrial and automotive batteries. |
| **Alternatives** | | |

| | | |
|---|---|---|
| UK | Collection and recycling rates are rather low. | The UK has a **strongly market oriented approach with a producer-led collective EPR system involving 5 competing schemes.** The system appears to only cover consumer batteries. |
| Sweden | The Swedish system appears to achieve the **highest per capita battery collection** with relatively high cost efficiency. | The system in place allows for individual or collective producer responsibility; **3 PROs exist which are partly in competition**. In Sweden the implementation of producer responsibility on batteries is organised in **close connection with corresponding WEEE systems. The system covers household, industrial and automotive batteries.** |

Table 22: Proposed selection of MS for ELV product stream

|  | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Sweden | **Relatively high performance** in terms of recycling, recover and re-use rate (91%). | **Sweden has one of the oldest existing ELV systems** (since 1975). The system in place is **collective, with 3 existing PROs**. It is government-led and producer-funded. |
| Netherlands | The Netherlands is **one of the highest performing MS in terms of recycling, recovery and re-use rate** (95%). | The Netherlands has **one of the oldest existing ELV systems** (since 1995) and served as a basis for the EC when writing the ELV Directive. The EPR system in place is **collective and producer-led, with 2 PROs, one which is specifically for scooters.** |
| Germany | Germany has a **particularly high recycling, recovery and re-use rate (106%)**[64] and. The system in place appears to **cover 100% of the total collection and treatment costs** | The **producer-led** German system is quite established (since 1998). |
| Slovak Republic | **High recycling, recovery and re-use rate (90%) and high coverage of collection and treatment costs (82%).** | The Slovak Republic is an **example of a MS with a recycling fund in place for collection/treatment of ELVs, similarly to a number of Eastern European countries.**[65] The **government-led collective scheme**, which has been in place since 2001, primarily has financial responsibility for the collection and treatment of ELVs. |
| Austria | **The system achieves a high recycling, recovery and re-use rate (97%).** As the material value of the ELVs is higher than the recycling costs, no fees are paid by producers. | An **individual producer responsibility system** has been in place in Austria since 2002. |

[64] It should be noted that Germany's achievement of a recycling, recovery and re-use rate above 100% appears to indicate the treatment of imported ELV waste.

[65] While a number of Eastern European countries have in place a recycling fund for the collection and treatment of ELVs, the Slovak Republic was specifically selected due to the early state date of the scheme in comparison to many other countries (2001 versus 2004 and onwards), its high recycling, recovery and re-use rate and its high coverage of collection and treatment costs.

| | | |
|---|---|---|
| Finland | Finland has a **high recycling, recovery and re-use rate** (95%), with **nearly 100% of the total collection and treatment costs covered.** | The collective system in place is **producer-led but regulated by the government, with 2 PROs in place.** |
| **Alternatives** | | |
| Estonia | Relatively low recycling, recovery and re-use rate. | **The individual producer responsibility system in Estonia is unique.** Producers are financially responsible for the collection and treatment of a quantity of vehicles aligned with their market share. **Producers have to divide the costs themselves and communicate with each other**; if a producer collects less than their market share they will get a bill from another producer which collected more. The system involves primarily financial obligations. |
| Croatia | Reporting does not yet allow for the calculation of recycling, recovery and re-use rates. | Croatia is an example of individual producer responsibility in Eastern Europe with an environmental fund. The government-led system has a primarily financial responsibility. |

Table 23: Proposed selection of MS for graphic paper stream

| | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Finland | No contributions are made by producers currently as the value of paper is high enough to cover the costs of running the schemes. | Launched in 1999, 2 producer-led financial systems appear to be in place. The following graphic paper items are covered by the schemes in place: newspapers, magazines, ads, brochures, envelopes, office paper and other similar paper products. The graphic paper system is not linked to packaging EPR schemes. |
| France | The scheme achieved a 43.2% recycling rate in 2010. Fees paid by producers total to €67.4 million and the scheme collects/treats an estimated 75¨% of graphic paper put on the market. | One scheme has been in place since 2007. The scheme covers: graphic papers including printed papers, papers destined for printing, household and similar. The graphic paper system is not linked to packaging EPR schemes. |
| Netherlands | Fees are unknown, but a recovery, recycling and re-use rate of 94% was achieved in 2009. | A producer-led voluntary system for graphic paper has been in place in the Netherlands since 2001, which was formalised in 2005. The graphic paper system is not linked to packaging EPR schemes. |
| Sweden | The first more general graphic paper scheme achieved a recycling rate of 94% in 2010 while the second focused on office paper achieved a recycling rate of 76.6% in 2011. | Two schemes are in place in Sweden; one since 1994 and a second since 1996. Both systems are collective. One covers newspapers, magazines, direct mail, phone books, mail order catalogues and similar products (and excludes cardboard) and the other is a voluntary agreement for office paper including books, forms, copy paper, labels, envelopes, and posters. The graphic paper system is not linked to packaging EPR schemes. |

Table 24: Proposed selection of MS for oils product stream

| | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Belgium | **High collection rate (85%) and regeneration rate (94%)** with a **high percentage of oils collected/financed** in relation to the amount put on the market (61%). The schemes **cover 100% of collection and treatment costs**. | Launched in 2004, **2 producer-led collective** schemes are in place for **edible household oils, such as cooking oils and non-edible oils.** |
| Finland | **Relatively high collection rate (76%) and medium regeneration rate (51%),** with a **relatively high percentage of oils collected/financed** in relation to the amount put on the market (49%). | The government-led system covers **mineral- and synthetic-based lubricant oils** and is **financed by a tax** paid by producers and importers. |
| Germany | **High collection rate (100%)** and low regeneration rate (28%), with a **relatively high percentage of oils collected/financed in relation to the amount put on the market (46%).** | A **collective, producer-led system** was launched in 2002; since 2007 oil distributors primarily finance collection and treatment operations whereas previously some government funding was provided. Distributors are required to take back motor and gearbox oils; **a market system exists for other oils including vegetable and animal-based oils, such as cooking oils. Around 100 'collectors' of waste oils have been authorised.** |
| Spain | **High collection rate (100%) and relatively high regeneration rate (67%),** with **medium percentage of oils collected/financed** in relation to the amount put on the market (37%). The schemes **cover 100% of collection and treatment costs.** | In place since 2006, **two collective systems exist which cover lubricant, motor, gearbox, and hydraulic oils of mineral, synthetic or animal origin, including cooking oils.** |
| Italy | **High collection rate (100%) and relatively high regeneration rate (59%),** with a **medium percentage of oils collected/financed** in relation to the amount put on the market (40%). | **In place since 1982, one collective system exists which covers mineral- and synthetic-based lubricant oils.** It is mandatory for all producers to join the EPR scheme, which is overseen by several government ministries. |
| Portugal | **Relatively high collection rate (76%) and low** | Since 2003 a **collective system** has been |

| | | |
|---|---|---|
| | **regeneration rate (35%), with a 53% recycling rate.** A relatively low amount of oils is collected/financed in relation to the amount put on the market (46%). **Producer contributions make up 68% of funds used for collection and treatment** and funds from the sale of waste oils contribute the remaining 32%. | in place with **one EPR scheme, covering mineral lubricant oils, other mineral oils, and other similar oils.** |
| **Alternatives** | | |
| Greece | **Medium collection rate (61%), with a relatively high percentage of oils collected/financed** in relation to the amount put on the market (48%). Less than 100% of collection and treatment costs are covered. | In place since 2004, **one collective system exists which covers mineral- and synthetic-based lubricant oils.** |
| Poland | **Medium collection rate (50%) with a low percentage of oils collected/financed in relation to the amount put on the market (26%).** | **A total of 5 schemes** currently exist which were introduced in 2001 and 2002. The schemes **cover mineral and non-mineral lubricant oils.** |

Table 25: Proposed selection of MS for packaging product stream

| | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Germany | While it is considered to be expensive, the system achieves a **high recovery, recycling and re-use rate (96%).** The system in place appears to **cover 100% of the total collection and treatment costs.** | The system in place allows for individual or collective producer responsibility; **9 competing PROs exist and a deposit refund scheme is also in place.** The system appears to cover household, commercial and industrial packaging. |
| Belgium | Belgium achieves a **high recovery, recycling and re-use rate (96%).** The system in place is considered to be **highly cost efficient and appears to cover 100% of the total collection and treatment costs.** | The system in place allows for individual or collective producer responsibility and offers kerbside collection, with no deposit refund system in place for non-reusable packaging. **2 non-competing PROs exist, one for household packaging and one for industrial packaging.** |
| Netherlands | **The Netherlands achieves a high recovery, recycling and re-use rate (97%).** | The collective system in place has 1 PRO, which works in partnership with executing organisations. Collection schemes differ among municipalities (kerbside collection, bring system or often no separate collection but mechanical sorting from residual waste) and there is a **voluntary deposit scheme for single use beverage packaging.** |
| Austria | The system achieves a **relatively high recovery, recycling and re-use rate (92%).** It appears to **cover 100% of the total collection and treatment costs and is considered to have relatively high cost efficiency.** | The system in place allows for individual or collective producer responsibility. **One PRO exists and no deposit refund scheme is in place.** The system in place covers household, commercial and industrial packaging. |
| Czech Republic | **Relatively high recycling, recovery and re-use rate (78%).** | The system in place allows for individual or collective producer responsibility; **1 PRO exists and a well performing bring system (containers) is used for collecting household packaging waste.** No deposit refund system is in place for non-reusable packaging. The system appears to be quite mature in spite of its relatively recent introduction. |
| France | France achieves a **moderate recycling, recovery and re-use rate (70%).** The existing system covers 57% of total collection and treatment costs for household packaging waste. | Launched in 1992, the system in place allows for individual or collective producer responsibility. **3 non-competing PROs exist, focused on household packaging and additional voluntary systems are in place for professional packaging.** Schemes are producer-led and |

| | | |
|---|---|---|
| | | no deposit refund system for non-reusable packaging is in place. |
| UK | The recycling, recovery and re-use rate achieved is moderate. The system in place covers an estimated 5-10% of the total costs of collection and treatment. | The system in place allows for individual or collective producer responsibility; **22 competing PROs exist. The unique system involves tradable recovery/recycling credits.** The system in place covers household, commercial and industrial packaging. |
| **Alternatives** | | |
| Luxembourg | **Luxembourg achieves a high recovery, recycling and re-use rate (90%).** | The system in place allows for individual or collective producer responsibility; **1 PRO exists which focuses on household and commercial packaging waste.** No deposit refund scheme is in place. |

Table 26: Proposed selection of MS for WEEE product stream

|  | Performance | Organisational features |
|---|---|---|
| **Proposed selection** | | |
| Ireland | **Relatively high recycling and re-use rate (83%) and collection (8.22 kg/inhabitant). The schemes in place cover 100% of collection and treatment costs.** | The system in place is collective and involves a **voluntary agreement between Irish industry and the Government of Ireland.** Two schemes are in place, one focused on household WEEE and the other focused on business WEEE. |
| United Kingdom | Moderate collection performance (7,77 kg/inhabitant) and collection rate (34%). **Producers cover a large portion of collection costs for B2C WEEE, with some contributions by local authorities.** | The unique producer-led system in place is collective and involves 29 EPR schemes, with public authorities responsible for the collection of household WEEE. |
| Finland | **Relatively high recycling and re-use rate (87%) and collection (8.1 kg/inhabitant).** The schemes cover close to 100% of the collection and treatment costs for B2C waste. | **Three collective schemes are in place, the earliest dating from 2000.** The schemes are producer-led but government regulated and include all WEEE within the WEEE Directive, plus B2C luminaries. |
| Latvia | **High recycling and re-use rate (92%) and 100% collection/recycling costs covered. A medium percentage of WEEE collected/financed in relation to the amount put on the market (30%).** | **Producer-led with one system in place.** |
| France | **Relatively high recycling and re-use rate (81%)** with a medium percentage of WEEE collected/financed in relation to the amount put on the market (27%). | **Three producer-led competing collective schemes are in place for household WEEE in France, with a fourth for lamps.** |
| Denmark | **Relatively high recycling and re-use rate (85%) and high percentage of WEEE collected/financed** in relation to the amount put on the market (53%). It is estimated that the **capital needs of running the** | **One system is in place, which is government-led and linked with the WEEE stream.** 80% of fees paid to DPA-System go towards running the WEEE scheme; 20% to batteries. |

| | | |
|---|---|---|
| | **scheme are fully covered by the volume-based fees.** | |
| Sweden | **Relatively high recycling and re-use rate (84%) and highest collection (12.2 kg/inhabitant). Highest percentage of WEEE collected/financed in relation to the amount put on the market (69%)** and **100% coverage of collection and treatment costs** for household WEEE. | **2 producer-led collective systems** are in place, with primarily financial responsibility. **Public authorities are responsible for the collection of household WEEE** and the schemes in place cover all WEEE within WEEE Directive. |
| **Alternatives** | | |
| Germany | **Relatively high recycling and re-use rate (85%).** | A producer-led government-regulated system has been in place since 2005 with **public authorities responsible for the collection of household WEEE.** Producers are responsible for providing collection equipment and ensuring their emptying, while **municipal collection services are responsible for the collection of B2C WEEE.** |
| Portugal | **Highest recycling and re-use rate of MS (93%).** | The system in place is **producer-led, with 2 schemes** involving both financial and organisational responsibilities. |

## 5.2 Organisational aspects and share of responsibilities between actors

### 5.2.1 Type of PRO responsibility

| AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
| | *portable* | *Automotive* | | | | |
| Partial organisational responsibility | | Simple data management responsibility | Partial organisational responsibility | | | |

The most common role for PROs in EPR schemes for batteries is a partially organisational one. Producers and retailers are supposed to provide take-back points, free-of-charge to consumers. They are also supposed to collect and transport batteries that inhabitants bring to municipal civic amenity centres. To do so, most of the time, producers transfer their obligation to a PRO.

In Austria: portable batteries are collected at municipal collection facilities and at the point of sale. Retailers/distributers have to take-back portable and automotive batteries from final consumers free of charge and independently from any purchase of new batteries (0:1 solution). For the pick-up and transport of the battery boxes filled at the point of sale a pick-up service is organised.

In Denmark: out of 738 registered battery "producers", 207 are individual compliers (mainly for automotive batteries). Producers must take-back waste portable batteries from municipal recycling centres and waste automotive and industrial batteries from customers and have them treated. Based on the respective market shares of the PRO, DPA annually allocates them a number of municipalities from which they have to take over the collected batteries.

In the Netherlands: the 778 producers (manufacturers and importers ), who are obliged to provide a free collection system which covers the whole territory, have handed over their obligations to a PRO (Stibat).

In Switzerland: Collection points are installed by the producers (importers and retailers). INOBAT, the government-run PRO is commissioned by BAFU with the collection, management and use of the advance disposal fee applied to batteries.

| AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|
| Financial responsibility | Not an EPR scheme | Financial responsibility | | | |

Except in the German case, which is not an EPR scheme, PROs for end-of-life vehicles only assume a financial responsibility.

Transport of an ELV to an authorised treatment facility is the responsibility of the last vehicle owner. The last car owner brings the vehicle to an authorised treatment operator's plant. The take-back is cost-free. If the ELV does not contain essential components, the take-back point may charge a certain amount to compensate the loss of value.

Treatment and reselling is done by authorised operators, who declare the quantities treated to the PRO or to the authorities.

| | FI | FR | NL | SE |
|---|---|---|---|---|
|  | Partially organisational responsibility<br>Producers are required to arrange free-of-charge transport for discarded paper products from the reception points provided by property owners. Producers are also required to cooperate with municipalities in organising the collection and recovery of waste paper and in providing relevant | Financial responsibility through contract with municipalities<br>The PRO supports financially local authorities for the collection, sorting and treatment of graphic paper waste. | Financial responsibility through contract with municipalities | Full organisational responsibility |
| | Producers and municipalities are required to cooperate and share information to organise the collection and recovery of waste paper. | Local authorities are fully responsible for the collection, sorting and treatment of graphic paper waste. | Waste management is local. Municipalities are responsible for organising collection and sorting of household waste. PRN reimburses the value of the raw material under specific market circumstances | Municipalities are responsible for ensuring that households are given information to ensure and encourage consumers and households to sort waste ; they have an enforcement role in the EPR scheme (making sure that the producers provide a suitable collection system) |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
|  | *edible* | *non-edible* | | | | | |
| | Financial responsibility through contracting with municipalities | Financial responsibility | Financial responsibility through a tax | - | Financial responsibility | | |

The main system for the recovery of (in most cases mineral) oils is a mere financial responsibility. The waste oils produced by industries are collected by operators and sold to refineries, cement kilns or incinerators. Based on the declaration by licensed operators, PROs reimburse collection costs if these costs are not covered by the secondary oil market value (which tends to increase).

In Spain, it is clearly stated that the PRO does not intervene in decisions on how to treat the collected oils; this is left to collection and treatment operators based on their expertise.

In Germany, there is no PRO, the oil recovery is entirely left to market forces, due to the waste oil positive market value. Therefore, it cannot be considered as an EPR scheme and as such will not be systematically considered in this document. The question that remains raised is: how would the system work in more difficult economic circumstances? (and how does it work for oils of types 3 and 4: additional information needed).

In Belgium, for edible oils, the EPR concept has been abandoned in 2011 to set up a 'collective plan'. 2011 was a transitional year from which waste edible oil evolved from a waste with negative market value to one with positive market value. This shift created tensions as producers were paying while LPAs were getting revenues out of resale. Free market now ensures collection and recycling of edible oil. No producer contribution is required since 2013, except for administrative costs. In Flanders, since 2011, the EPR scheme has been replaced by a 'collective plan' (additional information needed).

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
|  | Fully organisational responsibility | HH: Partially organisational responsibility C&I : simple financial responsibility | Financial responsibility through reimbursement contracts with municipalities and sorting plants | Fully organisational responsibility | Financial responsibility through reimbursement contracts with municipalities | Financial responsibility through reimbursement contracts with municipalities and sorting plants | Simple financial responsibility (PROs purchase Packaging Recovery notes from accredited treatement facilities) |
| | Municipalities act as collection and/or recycling partners if they are selected through the PRO's call for tenders | Municipalities are responsible for collection (and sometimes sorting) of packaging waste. The PRO reimburses them and sells the sorted material | Municipalities are fully responsible for collection and sorting of packaging waste, and get reimbursed by the PRO | Municipalities compete with private actors for collection and sorting contracts. They have an agreement with the PROs for the separate collection of packaging material | Municipalities are fully responsible for collection and sorting of packaging waste, and get reimbursed by the PRO | Municipalities are fully responsible for collection of packaging waste | |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | HH: Partially organisation responsibility C&I: Mostly through individual systems; organisational responsibility "unless otherwise agreed"<br><br>HH: PROs collect HH WEEE from municipal collection sites C&I: Possibility to transfer the responsibility along the value chain (up to the user) | Fully organisational responsibility | HH: Fully organisational responsibility C&I: Possibility to delegate the responsibility to the end-user | Partially organisational responsibility<br><br>HH: PROs place collection receptacles at collection points (local authorities or distributors) and manage the transport and treatment C&I: requirements not as clear as for HH WEEE | Fully organisational responsibility | Partially organisational responsibility<br><br>PROs collect WEEE from municipal collection sites or distributors | Partially organisational responsibility<br><br>Producer collective schemes must show evidence notes, either issued by their own collection system, or acquired from other stakeholders. Distributors finance collection through the Distributor Take-Back System (DTS) |
| | Local authorities must establish and pay all costs for establishment and operation of municipal collection sites. | Local authorities may have agreements with PROs to set up local collection points; in this case, municipalities are paid by the PROs for collection costs | Local authorities may set up a separated collection point for WEEE, by contracting with a PRO; they receive a compensation for collection and communication costs. | Local authorities must accept HH WEEE free of charge at their civic amenity center. They also have a strong enforcement role (distributors collection points must be registered with their local authority) | No specific role | Local authorities organise and bear the costs of the collection of WEEE from HHs | Local authorities organise collection, and get financial support from the DTS |

### 5.2.2 What exactly does the PRO do?

In general, the PRO's responsibility comprises data management, financial responsibility and organisational tasks. Many (portable) batteries are brought to municipal collection centres. PROs organise their picking-up and reimburse municipalities for this service.

In Austria: For the collection of portable batteries the PROs cooperate with regional partners, which are either communal waste management organisations or private companies. For the pick-up and transport of the battery boxes filled at the point of sale a pick-up service is organised by the PROs.

In Belgium, for portable batteries: The approach differs between regions: the Walloon region does not allow PROs to have organisational activities. As a matter of fact, BEBAT and a host of other organisations and producers have started a court procedure to dispute the Walloon legislation.

In Belgium, for automotive batteries: In contrast to BEBAT, RECYBAT does not have to organise collection or financing of the system due to the positive market value of automotive batteries. The system is self-financed. However, producers still have to pay a fee aimed at covering expenses related to the data management by the PRO.

In Denmark: The PROs' role is mainly financial. Nevertheless, the PROs collect lead acid batteries from cars and industries, as well as 8 % of the portable batteries at collection points operated by the PROs directly. There is a clear distinction between DPA's role as system coordinator (clearinghouse) and the PROs' roles as pick-up services.

In France: The two accredited collective schemes (COREPILE and SCRELEC) are responsible for the collection and treatment of waste portable batteries and accumulators. They ensure the organisation of collection, awareness campaigns, transportation to recycling facilities and treatment of portable batteries and accumulators.

In the Netherlands: Stibat has a coordinating role, which includes: providing information on legislation, an administration programme, publicity campaigns to promote consumer participation and a collection service for discarded batteries. Stibat sets up nearly 22,000 waste collection points. The PRO contracts professional waste management companies to pick-up collected portable batteries from municipal collection centres as well as portable and industrial batteries from offices/businesses. These operators transport the collected batteries to the unique sorting plant.

PROs are mainly created to centralise producers (or importers) fees, aggregate data and repay operators in case of negative market value.

It must be stated that, apart from Germany, in most countries, the actors that put he vehicles on the market are more often importers than manufacturers.

In Germany, there is no PRO, the ELV recovery is entirely left to market forces. Therefore, it cannot be considered as an EPR scheme. Car producers and importers have to ensure a take-back

system for all their vehicles in an authorised collection facility or an authorised dismantling facility. The last owner can bring the car for free-of-cost or even receives a payment for his or her car.

In Austria, a car owner has several options to give back his vehicle:

- official take-back points of the producers/importers or PROs;
- car dealers, which are not producers/importers (e.g. while buying a new car);
- collection or treatment companies, which are not part of the collective system .

Until 2011, the Austrian ELV producer responsibility system was mainly based on individual take-back solutions.

In Finland, the PRO's tasks are: communication, data reporting, coordination of organisational activities (through contracting with shredding companies) and coordination of the take-back points (scrap yards). These points have to have an environmental permit and a contract with one of the 4 shredding companies. These points can issue certificates of destruction, by which the imposition of the annual road tax on consumers is halted. The PRO also makes its own audits both of shredding companies as well as of take-back points.

In Sweden, a state-run Car Scrapping Fund existedpreviously (to the ELV Directive?). It has been replaced by a PRO, which is now responsible for the achievement of targets for re-use, recycling and recovery. Producers and importers of vehicles pay a fee to BilRetur for the management of their ELV obligation.

In Slovakia, a Recycling Fund has been set up for the collection of funds from producers and provides support to dismantling and treatment facilities by redistributing the fees for the collection, dismantling and treatment activities. In Switzerland: INOBAT engages qualified transporters, which pick up the batteries all over the country free of charge regardless of the quantity and bring them to a recycler.

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
|  | Reimburses LPAs | Pays industrial producers. Collects data and report | No real PRO, the scheme is government-run | - | The PRO sells the collected oils to industrial plants (refiners and cement industry) and incinerators. | N/A | No organisational role. Only aggregates data (from producers and operators) and reimburses organisational actors. |

In the EPR systems for oils, PROs firstly aggregate data (both from oil producers and from collection & treatment operators) and also manage the producers' fees in order to cover reporting, collection and treatment costs.

### 5.2.3 Role of Local Authorities

In most cases, Municipalities provide collection centres for portable batteries.

In Austria: Municipalities are obliged to take back portable batteries from all (household and business) final users. For the take-back and collection of portable batteries municipalities receive an 'infrastructure compensation' payment either directly from the PRO (when contracts exist) or from the 'coordination unit'. The coordination unit later on recovers the costs from the PROs based on their respective market shares.

In Belgium, for portable batteries: The civic amenity sites of the municipalities are an important collection system for portable batteries. Municipalities are reimbursed for the collection costs of portable batteries through civic amenity sites by BEBAT.

In Belgium, for automotive batteries: Automotive batteries can also be disposed of in civic amenity sites.

In Denmark: Municipalities collect more than 90 % of the collected portable batteries. Local authorities register their collection sites on the DPA-System website.

In France: Municipalities can set up collection systems in public places (e.g. waste sorting centres) or sign a contract with collective schemes in place.

In the Netherlands: Municipalities operate municipal depots for small chemical waste (SCW) where consumers can also bring their spent batteries.

In Switzerland: there are also public collection points for batteries operated by municipalities. Nearly 50% of collected portable batteries are gathered by public collection points.

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| | Municipalities are responsible for HH oils collection and reimbursed by the PROs. | LPAs manage the civic amenity sites | HH waste oils shall be received by LPA free of charge. LPAs arrange transport to treatment facilities. | Nothing | | | |

In the EPR systems for oils, local public authorities are involved insofar as domestic (edible or non-edible) oils are included in the scope.

In most MS, local public authorities are responsible for issuing the permits for the ATFs and perform inspections.

## 5.3 True cost principle and cost coverage

### 5.3.1 Organisational costs coverage

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| | full coverage | | self financing | Partial coverage | full coverage | | |

In most cases, the financial responsibility assumed by battery producers, through a PRO, covers 100% of collection and treatment costs, as well as data management and awareness-raising campaigns.

- In Belgium the collective system for automotive batteries is self-financing. Nevertheless, producers must still pay a fee. The positive market value of automotive batteries covers all collection & treatment costs; producers pay only an administrative fee to cover Recybat's administrative costs.

- In Denmark, there are several fees. The costs of the municipal waste portable battery collection are covered by the SKAT fee. The fees for the portable battery system are covering the costs for system surveillance and municipal battery collection, but they are not covering the direct costs of the PROs and producers.

- In the Netherlands, collection and treatment costs of industrial batteries are almost covered by the recycling revenues. Therefore, the revenues from producers' fees must only be required to cover the costs for the management of portable batteries.

- In Austria, PROs have to use 3 % of their annual income to support waste prevention projects.

A reference cost is used in Belgium for portable batteries. Reimbursement is calculated using a formula published in a Ministerial Act, and based on a reference civic amenity site. For each waste stream subject to Extended Producer Responsibility, it has been determined how much of the infrastructure is used for the collection of the relevant waste stream. Other parameters include the number of inhabitants and the amount of waste collected.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| | Self-financing | - | Self-financing | Fees cover costs for the items which have a negative value | Self-financing | |

Most EPR schemes for ELVs are "self-financing". It means that costs for collection, depollution, recycling and treatment are covered by the revenues from their recycling. Consequently, fees paid by producers and importers serve mainly to pay costs associated with: communication campaigns, data reporting and audit actions.

In the Netherlands, the producers' fees also cover costs of depollution and treatment of materials with a negative residual value: fluids (six types), wheels, batteries, airbags.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | 100 % of net costs for transportation and treatment | Partial coverage of net costs for collection, transportation and treatment | Self-financing (operational costs are covered by resale revenues) | 100% of net costs for collection, transportation and treatment |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | edible | non-edible | | | | | |
| | LPAs are reimbursed for 100% costs. | 100% | | 100% The resale receipts cover all costs. For high quality (type 1 and 2) & quantities, the collector pays significant fees. | The PRO covers 100% of collection charges and provides a "cost compensation fee" (corrispettivo) so that refiners can sell the regenerated oil at market price | 100% | |

The EPR schemes for oils generally cover 100% of organisational costs, even when these operations are undertaken by local public authorities. When one actor generates a great quantity of oil in one location, he can easily have it collected. In Germany, where some kinds of mineral oils have a great value, collectors sometimes even have to pay in order to get the waste oils. For worst quality oils and small quantities, there can be an incentive: In Italy, a compensation fee if provided to refiners, when the regenerated oil market value is not sufficient. In Belgium, the PRO reimburses small waste oil producers. In Germany, where there is no EPR scheme, the collectors sometimes have to pay money to refineries (or thermal sites, cement kilns) for them to accept oils from types 3 and 4.

The reimbursement of costs may be based on an external reference. In Belgium, the LPA's cost coverage is based on a formula, calculated from a reference civic amenity site. In Spain the reimbursement provided to the operators is also done according to a formula, which is based on the world oil base price (Reference Index: ICIS LOR and PLATTS). If the regenerated oil sale price goes up, the reimbursement provided by the EPR scheme decreases.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
|  | 100% of collection and net treatment costs for separately collected packaging | HH: 100% of collection and net treatment costs for separately collected packaging<br>C&I: no cost coverage | 100% of net costs for collection and treatment of separately collected packaging (based on standardised costs) | 100% of net costs for collection and treatment of separately collected packaging | 75% of net costs for collection and treatment of all HH packaging (including not separately collected, based on an optimised system) | 100% of net costs for collection and treatment of separately collected packaging | HH waste: estimated to around 10% (no requirement in terms of costs coverage) |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | HH: 100% transportation (from public amenity centres) and net treatment costs<br>C&I: 100% collection and treatment costs (if individual scheme), no costs if delegation to the user. | 100% of collection, transport and net treatment costs | 100% of collection, transport and net treatment costs<br>Financial participation in communication by local authorities | HH: 100% transportation (from public amenity centres or distributors) and net treatment costs | 100% of collection, transport and net treatment costs | 100% of transportation and net treatment costs | 100% of net transportation and treatment costs |

### 5.3.2 Which kind of costs are taken into account?

Given that the schemes are "self-financed", all collection, dismantling and depollution costs are covered. Not other organisational costs are taken into account.

| | FI | FR | NL | SE |
|---|---|---|---|---|
|  | Net costs for transportation and treatment of separately collected paper waste<br>PRO's administrative and communication costs | Net costs for collection, transportation and treatment of paper waste collected by local authorities (87 % of PRO's costs)<br>PRO's administrative and communication costs<br>Audits and monitoring of local authorities and waste management operators | N/a | Net costs for collection, transportation and treatment of separately collected paper waste<br>PRO's administrative and communication costs |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
|  | The PRO reimburses collection & treatment, when there is no positive market value. Also reimburses reporting costs. The PRO questions whether prevention awareness raising should be its task. | For C&I: The PRO reimburses reporting costs from collection operators, when there is no positive market value and for small quantities. For HH (5%) : The PRO reimburses collection & treatment, when there is no positive market value. Communication costs (45%) | Almost 75% of the funds raised by the tax go to a remediation fund of oil-related soil contamination. | - | Incomes from material sales Communication and awareness campaigns | Incomes from material sales Communication and awareness campaigns (5%) - Research & development (3%) | Incomes from material sales Identification of free riders Communication and awareness campaigns (4%) |

In most cases, PROs reimburse collection and treatment costs as long as there is no positive market value. The costs covered are indeed net costs: income from resale is taken into account. Reporting costs are also generally included, as well as communication and awareness campaign.

--> The Finnish task system also finances remediation of oil-related soil contamination.

--> In Portugal, the PRO is obligated by its authorisation to dedicate 5% of its budget to communication and awareness raising activities and 3% of its budget to research and development work.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
|  | Collection and treatment costs for separately collected packaging<br>Costs for incineration of plastic packaging waste not separately collected<br>Participation in local authorities' communication<br>PRO's administrative and communication costs<br>Fund for promoting waste prevention projects | HH: Collection and treatment costs for separately collected packaging<br>Participation in local authorities' communication<br>PRO's administrative and communication costs<br>Audit of WM operations<br>C&I:<br>PRO's administrative and communication costs<br>Incentives for separate collection<br>Reporting by WM operators | Collection and treatment costs for separately collected packaging<br>PRO's administrative and communication costs<br>Audits of collection and treatment operators<br>Contribution to the government's environmental fund | Collection and treatment costs for separately collected packaging<br>PRO's administrative and communication costs<br>Participation in additional costs for municipalities : communication, clean-up of collection spaces) | Collection and treatment costs for separately collected packaging<br>Collection and treatment costs for non separately collected packaging<br>Participation in communication costs for municipalities<br>PRO's administrative and communication costs<br>R&D, ecodesign and prevention | Collection and treatment costs for separately collected packaging<br>Anti-littering program<br>PRO's administrative and communication costs<br>(Until 2013: higher contribution due to tax on packaging) | No requirement in terms of costs coverage |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | Net costs of transportation and treatment<br>Administrative and communication costs for PROs<br>Administrative fees paid to DPA-system | Net costs of collection, transportation and treatment<br>Administrative and communication costs for PROs | Net costs of collection, transportation and treatment<br>Administrative and communication costs for the clearinghouse<br>Communication costs of local authorities<br>WEEE protection measures of local authorities<br>Audit of waste management activities<br>R&D activities (at least 1% of turnover) | Net costs of transportation and treatment<br>Administrative and communication costs for PROs | Net costs of collection, transportation and treatment<br>Administrative and communication costs for PROs | Net costs of transportation and treatment<br>Administrative and communication costs for PROs | |

### 5.3.3 Is there a minimal level of service and/or geographical coverage defined by legislation?

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| | PROs must provide area coverage for the whole of Austria (100 collections points) | A collection point for portable batteries is ensured within 400m of every household | N/A | | 1 collection point for 2,000 inhabitants. | 1 collection point for every 750 inhabitants. | N/A |

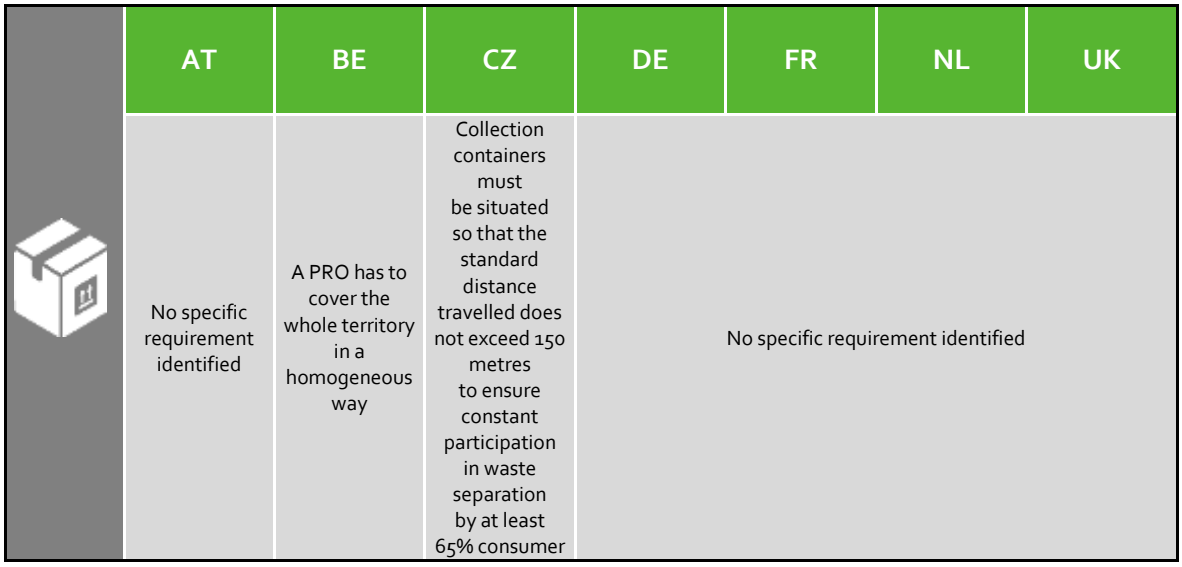
In most MS, a minimal geographical coverage is imposed to producers by authorities. It is not clear when the collection network density is imposed by legislation or a simple fact. It appears more probable that a dense network happens in small and densely inhabited countries (Belgium, Netherlands, Austria, Switzerland) than in huge and scarcely populated countries.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| | For each car brand, the average distance to the next take-back point must not be greater than the average distance to the next selling point. | A facility within 50km from the place of residence. | Not yet | One collection point required every 30 km | - | |

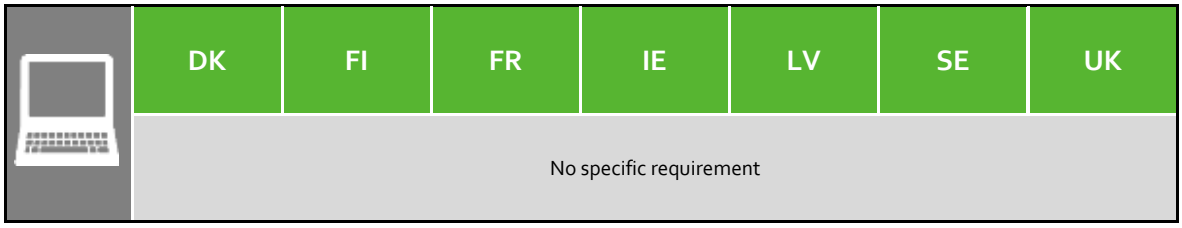
In half of the cases, the legislation specifies a maximal distance for the location of take-back points within the country. In Germany, where ELVs recovery is left to market forces, the law indicates that a minimal network of collection points must be provided, in order to provide an easy access to these facilities.

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| | The whole territory must be covered in a homogeneous way. | | The contract with the operating agents sets a maximum sum for collection costs. | Regional authorities have to ensure that the spread of collection points is sufficient. | No | | |

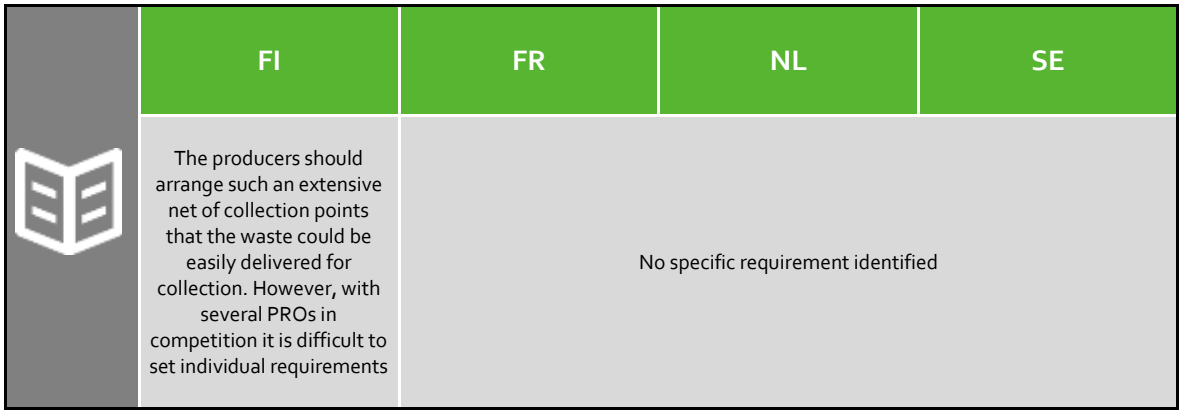
As this scheme does not primarily concern household, there is not always a minimal level of service consideration. In Germany, where the waste oil recovery is market driven, regional authorities have a regulating role regarding territorial coverage.



| AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|
| No specific requirement identified | A PRO has to cover the whole territory in a homogeneous way | Collection containers must be situated so that the standard distance travelled does not exceed 150 metres to ensure constant participation in waste separation by at least 65% consumer | No specific requirement identified | | | |



| DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|
| No specific requirement | | | | | | |



| FI | FR | NL | SE |
|---|---|---|---|
| The producers should arrange such an extensive net of collection points that the waste could be easily delivered for collection. However, with several PROs in competition it is difficult to set individual requirements | No specific requirement identified | | |

### 5.3.4 True cost: to which extent does the fee reflect the real 'end-of-life' cost of products?

In France, both PROs have introduced a **modulation** of the fee according to the batteries' respective environmental impacts.

In Belgium, a fixed environmental tax is used to make producers pay more than the actual collection and treatment costs. With the recent replacement of the tax by an environmental fee, producer contributions will be lowered in the future as **the fee will reflect** real collection and treatment costs.

As the schemes are mostly self-financed, fees paid by producers do not really reflect the dismantling and depollution costs.

However, there is an issue of adapting what is –in some cases- repaid to treatment operators by the PRO. In the Netherlands, for instance, as the system has been in place for over 18 years, it does not foresee to take into account the increasing value of materials in ELVs. Therefore, a recycling fee remains in place (€45 per vehicle put on the market) while the materials with a positive value in ELVs often cover the treatment costs of those elements with a negative residual value.

| FI | FR | NL | SE |
|---|---|---|---|
| No fees paid currently | Elaboration of an "eco-modulation" of the fees, based on recyclability criteria | Administration costs + fees in case of municipalities deficit | No fees paid currently |

| BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|
| *edible* | *non-edible* | | | | | |
| - | No | - | No eco-modulation. 100% costs covered | No eco-modulation. 100% costs covered | Same tariff for all primary oils, no matter if the oil generates much waste or not. 100% costs covered | |

Although not all kind of oils generate the same amount (some oils evaporate when they are used) and quality of waste oil, generally a unique tariff is applied to all producers.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
|  | No specific requirement identified | | | No information on fee calculation | System of bonus/malus (up to 100% of the base-fee) based on the recyclability and prevention efforts of the producers | No specific requirement identified | No information on fee calculation |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | No information on fee calculation, each PRO is free to decide the fees amount. | | The producer fees must be modulated according to environmental criteria (reusability, recyclability, lifetime, presence of hazardous substances) | No information of fee calculation | | | |

## 5.3.5 Comparing technical performances[66]

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| **Batteries collected** (2011) | 1,738 t | 2,406 t | confid. | 1,589 t | 17,397 t | 3,385 t | 2,375 t |
| **Batteries collected per inhabitant** (2011) | 0.207 kg/inh | 0.219 kg/inh | N/A | 0.286 kg/inh | 0.268 kg/inh | 0.204 kg/inh | 0.302 |
| **Return rate**[67] (on the basis of what has been put on the market) | 49% | 52% | 100% | 47% | 36% | 42% | 72% |
| **Recycling rate** (on the basis of what has been collected) | N/A | N/A | Lead: 100%<br>Acid: 100% neutralised<br>Plastics : 45% | 65% | 68% | N/A | |

France is by far the country where the highest amount of batteries is collected (in absolute terms), whereas Denmark and Switzerland reach higher rates in per capita values. In Belgium, this figure for automotive batteries was not available.

In quantities per inhabitants, regarding portable batteries, the rate is quite homogeneous: from 0.2 kg/inhab./year (Netherlands, Austria) to nearly 0.3 (Denmark, Switzerland).

Except for automotive batteries (for which the positive market value ensures a 100% return rate), the return rate ranges from 36% (France) to 72% (Switzerland). Regarding France, despite the good performance (in absolute terms), it is estimated that approximately one third of the remaining waste batteries and accumulators is kept unused by individuals and the last third is thrown away in unsorted municipal waste.

Considering recycling rates, most data are lacking[68]. In the Netherlands and Austria, for instance, no recycling rate can be reported as the waste batteries are mainly treated in different companies in the neighbouring countries together with batteries from other countries. The Belgian PRO for portable batteries awaits the official calculation method on European level on 1/1/14.

[66] *Warning: information might not be either available or comparable.*

[67] As, in most cases, collection is based on take-back mechanism, it is here talked of "return rate".

[68] Commission Regulation 493/2012 for the calculation of recycling efficiencies makes reporting compulsory as from 2014.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| **Vehicles collected** | 80,000 | 466,160 | 55,075 | 206,150 | 32,796 | N/A |
| **Vehicle collected per inhabitant** | 0.010 /inh | 0.006 /inh | 0.010 /inh | 0.012 /inh | 0.006 /inh | N/A |
| **Collection rate** (on the basis of what has been put on the market) | 28% | 13% | 45% | 38% | 23% | N/A |
| **Recycling rate** (on the basis of what has been collected) | 84% | 92% | 83% | 83% | 88% | 84% |
| **Recovery rate** (on the basis of what has been collected) | 97% | 106% | 95% | 95% | 90% | 91% |

The number of vehicles collected ranges from 0,006 vehicle/inhabitant (Germany, Slovakia) to 0,012 vehicle/inhabitant (Netherlands), which is the double. The German system, which is not based on a classic EPR scheme, does not achieve important numbers. As a matter of fact, the collection rate (compared to the number of vehicles put on the market) is the lowest: 13%. However, the collection rate is never higher than 45% (Finland).

The fact that collection rate is everywhere inferior to 50% can be related to ELVs exporting practices, as well as their resale as second-hand vehicles outside the EU (before they become ELVs). The amount of ELVs that do not go through the EPR schemes (and are either illegally dismantled or exported) seems important, particularly in Finland, Germany and Austria[69].

- In Germany, for instance, a substantial number of finally de-registered cars are exported to other EU and non-EU countries. In these cases, producers do not have to assume their responsibilities outside the EU.

Recycling rates are high and homogeneous: between 83% (Finland, Netherlands) and 92% (Germany). Recovery rates are higher and homogeneous as well: between 90% (Slovakia) and 106% (Germany).

Financial incentives for bringing back the ELVs to the producers/PROs/domestic treatment companies may be necessary to increase the collection rate.

- In Finland, there is a strong incentive for consumers to ensure that their vehicle is correctly deregistered via an authorised operator, otherwise they will continue to pay road taxes.

[69] ADEME (2010) *Etude de la gestion de la filière de collecte et de valorisation des véhicules hors d'usage dans certains pays de l'UE*

- In Austria and in Germany, a peak in ELV generation was observed in 2009 due to the introduction of an eco-premium, which was paid to customers for replacing an old vehicle by a new car. This scrappage scheme was intended to foster the automotive industry in the years of the economic crisis. As a result, more cars became ELVs. In Germany, because of the incentive, four times more ELVs occurred compared to previous years, which explains the 106% recovery rate in 2011.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| **Graphic paper put on the market** | 67 kg/cap./y | 3.5 million t (52 kg/cap./y) ; 1.7 million t contributing | 83 kg/cap./y | 40 kg/cap./y |
| **Recycling rate** | 87.2% | 43.2% | 84% | 94% |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| **Oil collected** (2011) | 28,500 t | 45,000 t | 20,900 t | 457,000 t | 189,267 t | 28,024 t | 134,452 t |
| **Oil collected per inhabitant** (2011) | - | 4.1 kg/inh | 3.9 kg/inh | 5.6 kg/inh | 3.1 kg/inh | 2.7 kg/inh | 2.9 kg/inh |
| **Collection rate** (on the basis of what has been put on the market) | 85% | 67% | 70% | 100% | 44% | 76% | 100% |
| **Recycling rate** (on the basis of what has been collected) | 91% | 87% | 86% | 84% | 89% | 82% | 69% |

The quantities of waste oil collected vary a lot but range from 2,7 (Portugal) to 5,6 kg/cap./year (Germany), although the collection rate is the lowest in Italy. As for the recycling rates, it is tricky as some MS include regeneration and incineration in their 'recycling' accountability, but it ranges between 69% and 91% of what has been collected.

| | AT (2010) | BE (2011) | CZ (2012) | DE (2011) | FR (2011) | NL (2011) | UK |
|---|---|---|---|---|---|---|---|
| **Packaging put on the market** | 1,226,000 t (147 kg/cap./y) | HH: 825,939 t (75 kg/inh) C&I: 721,517 t (65 kg/inh) | 866,382 t non refundable (88 kg/inh) | HH : 7,350,000 t (90kg/inh) | HH : 4,774,000 (73 kg/inh) | 2,748,000 (165 kg/inh | 10,484,000 t (167 kg/inh) |
| **Recycling rate** | 67% | HH: 85% C&I: 82% | 71% | 75% | 67% | 72% | 61% |
| **Recovery rate** | 92% | HH: 88% C&I: 92% | 76% | 80% | 80% | 80% | 67% |

Austria/UK: no distinction possible between household and industrial packaging.

| | DK (2012) | FI (2010) | FR (2012) | IE (2011) | LV (2010) | SE (2012) | UK (2011) |
|---|---|---|---|---|---|---|---|
| **EEE put on the market** | HH: 116 109 t C&I: 22 879 t | 148,157 t | HH: 1.37 million t C&I: 229,285 t | 96,360 t[70] | 15,289 t | 23 kg/inh | HH: 1,020,509 t C&I 447,208 t |
| **WEEE arising** | Not evaluated | | HH: 17 to 24kg/cap./y C&I: not evaluated | Not evaluated | | | |
| **WEEE collected** | HH: 75,134 t (12,7kg/inh) C&I: 1,072 t | 50,886 t (9,5kg/cap./y) | HH: 452,732 t (6.9kg/inh) C&I: 17,284 t | HH: 34,958 t (7,6 kg/inh) C&I: 6,134 t | HH: 4,170 t (2kg/inh) C&I: 117 t | 17,5 kg/inh | HH: 499,024 t 7.9 kg/inh |
| **Recycling rate** (on the basis of what has been collected) | 64,292 t (84%) | 45,003 (88%) | HH: 80% C&I: 79% | Between 82% and 88% | 3,629 t (85%) | 84% | No information |
| **Recovery rate** (on the basis of what has been collected) | 70,701 t (93%) | 46,567 t (92%) | HH: 83% C&I: 95% | 34,759 t (85%) | 3,629 t (85%) | 92% | |

[70] Eurostat 2010

## 5.3.6 Comparing cost-effectiveness[71]

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| **Total fees per year** | 1,987,150 € | 21,810,427 € | 89,792 € | 288,000 € | 11,300,000 € | 5,400,000 € | 12,050,000 € |
| **Amount of a single fee per battery** | 0.1239 € | 0.04 € + annual fee 100 € | DPA fee = 7 €/t SKAT fee = 818 €/t PRO license fee = N/A | N/A | | 2,57 € / kg | 0.1239 € |
| **Total fees / recycled tonne** | 1,143 €/t | 9,065 €/t | N/A | 181 €/t | 650 €/t | 1,595 €/t | 5,074 €/t |
| **Total fees / inhabitants** | 0.24 €/inh | 1.98 €/inh | 0.01 €/inh | 0.05 €/inh | 0.17 €/inh | 0.32 €/inh | 1.53 €/inh |

Total producers' fees paid per year vary between 90,000 € (Belgium, automotive) and over 20,000,000€ (Belgium, portable). The ratio of total fees per inhabitant ranges from 0.01 to almost 2€ (Belgium, portable).

The cost of the EPR system for batteries is therefore very different from one country to another: it is very expensive in Belgium and in Switzerland and much less in Denmark, France and Austria.

In the Belgian case, the PRO argues that if costs are relatively higher in comparison to other systems in the EU, it is because BEBAT invests a lot in communication / education and in building a dense network of collection infrastructure, which leads to the high return rates. As can be seen below, Switzerland, whose system is also very expensive, has even higher a return rate.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| **Total fees / year** | 142 € | - | 450,000 €[72] | 23,311,481 € | 9,418,813 € | N/A |
| **Fee / vehicle put on the market** | 4 € | | Min : 3€ Max : 19€ | 45 € | 66 € | |
| **Total fees paid by producers / recycled vehicle** | 2 € | | 8 € | 113 € | 287 € | |

[71] *Warning: information might not be either available or comparable.*

[72] 2012

| | | | | | | |
|---|---|---|---|---|---|---|
| **Total fees paid by producers / inhabitants** | 0.02 €/inh | | 0.08 €/inh | 1.40 €/inh | 1.74 €/inh | |

Fees paid by producers (manufacturer or importers) vary greatly from one country to another: they range from 3-4€/vehicle (Finland, Austria) to 45 (Netherlands) and even 66 €/vehicle (Slovakia). This great gap is due to the fact the Dutch and Slovakian PROs actually cover part of the collection and treatments costs, whereas the Austrian and Finnish PROs do not fund any operating expense.

As a consequence, fees paid by producers (or importers) can represent: either 2€/treated vehicle (Austria) or 287€/treated vehicle (Slovakia)! From this point of view, the Austrian scheme (as well as the Finnish one) appear much more cost-efficient than the Dutch or Slovakian ones.

In Slovakia, funds raised are partly invested in new treatment technologies, thereby developing waste infrastructure in the country.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| **Total fees** | Currently no fees, the costs of the system are covered by the value of waste paper collected. | 67.1 million€ | PRO levies contribution in case of deficit + 700,000€ every 4 years for administration | Currently no fees, the costs of the system are covered by the value of waste paper collected. |
| **Fees / paper put on the market** | | 39 €/t (for contributing paper) | | |
| **Fees/ paper recycled** | | 52 €/t | | |
| **Fees/y/inh** | | 1 €/inh | | |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| **total fees in 2011** | 0 | 1,900,000 € | N/A | 0 | 43,700,000 € | 4,666,237 € | 17,382,256 € |
| **tonnes collected in 2011** | 28,500 t | 45,000 t | 20,900 t | 457,000 t | 189,267 t | 28,024 t | 134,452 t |
| **total fees paid by producers / recycled tonne** | 0 | 42 €/t | N/A | - | 231 €/t | 167 €/t | 129 €/t |
| **total fees paid by producers / inhabitants** | - | 0.17 €/inh | N/A | - | 0.72 €/inh | 0.44 €/inh | 0.38 €/inh |

Producers' fees are collected in Belgium (non-edible oils), Italy, Portugal and Spain. The ratio per recycled tonne varies from 42 to 231 €/tonne. The ratio per inhabitant varies from 0,17 to

0,72 €/inhabitant. In Belgium (edible) and Germany, no fee is required from producers: the system is self-financed. In Finland a tax is applied, for which information is lacking.

|  | DK | FI | FR (2010) | IE (2010)[73] | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| **Total fees / year** | No information available | | HH: 181 million€ | 6,567,092€ | No information available | | |
| **Fees / EEE put on the market** | | | HH: 132€/tonne | 68 €/tonne | | | |
| **Fees/ EEE collected** | | | HH: 384€/tonne | 160€/tonne | | | |
| **Fees/y/inh** | | | HH: 2.8€/inh | 1.4€/inh | | | |

|  | AT (2012)[74] | BE (2011)[75] | CZ (2012) | DE (2011) | FR (2011)[76] | NL (2011) | UK (2011)[77] |
|---|---|---|---|---|---|---|---|
| **Total fees / year** | 198.2 M€ (HH: 156,4 M€ C&I: 41,8M€) | HH: 86,7 M€ C&I: 13,25 M€ | 55.7 M€ | HH: 941 M€ | HH: 584 M€ | 115,6 M€ | 71 M€ |
| **Fees / packaging put on the market** | 129 €/t | HH: 113 €/t C&I: 19€/t | 64 €/t[78] | 128 €/t | 122 €/t | 42€/t | 6.7 €/t |
| **Fees/ packaging recovered** | 172€/t (HH: 249€/t C&I: 51€/t) | HH: 119€/t C&I: 21€/t | 91 €/t | 160 €/t | 153 €/t | 52€/t | 10 €/t |
| **Fees/y/inh** | 23,6 €/inh (HH: 18,6 €/inh C&I: 5€/inh) | HH: 7.9 €/inh C&I: 1.2 €/inh | 5.5 €./inh | 11.5 €/inh | 8,9€/inh | 6.9 €/inh | 1.1€/inh |

[73] Figures for Ireland are based on WEEE Ireland (which covers 72% of the population

[74] Extrapolated from ARA data

[75] Net costs decreased in 2012 to 5.3 €/inh, due to higher material sales

[76] As France is not a full-cost coverage system, the performance based on the fees cannot be directly compared

[77] For UK, the costs are estimates; given that the cost coverage is partial (around 10% for household waste), the figures cannot be compared

[78] Based on non-refundable packaging put on the market

## 5.4 Fair competition

### 5.4.1 Is there competition among PROs?

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| | Yes, 4 PROs<br>The market shares for portable batt. are:<br>ERA 48 %<br>ERP 39 %<br>Interseroh 8 %<br>UFH 5 % | No, only 1 PRO | | Yes, 4 PROs<br>Elretur: 86 %<br>ERP: 3%<br>RENE AG: 3%<br>ReturBat: 8 % | Yes, 2 PROs + 1 individual scheme | No, only 1 PRO | |

Regarding the number of competing PROs in the field of battery recovery, situations are diverse: in some cases there is only one PRO (Belgium, Netherlands, Switzerland) and in others there are several PROs (Austria, Denmark).

- In France, although there are two PROs, they are not really in competition since each have a clearly identified area of action[79].

- In Denmark, there is competition between the four PROs, especially for the collection of lead acid batteries in the industrial and automotive sector. However, with 86 % market share Elretur is the dominant PRO. It is now coming under pressure by the internationally operating ERP (3%) and two other PROs.

- In Switzerland, the system is actually government-run.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| | No competition | *No PRO* | One single PRO | | | ? |

In most ELV recovery schemes, **no competition** exists among PROs.

In Austria, although there are two PROs, they are not competing, as each of the collective systems is responsible for different car brands. The ÖCAR system has applied for an extended permission to cover all car brands, but the permission has not been granted yet.

[79] It is pointed out that some type of collection points are more efficient and this may cause tensions though.

In Finland, two non-competing PROs were previously operational: one handled regular automobiles and the other was specialised in the collection of campers and mobile homes. The second recently closed down because the amount of motor homes was very low.

Whereas competing PROs could arise in Finland and the Netherlands, the Slovakian PRO is government-run and therefore no other PRO is expected.

| FI | FR | NL | SE |
|---|---|---|---|
| Yes, 2 PROs in competition | No, 1 single PRO | | |

| BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|
| edible | non-edible | | | | | |
| No, only 1 PRO. | | No real PRO. One collective govt-run scheme: there is only one operating agent in the system. | No PRO at all | No, ach EPR scheme is managed by one single PRO | Theoretically possible but in practice: EPR scheme managed by one single PRO | Free competition, but only 2: one is huge (90% of the market share) and the other one is small. |

In most EPR schemes for oils, there is **only one PRO**. In the Finnish case, the scheme operational actor is selected among others through a negotiated procedure every five years.

| AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|
| Yes, 2 PROs on HH packaging, one being specialised on beverage cartons 7 PROs on industrial packaging | No, 1 PRO for HH packaging and 1 PRO for industrial packaging | No, 1 PRO for HH and industrial packaging | Yes, 10 PROs with one representing more than 50% of the market | No, 2 PROs but one is the owner of the second, therefore no competition | No, 1 PRO. A "substantial majority" being required to operate | Yes, over 30 competing PROs |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | Yes, 3 PROs covering all EEE categories in competition, with one representing 89% of producers in collective schemes. Only one PRO for category 5 (lamps) | Yes, 5 compliance schemes in Finland, three of them (SELT, ICT and FLIP) being regrouped in a single organisation (Elker Ltd), therefore competition exists among 3 organisations. | HH: yes, 3 PROs in competition, with one representing over 70% of the market. Only 1 PRO on lamps<br>C&I: yes, 4 PROs in with competition limited to some categories of EEE | Yes, 2 PROs in competition, with one representing 74% market share. Operation-wise, the 2 PROs cover different geographical areas. | Yes, 4 PROs in competition for all categories. Only 1 PROs for lamps | Yes, 2 collective schemes with one representing more than 75% of marketshare. | Yes, 39 compliance schemes competing |

### 5.4.2 Is there competition among WM operators?

| | AT | BE | | DK | FR | NL | CH |
|---|---|---|---|---|---|---|---|
| | | *portable* | *automotive* | | | | |
| | Yes, among transporters<br>No, among treatment plants (only 1) | Yes, waste operators need to compete through public tenders | N/A | No, only one waste treatment company. | Yes, no more than 30% of the portable batteries and accumulators are treated in one centre | Yes, among transporters<br>No, among treatment plants | |

According to his sample, it is more probable to have a scenario with competing treatment operators in huge countries than in small ones.

- In Austria, there is no competition from the single sorting plant onwards. The market is too small for more than one plant.

- In Switzerland as well, there is only one recycling plant in the country. The handling price that INOBAT is due to pay to Batrec is therefore set by the federal authority. Regarding collection, competition is not about prices but rather about the ability to provide services.

- In the Netherlands, it is the same: there is competition between the waste management companies which pick-up the collected batteries and transport them to the sorting plant. However, there is a single sorting plant, contracted by Stibat. Sorted batteries are then forwarded to different battery treatment plants (in the Netherlands or in France, Germany, Belgium, etc.).

- In France, competition does exist between service providers (collectors, treatment) through calls for tenders to deliver services for the PRO. Contracts last for one to two years and prices are fixed with an indexation on real raw materials market price.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| | Yes, competition of shredder plants is increased by a low ELV collection rate. | Yes, the treatment operators work in a highly competitive surrounding. | Yes, 272 collection points 4 authorised operators with post-shredder technology | Yes, ARN contracts with an estimated 247 dismantling and treatment operators | Yes | Yes, competition exists between collection and treatment actors. Treatment operators are selected via a public and competitive tender process |

In general, there is competition among treatment operators.

In the Netherlands, there is a concern that competition on tariffs should not incentive illegal export and treatment markets.

Whereas many collection points exist, there are fewer plants equipped with post-shredding technologies. One particularity of the ELV stream is that treatment operators are in some cases collectively organised:

- In Austria, the six shredder plants which are in operation joined in 2012 to form a collective system.

- In Germany, the dismantling facilities are partly organised in a network. Indeed, dismantling facilities report the economic problem of the decreasing number of ELVs being presented for dismantling, which makes it hard for them to fill their capacities.

In Germany, competition if particularly fierce, as treatment capacities exceed the quantity of ELVs that is caught by the authorised collection points. Part of the problem may be related to non-authorised facilities or to the illegal practice of exporting used cars abroad. In order to counter such free-riding practices, treatment operators get organised.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | Yes, contracts with PROs who also provide collection and transportation services | Yes, selected through call for tenders by local authorities | Yes, between operator contracted by the PRO and others operators | Yes, contracted on the basis of competitive tenders by Pressretur |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| | Yes, competition between collectors at civic amenity sites (for HH oils). They are selected by public tender | Yes, industrial oil users choose their waste operator out of any of the 15 licensed operators. | Yes, competition is ensured among treatment operators through public tenders. | Yes, 100 waste collection & treatment operators. Competition is fierce as there is excessive treatment capacity. | Yes, 242 collectors and 38 refiners | Yes | Yes, more than 100 companies PROs do not intervene into organisational aspects |

In most EPR schemes for oils, collection and treatment operators are competing. In most cases, they actually operate in a B-2-B modality. When local public authorities are involved, there are open bids.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Yes, selected by PROs through public tenders every 3 to 5 years | HH: Yes, selected by PRO and local authorities through public call for tenders C&I: Yes, direct contracts with waste generators | HH: yes, selected by local authorities through public call for tenders | Yes, selected by PROs through public tenders (joint tenders for collection, separate tenders for sorting and treatment) | Yes, selected by local authorities through public call for tenders | Yes, selected by local authorities through public call for tenders Contracts with the PRO only for reporting | Yes, accredited reprocessors or exporters of packaging waste may sell PRNs to PROs. |
| | **DK** | **FI** | **FR** | **IE** | **LV** | **SE** | **UK** |
|  | Yes, selected by PROs via a public and competitive process | Yes, selected by PROs or individual compliers, no public information available | Yes, selected by PROs via a public and competitive process | Yes, selected by the PRO via a public and competitive process (every 3-4 years) | Yes, selected by PROs through public tendering process | | Complex system of interaction: some AATFs have contracts with PROS, some have their own collection infrastructure and issue evidence notes, etc. |

## 5.5 Transparency and surveillance

### 5.5.1 Transparency

***Which reporting is accomplished by producers and PROs?***

| | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
|  | Market data are submitted from the PRO to the Ministry of Environment via an electronic data management system (EDM). | Producers and waste operators report to the PRO, which aggregates data and reports to the competent regional authorities. | Producers report to SKAT[80] the quantities placed on the market (as basis for a levy on municipal battery collection). Producers report also to DPA quantities placed on the market, taken back and treated. The 4 PROs report to DPA the amount of batteries collected and treated. | Producers must report annually on the quantities of products put on the market, collected and treated to the National Register. | Producers must provide annual reports about *the way in which* they have fulfilled their obligations. There is a digital registration and data reporting system | Producers report data directly to INOBAT. There is a digital registration and data reporting system |

In most cases, producers report to the PRO, which reports to the national authorities. In some cases, an electronic reporting system is used (Austria, Netherlands). In other cases, a **clearinghouse** centralizes the information (Austria, Denmark). In the Danish case, producers have to report both to SKAT and to DPA.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
|  | Data have to be reported electronically to the Ministry for Environment. | - | Reporting is centralised to PIR ELY | The PRO reports to the Ministry annually. | N/A | The PRO reports annually to the Swedish EPA and the Ministry. |

Producers are required to keep records of the amount of vehicles produced, imported, exported and re-exported. In general, the PRO aggregates data provided by producers (and treatment operators?) and convey it to national authorities. If organisations opt for individual producer responsibility, they report directly on their actions to national authority which oversees the system.

[80] Danish Tax and Customs Administration

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | Annual reporting to the Finnish Environment Institute and national producer data register | Annual reporting to the French Environmental Agency. | The PRO and the Paper Fibre Covenant collect and monitor data from municipalities and recycled paper retailers | Producers and/or PROs submit reports to the Swedish EPA; National results for wastepaper performance are reported in annual reports by the Swedish EPA |

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|---|---|---|---|---|---|---|---|
| | edible | non-edible | | | | | |
| | Yearly public annual report | | Data is not publicly available. | - | Annual report List of members, quantities and treatment | Activity report yearly | Yearly declaration, verified by independent audit |

The Finnish and German cases, which are not led by PROs, are also less transparent regarding aggregated data (quantities and costs).

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| | Data reported to the Lebensministerium<br><br>Publication of a performance report and an annual report (including general information on costs) | Data reported by PROs and individual compliers to the Interregional Packaging Commission.<br><br>Publication of annual reports (including detailed information on costs) | Reporting by PRO and individual compliers to the Ministry of Environment | Reporting to the Central Office of the Dual Systems (CODS); who also acts as a clearinghouse (assessment of market share, coordination of supplementary charges paid to the municipalities, coordination of co-tendering) | Reporting to the French Environmental Agency, publication of an annual report (including detailed information on costs) | Reporting to the Inspection Agency and Ministry of the Environment | Reporting by PROs to the National Packaging Waste Database (NWPD) of the Environment Agency, which act as a clearinghouse: data collection, control and publication, free-riders monitoring, accreditation of reprocessors, issuing of PRNs. |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| | Reporting to DPA-System (government-run) by PROs and individual compliers. | Reporting to the Centre for Economic Development, Transport and the Environment for Pirkanmaa (government-run) | Reporting to the French Environmental Agency, by PROs or individual compliers. | Reporting by PROs and producers to the WEEE Register | Reporting to the national WEEE Register | Reporting to the Swedish EPA (through PROs) | Reporting by producers to PROs. |

***Which reporting is accomplished by Waste Management operators?***

Recycling companies have to report the quantities treated in their plant to the national authorities, but there are frequent traceability problems.

- In France, recycling companies have to report the quantities treated in their plant to the National Register. There is an incentive to report data correctly since frequent controls on this reporting are made by the ADEME.

- In the Netherlands, recycling rates are not available, due to a traceability problem.

- In Denmark, data show a considerable gap between the batteries collected and the batteries sent to treatment.

- In Austria, data is reported to the clients (e.g. the PROs) and to the national authority, but no data is published.

In general, treatment operators have to report: either to the PRO or directly to national authorities.

In Germany, the dismantling and shredder facilities have to report their data to the Statistical offices of the federal Länder. They are reported to the Federal statistics authority.

In Slovakia, authorised collection and treatment operators report to the Recycling Fund.

In Sweden, dismantlers are compelled to report their recovery-data via a data system to the producer organization.

In Austria, comprehensive reporting obligations are in place for free ELV collectors and for the recycling and shredder plants. In particular, the locations of the take-back points have to be reported to the Ministry for Environment by the producers and published on the internet.

| | FI | FR | NL | SE |
|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| | No specific obligation identified | Ensure traceability of the graphic paper stream recovered | The PRO collects data from the WM operators | No specific obligation identified | | |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| | N/A | Valorlub collects data monthly from collectors: quantities and treatment modes. | Data is collected and 'regularly' submitted | Collection operators and treatment facilities have to report to BAFA | N/A | | Monthly report, through an electronic platform |

Collection and treatment operators have to convey their data (quantities and costs) on a regular basis (monthly) either to the PRO or public authorities.

The producers also generally convey the quantities put on the market to their PRO.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| | Monthly report to ARA (PRO) | Reporting to PROs | Reporting to PRO on waste quantities collected and treated (basis of reimbursement of local authorities and sorting plants) | No specific reporting obligation | Reporting to PROs | Municipalities and WM operators report to the PRO | No specific reporting obligation |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| | Companies must be approved by the Environment Agency, but no specific reporting in the context of the EPR scheme | No specific reporting obligation | | | | | AATFs issue the evidence notes to prove that WEEE have been treated |

## 5.5.2 Monitoring of free riding

| | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
| **How many free riders are there?** | There seems to be no free rider problem | Exact percentage unknown, but probably low due to intensive inspection in the past | *N/A* | | | |
| **Who is in charge of identifying free riders? How?** | N/A | Each year, the PRO has the declarations of one third of its members audited to ensure reliable data | N/A | If any doubts on the compliance of an actor appear, ADEME conveys the information to the Ministry of Ecology | N/A | Checks on declarations and coherence in the reporting are undertaken every year by INOBAT and BAFU. |
| **Which sanctions/penalties are provided against free riders?** | Fine of double the amount he would have to pay to a PRO. | The PRO informs the regional government and asks to take action. | Fines and prison sentences | The Ministry of Ecology has authority to impose fines or criminal sanctions. | N/A | Companies that do not report their sales to INOBAT are retroactively charged the due fees. |

In general, free riding does not seem to be an important issue. Problems tend to arise from online trading and imports. In France, for instance, some wholesalers (e.g. from Belgium) are buying huge quantities of portable batteries and sell them to French resellers. These resellers are subject to the French EPR scheme but, unaware of it, they are not fulfilling their responsibilities. The same problem exists for online trading.

As the Swiss system has gaps in online trading, INOBAT has access to import data from the Directorate General of Customs. Based on this data, INOBAT determines whether the companies meet their mandatory reporting requirements.

In many cases, sanctions are in place, but seldom applied. In France, for instance, there are fines and even criminal sanctions. However, no judicial action has been undertaken yet.

|  | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| **How many free riders are there?** | N/A | - | It is assumed that a number of small and large companies putting used cars on the market in Finland are not fulfilling their obligations. There are few non-compliance problems with new vehicle importers | 17% | N/A | Estimation of little Free riders do not appear to be a problem |
| **Which sanctions/penalties are provided against free riders?** | For non-compliance with the obligations (except reporting) of the ELV-Ordinance financial penalties up to € 7,720 are foreseen. | - | N/A | Permits are enforced by local and regional authorities; ARN can suspend contracts but has no enforcement power. | N/A | |
| **Which sanctions/penalties are provided against free riders?** | For non-compliance with the obligations (except reporting) of the ELV-Ordinance financial penalties up to € 7,720 are foreseen. | - | N/A | Permits are enforced by local and regional authorities; ARN can suspend contracts but has no enforcement power. | N/A | |

In most cases, the problem of free riders is not relevant for ELVs, because of the easy-to-identify car brands and because of the high value of the ELVs.

The problem here does not seem too much about producers or importers who would benefit from the recovery system without paying for it. Rather, the problem seems related to the **difficulty for the authorised treatment operators to get a consequent part of the ELV arisings**:

**- In Austria**, more than 70% of de-registered cars do not end up in the Austrian waste management system. It is expected that a large share of Austrian ELVs are **exported** to countries with less strict technical car inspections.

- **In Finland,** there is an increasing number of ***'ghost vehicles'*** in the national registry as there are vehicles that have been temporarily deregistered by treatment operators without a contract with the PROs. The car is taken out from traffic, but still exists in register. This leads to 'ghost vehicles' in the national registry system: vehicles which have been temporarily deregistered, but most likely dismantled and treated as ELVs. Ghost vehicles may be linked to illegal dismantling (majority of cases), deregistration problems, export (minority of cases).

- in the Netherlands, there is a large problem is the **deregistration** of vehicles for export and then illegal treatment.

As most producers are vehicle importers, it should be possible to track them down via the customs administration. However, it is barely done.

Another option consists in paying treatment operators for the dismantling and depollution operations. However, the difficulty lies in adjusting the premium to market fluctuations:

- in the Netherlands, **premiums paid by the PRO** enable authorised treatment operators to offer consumers money for the take-back of their ELVs. However, the revenues from resale of dismantled car parts can easily exceed premiums; for example, catalytic converters are typically sold on the market for €68, while the maximum premium offered by ARN is €56.

- In Sweden, historically, scrapping premiums were paid to certified dismantlers (€174 per vehicle in 2000). This led to an increase in the number of vehicles scrapped, but over time an increased number of abandoned vehicles. Since 2007, funds are only being allocated for scrapping cars without catalysers, older than 1989 and those vehicles abandoned which have been collected by the municipality.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| **Estimated free-riders** | Low (there are currently no fees) | 23% (increased recently because of an extension of the scope) | No estimation | Low |
| **Idenfication of free-riders** | No specific measures identified | Performed by the French Ministry of Environment, with support from the Environmental Agency and the PRO | First receivers of non-packaging paper and board have to produce audit certificate on a yearly basis | No specific measures identified |
| **Penalties against free-riders** | Financial penalties | Before 2013, non-compliant producers had to pay a tax. Since 2013, the tax is removed and financial penalties for non compliance are applicable | Penalties range from fines to sentence by judge | No information |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | edible | non-edible | | | | | |
| **How many free riders are there?** | No estimate available, but limited to 'niche' importers | | No estimate available, but limited to 'niche' importers | - | No free riders | N/A | |
| **Who is in charge of identifying free riders? How?** | Both PROs and the Environmental Agency | | The Customs of Finland | - | N/A | | When the PROs identify one: they write to the company and inform regional authorities |
| **Which sanctions/penalties are provided against free riders?** | Administrative fines are in place | | Administrative fines are in place | - | No sanction | N/A | |

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| **Estimated free-riders** | Estimated to be low | HH: estimated ~7% of the market C&I: no estimate | HH: 5% C&I: 10% (estimations) | Estimated to be high (around 25%) | Estimated below 2% | Estimated to around 2% (companies putting less than 50 tonnes on the market are exempted) | Estimated to be an important issue. |
| **Identification of free-riders** | Audits by the Lebenminsterium, and also by PROs (on correctness and completeness of data) | Performed by the IPC, with support from PROs | "Autocontrol" by retailers (because they need to comply if their supplier does not). Controls of producers/fillers by the Environment Inspection ; control of retailers by the Trade Inspection | No information | Performed by the Ministry and environmental agency, with support from PROs | Inspections by the tax office (before 2013, they producers paid a packaging tax) | Carried out by the the Environment Agency |
| **Penalties against free-riders** | Financial penalties | | | | | | |

|  | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| **Estimated free-riders** | Not estimated, but probably very few | No estimation | No estimation, probably few on HH EEE | No estimation | No estimation, but low | No estimation | |
| **Identification of free-riders** | Carried out by the Danish EPA, supported by the DPA-System and the PROs | No information | Carried out by the Environmental Agency and the Ministry, with support from PROs | Carried out by the EPA, with support from the WEEE Register (clearinghouse) and PROs | Carried out by the Latvian Administration Fund, with support from PROs and producers | Carried out by the Swedish EPA | No information |
| **Penalties against free-riders** | Producers can be held criminally liable for non-compliance; prison sentence up to two years. Actual fines for free-riders have been up to 1300€, plus the estimated benefits of non-compliance. | Possibilities of fine, but no penalties applied as of 2010 | Non-compliant producers are subject to financial penalties. | Failure to comply with WEEE Regulations results in prosecution. Severe penalties are in place, at least in theory, with a maximum fine of €15 million and/or 10 years imprisonment | A higher tax is set for non-reporting or non-registration | Financial sanctions | Financial penalties |

### 5.5.3 Surveillance of collection and treatment operations

***Who is in charge of monitoring the collection and treatment of waste operations? How?***

| | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
| | The battery treatment operators are monitored by the federal authority and audited by the PROs on a regular basis | Regional governments | N/A | ADEME verifies declarations and coherence in the reporting. PROs also make audits. They target actors for which variations on reporting are unusual. | N/A | Collection points are audited by the regional authorities. National authorities undertake regular control activities to make sure Batrec is fulfilling its legal obligation. |

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| | The Ministry for Environment receives the reports from all actors and has also the task to check the reported quantities. | The local waste authorities have the responsibility to supervise the waste management | Audits are undertaken by the PRO. Until now 400 audits have been undertaken 3 types of penalties (notice of a conditional fine, of enforced compliance and of enforced suspension) can be used against dismantlers and shredders. | Audits are undertaken by the PRO on treatment operators. | Treatment operators can be subject to penalties if they do not fulfil their contractual obligations; penalties are financial and received by the Recycling Fund. | N/A |

The information declared by treatment operators is verified either by the PRO or by public authorities.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | Operators must have a permit ; they can only establish collection for graphic paper waste in cooperation with the producers | Audits are performed by the PRO | Paper waste entreprises report to the PRO | No specific procedure identified |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | edible | non-edible | | | | | |
| | N/A | Direct contact with operators. An external auditer proceeds to a yearly checking. | N/A | BAFA | N/A | The PRO undertakes frequent internal audits + some external audits | Operators have to report to the PRO (volumes & transactions). Annual random audits. |

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| | Performed by the PROs through regular audits of recyclers | | | No information | | A certificate has been developed to ensure reliable data with waste operators. Nedvang performs audits with municipalities and waste operators. | A regulatory accreditation system was introduced for reprocessors and exporters of packaging waste, need to apply through the NWPD |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| | PROs and individual compliers must work only with environmentally approved collection and treatment operators | Producers must organise treatment of WEEE at an authorised facility | PROs must perform regularmonitoring and audits on waste management operators in order to ensure that the legal requirements are met. | PROs perform regular audits of their waste management contractors | Producers must organise treatment of WEEE at an authorised facility | No information | A treatment operator must be an AATF in order to be able to issue evidence notes. Defra is in charge of monitoring AATFs |

## 5.5.4 Surveillance of PROs

***Surveillance of PROs***

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| **Who is in charge of monitoring PROs?** | The Ministry of Environment is the competent authority for issuing permits for the set-up, operation and major changes of the collective systems | - | PIRELY | N/A | | |
| **How?** | N/A | - | PIRELY audits the activity of the PRO. Fines can be up to €500,000 | | | |
| **What?** | N/A | - | N/A | | | |
| **How is public surveillance effectively enforced?** | If the systems do not fulfil their obligations of free take-back, the Ministry of Environment can organise the proper treatment of the ELVs and charge the costs to the responsible system | - | N/A | | | |

The Austrian and Finnish system seem thoroughly monitored, whereas the Dutch, Slovakian and Swedish schemes lack transparency.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | The Finnish Competition and Consumer Authority is responsible for monitoring the legality of competition between the PROs | Authorisation by the French Ministry of the Environment, with a consultation of all relevant stakeholders through the agreement advisory commitee | The PRO is an emanation of the Dutch Ministry for Environment. | Approval by public authorities; enforcement at the local authorities level |

|  | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | edible | non-edible | | | | | |
| **Who is in charge of monitoring PROs?** | Regional authorities are in charge of monitoring | | Not clear, L&T statut is not clear | - | Oversight authority is not clear | The Portuguese Environmental Agency. | Regional authorities orders an annual audit by an independent body. |
| **How?** | The Flemish Waste Agency has 4 inspection officers (for all wastes.) | | N/A | - | N/A | Auditers. | Regional authorities orders an annual audit by an independent body. |
| **What is being monitored?** | Finances from PROs are audited by Deloitte. Data regarding quantities declared by oil producers are audited by KPMG | | N/A | - | N/A | Quality and environmental standards | finance, management, |
| **How is public surveillance effectively enforced?** | An external auditer is commissionned by the PROs' board. No real sanction. | | N/A | - | Public information is seriously lacking | N/A | Licence delivery or withdrawal in each region |

The Belgian system seems thoroughly monitored, whereas the Finnish and Italian schemes lack transparency. In general, public authorities lack enforcement means as licence revocation is not very realistic. Indeed, if the PRO's licence is not renovated, the MS will have to set up another organisation to achieve targets. In Germany, although there is no PRO, there are penalties for non-compliant market participants: fines and licence revocation.

| | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
| **Who is in charge of monitoring PROs?** | The coordination unit | Regional governments | DPA for the Ministry of Environment | In 2012, a consultative commission was established in order to control the PROs' actions. | N/A | The PRO is under the control of the federal government |
| **How?** | 6 % of the total system costs are control costs | Every year 1/3 of the declarations of the producers / importers is audited. ca 1,5% of spent budget | DPA-System is managed by a board consisting of 7 members appointed by the Minister for the Environment | ADEME audits between 15 and 20 producers every year | N/A | N/A |
| **What is being monitored?** | N/A | the PRO contribution, data reported, waste identification forms and other required documents with waste operators, correct storage of waste | N/A | Quantities | no separate balances for portable and industrial batteries are published | N/A |
| **How is public surveillance effectively enforced?** | N/A | Administrative and correctional fines can be imposed in case of non-compliance. The level of the fine is determined case by case | If the member's reports to Elretur are not in conformity with the auditor's review, the member has to defray the costs of the audit | If corrections are not made within a year, the non-compliant producer could have to complete its financial participation in accordance with the correct quantity reported on the last three years. | N/A | |

In the case of automotive batteries in Belgium, surveillance costs up to 23% of its own expenses are assumed by the PRO.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| | Regular audits by the Federal Accounting Office | Authorisation and regular audits by the IPC | Authorised by the Ministry of Environment | No information | Authorised by the Ministry for a 6 year period | No information | Audits on accuracy of data provided by the NWPD |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
|  | DPA-System carries out audits on the information provided by PROs and individual compliers. It acts as a clearinghouse and defines the market shares and collection obligations of the schemes. | Collective schemes must be approved by the national implementation agency. The agency can force PROs to cooperate, although there is no clearinghouse. | The PROs and the clearinghouse (OCAD3E) must be approved by the public authorities (for a 6-year period). | All producers must be registered with the WEEE Register (clearinghouse), in charge of verifying compliance and determine market shares. | Requirements for receiving an authorisation as a PRO include the ability to fulfil certain tasks, including collection and treatment of WEEE, as well as sufficient capital and reserves aligned with the number of producers which are members | The Swedish EPA is in charge of control and performs regular audits | PCSs must seek approval from the EA, SEPA or NIEA. |

***PRO's status***

| | AT | BE | DK | FR | NL | CH |
|---|---|---|---|---|---|---|
| **Is the PRO's profit-based or not-for-profit?** | 3 are non-profit. 1 is for-profit | Non-profit | Elretur is non-profit. Others: no clear trend | Non-profit | | |

Most of battery PROs are non-profit, but there are also for-profit organisations (in Austria and Denmark).

In none of the cases studied are waste management operators allowed to act as PROs.

In Belgium, in addition to the producers, other actors are allowed to compose the PROs' board, although without any voting power: association of retailers, association of automotive distribution, regional authorities.

In France, all decision-making processes are conducted by a consultative commission composed of representatives of the concerned sector (Ministries, ADEME, local authorities, producers, treatment operators, and environmental protection and consumer associations).

Stibat, in the Netherlands, is a foundation of and monitored by the battery producers.

| | AT | DE | FI | NL | SK | SE |
|---|---|---|---|---|---|---|
| **Is the PRO's profit-based or not-for-profit?** | Not for profit | - | N/A | Not for profit | | N/A |
| **Which type of actors are allowed to compose the PRO's board?** | PRO n°1 is a limited liability company representing 10 importers and 2 producers (16 car brands). PRO n°2 is a liability company, which is owned by the Austrian shredder sector and acts as a PRO (38 car brands). | - | The key stakeholders in the PRO are vehicle importers | 4 industry associations | The Recycling Fund is overseen by two boards and a Director. Stakeholders involved in governance include government, industry and NGOs. | Key stakeholders in BilRetur are producers and importers of vehicles |

Most PROs for ELVs are **not-for-profit** entities.

In most cases, collection and treatment operators are not allowed to act as PROs. **Austria** is an exception: six shredders partly own one of the two PROs, together with the car producers.

In most cases, only producers compose the PRO's board. In some cases, government officials are also allowed to participate (sometimes with a mere observatory status).

**In Slovakia**, the government-run PRO has a Board composed by a wide range of actors, including representatives from government, industry and NGOs.

**In Sweden**, the governance structure of BilRetur is not clear.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| **Is the PRO's profit-based or not-for-profit?** | Only producers are allowed to form a PRO. The organisation can be for profit and sell other services and products. | Required to be not for profit and owned by the obliged industry | Non-profit | No specific requirement identified. The only PRO is non for profit and owned by paper producers. |
| **Which type of actors are allowed to compose the PRO's board?** | | | | |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| **Is the PRO's profit-based or not-for-profit?** | Non-profit | | For profit | - | For profit | Non-profit | |
| **Which type of actors are allowed to compose the PRO's board?** | Producers and professional users. Government officials are invited, but no voting right. | | - | | Producers National Government Ministries 2 experts | Producers, through 2 main associations | Only producers |

Both models exist among oil PROs: for-profit and non-for-profit entities.

In most cases, only producers compose the PRO's board. In some cases, government officials are also allowed to participate (sometimes with a mere observatory status).

In most cases, waste management operators are not allowed to act as PRO. In Germany, there is no PRO for waste oils. In Finland, the operating agent in the system is not precisely a PRO, as it is rather a government-run scheme outsourced to a private company.

|  | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| **Is the PRO's profit-based or not-for-profit?** | No specific requirement. The largest PRO (ARA) is a stock corporation owned by obliged industries | Packaging PROs are required to be non-profit organisations and focus on one statutory goal (take back). No requirement on ownership, existing PROs are owned by obliged companies | Required to be not for profit and owned by the obliged industry | No specific requirement. Most PROs are profit organisations, and not necessarily owned by the obliged industry | Required to be not-for-profit and owned by the obliged industry | No specific requirement identified, the only existing PRO is non-for –profit and owned by the obliged industries | No specific requirements |
| **Which type of actors are allowed to compose the PRO's board?** | | | | | | | |

|  | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| **Is the PRO's profit-based or not-for-profit?** | No specific requirements, PROs differ widely among them in relation to purpose and corporate form. | No specific requirements on the ownership or financial conditions of the system | PROs must be not-for-profit and owned by obliged companies. They cannot finance with the producers fees other activities than those set in their approval. | Existing PROs are not-for-profit, owned by the obliged companies. | All PROs for WEEE in Latvia are limited liability corporations; all are for profit. Therefore standard rules about limited liability corporations apply for governance and decision making. | No specific requirement identified | No specific requirement, very open market |
| **Which type of actors are allowed to compose the PRO's board?** | | | | | | | |

***Is there any multi-stakeholder dialogue procedure?***

In Austria: At the level of the 'coordination unit' the PROs have to cooperate, in order to agree on the infrastructure costs for municipalities or the PROs' activities.

In Belgium, for portable batteries: A representative of each regional administration and one of the federal administration for the environment are invited to the Board of Directors of BEBAT (but without voting power). BEBAT organises 4 times a year a monitoring commission with the 3 regional governments to discuss results and arrangements.

In Belgium, for automotive batteries: RECYBAT also invites the regional governments for its meetings.

In Denmark: *No dialogue procedure was reported*.

In France: In 2012, an operational policy committee was created to oversee the system. It is composed of members of the collective schemes and of the producers.

In the Netherlands: Stibat collaborates with Auto Recycling Nederland (ARN) a PRO for the collection of end-of-life vehicles and automotive batteries.

In Switzerland: *No dialogue procedure was reported*

No institutionalised dialogue procedure was reported.

| | FI | FR | NL | SE |
|---|---|---|---|---|
| | No specific dialogue procedure identified | An agreement advisory commission ("commission consultative d'agrément") composed of members of the three ministries and of graphic papers related sector members (including environmental and consumers associations) meets every trimester to pilot the activity and agree on general orientations of the PRO. | No specific dialogue procedure identified | |

| | BE | | FI | DE | IT | PT | ES |
|---|---|---|---|---|---|---|---|
| | *edible* | *non-edible* | | | | | |
| | No dialogue procedure | | | | No dialogue procedure, but the PRO's board composition is varied. | No dialogue procedure | |

In most cases, no dialogue procedure has been institutionalized.

| | AT | BE | CZ | DE | FR | NL | UK |
|---|---|---|---|---|---|---|---|
| | No specific dialogue procedure identified | Consultation by the Interregional packaging commission, through the 'packaging platform' and bilateral consultation of other stakeholders | No specific dialogue procedure identified | | Consultation committee, regrouping all involved stakeholders (producers, retailers, PROs, local authorities, consumers, environmental NGOs) + 2 mandatory operational committees to be set up by the PRO | No specific dialogue procedure identified | |

| | DK | FI | FR | IE | LV | SE | UK |
|---|---|---|---|---|---|---|---|
| | No dialogue procedure identified | | Consultation committee, regrouping all involved stakeholders (producers, retailers, PROs, local authorities, consumers, environmental NGOs) | WEEE monitoring group, chaired by the Department of Environment, Community and Local Governement. The EPA engages regularly various stakeholders and works closely with the registration body and PROs | No dialogue procedure identified | No dialogue procedure identified, bilateral agreements between PROs, PROs and local authorities, etc. | No dialogue procedure identified |

## 5.6 Recommendations

### *Initial version of Statement n°1*

**Statement n°1: The EPR definition, scope and objectives should be clarified**

The concept of EPR is currently defined in general terms in European legislation (cf. art. 8 of the Waste Framework Directive 2008/98[81]). Differences and difficulties in terms of implementation arise from the varied interpretation in terms of scope, objectives and exact definition. The concept of EPR, along with other key definitions (see Statement n°9), needs to be clarified, and the fundamental goals of EPR need to be stated, as a basis for its definition, for example:

EPR aims at internalising environmental externalities (in this case, the internalisation of end-of-life management costs according to high environmental standards), and should provide an incentive for producers to take into account environmental considerations along the products' life, from the design phase to their end-of-life.

As such, EPR aims at supporting the implementation of the European Waste Hierarchy, and therefore at increasing, by order of priority, prevention, reuse, recycling and energy recovery.

EPR is also a financial instrument, which can support the establishment and the operational implementation of sustainable products and waste management schemes in line with the waste hierarchy.

Clear and measurable targets in terms of prevention, re-use or recycling aiming at least at meeting the existing EU quantitative targets should be defined as objectives for the EPR schemes.

In addition to this common and priority mandate, the inclusion of additional objectives is possible, such as economic objectives (sustaining a national or European recycling industry), environmental objectives (improving eco-design of products in general), or social objectives (supporting social economy).[82]

[81] "*In order to strengthen the re-use and the prevention, recycling and other recovery of waste, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility. Such measures may include an acceptance of returned products and of the waste that remains after those products have been used, as well as the subsequent management of the waste and financial responsibility for such activities. These measures may include the obligation to provide publicly available information as to the extent to which the product is re-usable and recyclable.*"

[82] NB: for these two objectives to be clearly coherent, an effective EPR policy should be associated with other economic instruments, such as high landfill taxes.

## *Stakeholders' feedback*

More than half of the respondents agreed that the EPR definition, scope and objectives should be clarified. Some examples of key principles that should be included in the new definition were given. For example, some PROs underlined the necessity of including in the definition not only economic objectives but also strategic, social and additional environmental targets such as improving eco-design. On the other hand, most of the industry federations did not support the inclusion of additional objectives. They believed that the basic mission consisting in collecting separately, sorting with best possible quality and recycling/recovering energy in view of bringing back materials/energy into the economic cycle, should remain the core of EPR schemes. Some industries proposed to include in the Packaging and Packaging Waste Directive (PPWD) a harmonised definition of EPR for packaging waste, for example by using the current OECD definition.

### Experts & NGOs

Generally agree.

For waste streams such as WEEE, in order to promote preparation for reuse activities PROs must grant access to the waste stream/collection points they manage directly/indirectly by accredited/approved reuse centres in order to separate potentially reusable products / materials.

### Industry federation

They mostly agree that the definition, scope and objectives should be clarified but they are mitigated on how they should be clarified.

There are some mitigating answers regarding some bullet points.

Regarding **the definition**, packaging industries recommend that EPR is defined in the revised PPWD as "an environmental policy approach by which a producer's responsibility for a packaging put on the EU market is extended to its entire life cycle, including recycling and recovery at their post-consumer stage".

**Product design** goes beyond basic mission of EPR and the required material neutrality is put at risk. The topic of design for recycling **(DFR) is complex** and only makes sense when producers have access to their own waste.

It was also brought to our attention that **EPR is not always a financial instrument**. The third bullet point should allow that EPR shifts responsibility (physically and/or economically; fully or partially) upstream toward the producer and away from municipalities.

Some do not support the idea of **targets for prevention or re-use.** Others argue that not all targets from the Waste Framework Directive are associated with EPR Schemes.

Nevertheless, regarding the **"clear and measurable targets"**, some industries would welcome a realistic and pragmatic approach which allows different speed in reaching the targets, such as a **broader use of interim targets** in particular for smaller Member States and Member States

where for example economic conditions, the population density or other key criteria would justify a longer time span to reach some of the targets.

Some do not support the inclusion of **additional economic, environmental and social objectives.** They argue that this is not part of the definition of EPR. They see it as an extra burden for the industry. Others welcome it.

Two mentioned that what is currently lacking in the EPR definition **is a clear reference to the freedom of choice** of the obligated industry of how to comply with EPR at lowest sustainable cost. This may be individually at company level, or collectively through joining a compliance scheme of choice . EPR cannot be seen as an obligation to join a prevailing collective scheme or as a blank check for local authorities to demand money from industry to finance waste management operations.

It is suggested that **minimum rules** for all EPR schemes should cover scope: geographical scope, types of packaging material to be covered.

### PROs

They generally agree with the statement.

**Proposal to reformulate:**

Concerning the waste prevention and reuse, I am not sure EPR is the best tool to support this strategy. I would prefer the following statement from the EC: "EPR aims at creating an efficient European industry to eliminate pollutants and to recycle critical raw materials. Internalising the costs of part of the return logistic, of depollution and of recycling in the cost of the product will provide an incentive for producers to take into account environmental consideration for the end of life of its products. The collective effort to collect and to recycle product waste will generate volume and motivate creativity and investments in a best in class, efficient European recycling industry."

Impossible to measure waste prevention?

Regarding the waste hierarchy, the setting of fixed prevention or reuse targets does not seem advisable or useful. As most EPR schemes are financed through fees based on material and weight, and as raw materials prices have increased dramatically, there already is sufficient incentive for industry to reduce materials use in packaging as long as this does not impact the functionality of the packaging. The focus should be put on enforcing the waste hierarchy with regard to the priority of recycling over recovery, and of recovery over disposal. Following the ideas of the European innovation partnership on raw materials, secondary raw materials should be kept within Europe, sustaining a national and European recycling industry.

### Public authorities

Les autorités françaises considèrent comme indispensable que d'autres principes figurent dans la définition de la REP :

- la nécessaire transition vers l'écoconception pour les produits entrant dans le champ des filières REP ;

- le principe de couverture territoriale universelle (la collecte et la gestion des déchets ne doivent pas être limitées aux seules zones « rentables ») ;

- le fait que les dispositifs REP doivent pouvoir être construits en prenant en compte le « principe de proximité », dont la portée doit être précisée : il s'agit de privilégier, de manière adaptée à chaque filière, la valorisation à proximité du lieu de production des déchets.

For waste streams such as WEEE, in order to **promote preparation for reuse** activities PROs must grant access to the waste stream/collection points they manage directly/indirectly by accredited/approved reuse centres in order to separate potentially reusable products / materials.

**Treatment operators**

Some argue that additional economic initiatives (e.g. supporting recycling industry), eco-design or social objectives (i.e. local jobs) are not a part of EPR.

Like packaging industries, they believe that the definition of EPR should be clarified in the PPWD.

Two treatment operators believe that the definition, scope and objectives of EPR should be more market-orientated and take into consideration that a circular economy must be based on a business orientated approach.

Some disagree with the targets for prevention and reuse.

## *Initial version of Statement n°2*

**Statement n°2: Responsibilities should be shared and clearly defined along the whole supply chain**

Even if EPR focuses on the responsibility of the producers/importers[83] for the products they place on the market, many actors have a share of responsibility in reaching the objectives of the scheme, starting with the consumer (individuals or companies, as the final user of a product, and as the actor who has to discard this product through the right channel – e.g. separate collection), local authorities (as responsible for municipal waste management, and more generally for the environmental quality of their territory), waste management industry (as private waste management operators investing in infrastructure and R&D in order to improve collection, sorting and recycling processes), etc.

Therefore, an EPR scheme should define the responsibilities (organisational and/or financial) of all stakeholders to the extent they play an important role in the system.

[83] In the present document, the word "producers" has to be understood in the sense of article 8 of the WFD 2008/98

Again, there is no "one size fits all" solution when sharing the responsibility, but the individual responsibilities of all actors should be clearly defined in light of this general principle.

The respective roles (and related financial and/or operational obligations) of the following actors are concerned:

- producers (obliged industry, responsible for the products they put on the market, as well as the Producer Responsibility Organisations acting on their behalf);
- national authorities (notably responsible of implementing the EU legislation, reaching the EU legal targets, enforcing and monitoring the implementation of EPR principle);
- consumers/citizens participating in the collection schemes (e.g. obligation to participate to the separate collection schemes, establishment of PAYT systems, etc.);
- local authorities (public waste operators) in charge of some of the collection operations, achieving environmental objectives in direct with citizens-sorters/tax-payers;
- private waste operators and recycling industry, can be in charge of different waste management steps.

In addition, **multi-stakeholders platforms should be encouraged to ensure dialogue among stakeholders** with the involvement of representatives of PROs, obliged companies (producers, importers, retailers), public authorities (national and regional/local), waste management industries, consumers, and environmental NGOs.

This dialogue structure should aim at:

- Increasing transparency of the systems, by sharing information along the supply chain, as far as possible without any infringement of competition law;
- Improving the sharing of responsibilities and surveillance, for example by consulting stakeholders on the operational objectives of the systems, the approval of collective schemes, etc. ;
- Coordinating efforts (in terms of communication and R&D in particular) in order to optimise the performance and cost-efficiency of the system

## *Stakeholders' feedback*

67% of the stakeholders agreed that responsibilities should be shared and clearly defined along the whole supply chain. However, some industries expressed their concern with regards to the potential practical and financial implications of this statement. Some treatment and waste management operators suggested including in the Packaging and Packaging Waste Directive a provision which requires Member States to assign roles and responsibilities both to public authorities and to economic operators within the concept of shared responsibility for packaging waste management. PROs had different suggestions regarding the ways in which the areas of responsibilities are set between stakeholders. One PRO suggested adding waste reprocessors and exporters to the stakeholders list. Some local authorities fear that a very broad allocation of

roles would create more confusion as national principles concerning the shifting of responsibility from public authorities to private entities differ from one MS to another.

### Experts & NGOs

Agree.

### Industry federation

**Generally they agree.** There are few mitigating comments on the roles that EPR actors should play.

Some argued that **industries** must have the ability to control the costs and performance of the EPR systems (PRO) put in place to meet their obligations. The concept of shared responsibilities is too vaguely defined and may lead to conflicts around cost control and objectives.

They also propose to include **the retail sector,** which also contributes to the collection of certain waste streams.

One industry federation believes that PAYT schemes and litter fines should be promoted.

### PROs

**Generally agree.**

Some made some remarks about some missing actors such as distributors, entreprises and administrations are key players missing in the list above.

Others proposed the roles that actors should play:

**National authorities** should define the regulations and operational requirements for producers and PRO's, for waste operators and for all owners of EPR waste. They insure that those requirements are met by all.

**Local Authorities** make available (if required for a fee) EPR waste under the responsibility of producers. Waste operators engage in a contractual relationship with producers or PRO's to process EPR waste according to the National Authorities requirements. All EPR waste should be treated according to the same requirements.

**Consumers,** enterprises, administrations etc. discard of their EPR waste responsibly**. Producers and PRO** are responsible to transport and process EPR waste handed over responsibly by consumers, enterprises, etc. according to the requirements set by the authorities. They are free to choose the best solution to that end.

**Member States** are responsible of reaching the national targets and ensuring the good enforcement and level of control of the legislation (e.g. free riders producers, illegal practices, illegal export)

**Producers,** distributors and municipalities must well inform holders of WEEE of their separate collection.

**Distributors** (including distance selling) must accept for free returns "1 for 1" and "1 for 0" for small products.

**Producers** must be able to ensure that WEEE is managed in an environmentally-sound way, including the proper de-pollution and recycling of appliances

### Public authorities

Agree.

Cities should continue to be responsible for collecting household waste, since:

• this is a service of general interest

• given their understanding of the local context, cities are best placed to organise efficient collection systems, such as integrating them into overall traffic management

• as the level of government closest to citizens, cities can best communicate issues such as waste separation

### Treatment operators

**Generally agree.**

**Operators are key actors** and they should be better included in reflexions.

**PROs** do not have the same responsibility as their members: they don't bear the responsibility to manage waste as producers of products under an EPR regulation; they only have the obligation to organize such management, in accordance with EPR principles, in particular, favoring recycling (although not at any cost). Yet, to do so properly as well as to allow producers to comply with their EPR the best they can, PROs should be entitled to make decisions with municipalities upon the system's organisation and its costs, starting with selective waste collection, residual waste being outside EPR's scope. Lastly, we suggest that the municipalities have to make public actual costs they incur for the service they provide. This transparence, made compulsory by law, will help optimizing the system.

**Sweden's case:**

SRI insists not to regard **local authorities as** public waste operators. According to them, local authorities have certain responsibilities, BUT being an operator on the market is something different.

**The municipalities** should have no exclusive right to the collection market, but be an important actor in cooperating with all other actors on the market. When municipalities take an operator role, they very often are not cooperative with the other actors in Sweden, but rather compete instead.

In Sweden the most of the collection of EPR material is collected by private companies. These companies are meeting hard and unfair competition from municipalities. The local public waste operators mix the fees on their monopoly market (household waste) with collection on EPR

market which is an open market. The local waste operators, often in the form of a municipality owned company, can set any fees to the consumers. At the same time these companies are competing with the waste and recycling companies on the commercial and industrial waste market. **The unfair competition from municipalities and municipality owned companies is a huge problem** and a hinder for the private recycling companies, often SMEs, to develop their business on the market.

One of the most important aspects is to **separate the two municipality roles as authority and waste operator.** The text reflects too much of a monopoly thinking and not a market orientation. The cost efficiency of a system can be measured in many ways along the whole value chain. It is not reflected here.

## *Initial version of Statement n°3*

**Statement n°5: In line with the polluter pays principle, the design and implementation of an EPR should make sure that the full costs related to the end of life of products are covered.**

In line with the existing European legislation promoting the polluter pays principle, and taking into account Statement n°2 (Shared responsibilities), the full costs should be taken into account when designing and implementing an EPR scheme.

The establishment of this full cost should cover all types of costs, for example:

- Collection, transport and treatment costs for separately collected waste;
- Revenue from the sales of the materials
- Collection, transport and treatment costs for non-separately collected waste covered by EPR (e.g. waste covered by EPR collected with mixed municipal waste);
- Cost for public communication and awareness raising (on waste prevention, separate collection, etc.);
- Costs for litter prevention and management;
- Costs for the appropriate control of the system (including auditing, measures against free riders, etc. see statement 9)
- Administrative costs, i.e. costs linked to the running of PROs

## *Stakeholders' feedback*

Depending on the nature of the stakeholder, there are **divergent opinions** with regards to the establishment of a full cost principle for end-of-life products.

First of all, some PROs and industry representatives argued that EPR is **not an implementation of the polluter-pays-principle**.

They also have **contrasted views on the full cost responsibility of an EPR**:

- Some PROs implied that shared responsibility implies shared financial and operational responsibility. Therefore, according to them, a **full cost principle** should **only** be **implemented if it is combined with full organisational responsibility**.
- Several industries argued that producers should **not be compelled to cover costs for which there is no transparency** nor that they can't control.
- Some local and regional authorities proposed to integrate the full cost recovery principle **as a minimum legal requirement for EPR** in the Waste Framework Directive while others suggest better defining **what „full cost"** is being considered.

### Experts & NGOs

NGOs mainly agree, although some stakeholder suggests that it would be more efficient to make producers legally responsible to produce reusable and recyclable products.

### Industry federation

There is **no clear consensus** on this statement among industry federations.

Firstly, some stakeholders argue that **EPR is not an implementation of the polluter-pays-principle**, as the end-polluter is the individual consumer.

Some suggest that the obliged producers should assume the "**full *net* cost**", in order to take into account reselling revenues. It should be implemented in all Directives **as it is defined in the Battery Directive:** Obliged Industry is prepared to cover the lowest sustainable cost to meet the legal targets, which covers the collection and sorting costs minus the secondary material value.

Many claim that the industry should not carry the full burden and that end-of-life costs should be **shared equitably by all stakeholders.**

Furthermore, they argue that the list of costs covered should be **restrictive**, as it is consumers who will ultimately bear the cost. The full net cost principle **should apply to the EPR legal obligations** (collection & recycling). Additional costs deriving from collection of mixed municipal waste, littering, waste prevention should be addressed by dissuasive public sanctions (fines) and education programmes.

However, compliance schemes need to collaborate with municipalities to reduce residual waste in the separately collected fraction via **financial incentives**.

It is suggested that **minimum rules** for all EPR schemes should cover the full net cost approach: full collection costs minus market value of the material, as currently stipulated in the Batteries Directive.

*Statement 5 could be merged with the 2 other statement on costs (n°6 and n°7).*

### PROs

**The appreciation of this statement by PROs is mitigated**.

Some stakeholders estimate that the **national** legislation is more appropriate to set up the scope of the financial responsibility that each system should bear.

**Two types of cost bearing are rejected** by a majority of PROs:

- Financing the costs for **non-separately collected waste** would not imply incentive for municipalities to promote selective sorting. It would lead to a negation of the polluter-pays principle. On the other side, PROs are not asking for financial contribution of municipalities for residual waste in the separate collection.

**- Littering**: industry cannot be blamed for it. A **shared responsibility** needs to be applied.

At any rate, some stakeholders highlight that care should be taken to **avoid situations where consumers may pay twice**: once when they buy the product and once when they pay for waste collection.

### Public authorities

**Public authorities mainly agree** with the Statement. They show their attachment to the full cost recovery principle, and to the polluters-pay principle. **They tend to include many costs** in what must be borne by producers. According to them, the producers' responsibility should minimally cover the following costs:
- collection, transport & treatment of separated flows,
- communication
- control, auditing and « free riders » identification.
- PRO administration.

It could also include: prevention and administration costs. However it would be necessary to define **what is an "adequate" level** for prevention and administrative costs?

As for littering and waste collected indiscriminately, they find the principle interesting but application modalities remain uncertain. Some stakeholder suggests a system of "**lump-sums compensations**" based on an objective real costs calculation.

### Treatment operators

The operators' view of this statement are mitigated and converge with PROs and Industries.

According to them, **shared responsibility** means shared *financial and operational* responsibility. A practical argument is that full costs coverage does not leave room for optimization when **municipalities decide alone** of the organization.

**They also argue that residual waste** should remain the operational and financial responsibility of the waste holder i.e. municipalities. They agree with the funding of awareness raising **campaigns** by EPR, in the condition these campaigns are designed by EPR compliance schemes.

They also argue that **the polluter-pays and the EPR principles are not the one and same principle**. The producer of the waste bears EPR which is a responsibility of a different nature.

Finally, one operator explained that the particular issue of **offsetting costs with "revenue from sales"** needs clarification, as it de facto figures in the calculation of a **reference cost** (*Statement 6*). Whether or not revenue from sales is shared depends on the type of contract and services provided. Offsetting should not be listed as a hard-and-fast rule.

## *Initial version of Statement n°4*

**Statement n°7: The fees paid by a producer to a collective scheme should reflect the true end-of-life management costs of his products.**

Today, through the development of collective schemes for obliged companies to fulfil their EPR requirements, there is a **risk of "averaging"** of the costs among producers, thereby **disincentivising** individual efforts towards **eco-design**.

Whereas the **technical specifications** of such a modulation of fees paid by producers are yet to be defined, there should be a **clear requirement** for EPR schemes to set up **differentiated fees** aiming at **reflecting** as far as possible the real costs of end-of-life management of products, based on the strict **application of the waste hierarchy**, i.e. with a clear priority on prevention, reuse and recycling.

These costs should be **established by independent third parties and regularly updated**.

Furthermore, this modulation should be made **explicit and transparent, in order to guide consumers' choices.**

## *Stakeholders' feedback*

**Almost half of the respondents believed that it would be very interesting to differentiate the fee** paid by producers reflecting the real end-of-life costs, and thereby create an incentive for eco-design.

Some PROs agreed with the fact that there is a clear need of modulation of the fees **in relationship with the waste hierarchy**.

However, **the majority of industries identified some challenges** in the implementation of such a concept such as:

- The enormous and recurring **effort** to establish such a cost;
- The determination of the **recyclability** of a product and the definition of real end-of-life costs for different product types ;

The implementation of an independent **third party** establishing true costs.

### Experts & NGOs

NGOs are **all in favour** of this Statement.

Some request that the term "**preparation for reuse**" is also included when referring to the EU waste hierarchy.

NGOs highlight the role of such an economic instrument to create incentives for **closed loop sytems** and eco-design. They further stipulate that modulation/differentiation in producers contribution should be **required by law with a minimum modulation rate** (e.g 25%). More important: Theses minimum modulation criteria should be **established at the EU level**, as European/worlwide manufacturers can't optimise their design for 28 different set of criteria!

Besides, such criteria should be **reflected in treatment and recycling standards** to make sure design efforts by producers are not implemented in vain.

**Chemicals in products should be particularly addressed, as today there is no feedback loop with chemical industry**: only manufacturers using chemicals are liable, not the first placer on the market of chemicals, which creates a bad legacy for end of life operators

### Industry federation

Industrials are either **mitigated or in favour** of this Statement. Many of them agree that EPR fee structures should reflect each material's true costs/income in line with the principle of internalising environmental costs. They acknowledge that **resource efficiency and eco-design are not rewarded** in collective arrangements.

However, some warn against the important and recurring effort needed to determine theses costs. Other simply state that it is impossible to implement (*although it works in a few countries*). Some of them also argue that EPR should not drive eco-design developments.

Some argue that, in order to incentivise high recyclability, it is sufficient to apply **a full net cost approach** at the collective scheme scale: the PRO covers the full operational costs and the resale value is deducted. By providing high quality and fully recyclable material, producers can reduce their overall fees.

They further argue that this principle should be combined with a **transparent cost and fee structure**. This would encourage reduction of weight (prevention) and increase in recyclability.

Some are sceptical about the '**independent third parties'**: "*who would that be?*".

*A few stakeholders remarked that this Statement is **in conflict with Statement 6**, which refers to a fixed reference cost as the basis for individual financial contributions: "Is there a need for a 'reference cost'? If the 'true cost' reflects the objectives & obligations of a specific waste legislation throughout the value chain, this 'true cost' (see statement 5) should be the 'reference cost' for any stakeholders".*

### PROs

Overall, PROs are mitigated about this Statement.

Some request that **complex fee structures be avoided**. For them, averaging is an acceptable compromise between equity and administrative burden... They also argue that end-of-life management costs also depend on **the *collection* system** (and not only on the *recycling* devices).

Therefore, producers should not have to fund the inefficiency of a system over which they have no control.

They further doubt about the usefulness of this measure to guide consumers' choice at purchasing. Even PROs who are in favour admit that **the eco-design incitation is tenuous** (because of the time lag between design decision and the end-of-life signal coming from one national market only). But it can have an effect on marketing.

Those who are in favour see it as a **fair approach**: those who implement eco-design process to ease recycling effort should be rewarded. They suggest to get a consensus on recyclability evaluation criteria at first. They nevertheless admit that fees modulation **visibility to consumers may be hard to put in place** due to the lack of difference in absolute costs (although it may be significant in relative terms).

There is a quite unanimous **rejection of the 'independent third party' (**"*If PROs would lose (even partly) control over their revenues by not fixing the fees, their financial balance could not be ensured*"). Some argue that PROs should ultimately decide, as long as they document in a transparent manner the real costs. Others request that there is a participation of stakeholders when fixing the fees.

Some suggest that prevention and reuse can be well achieved thanks to EPR systems through a **bonus-penalty** fee scale. They further suggest that producers' fees should be fixed **by material** and **taking into account the cost and the performance of recycling *only***.

Guidelines on how to modulate fees in order to apply waste hierarchy option would be welcome.

### Public authorities

Public authorities are mostly in favour of this Statement.

Some authorities recommend that these criteria should be **limited in number, easy to monitor and periodically revised** (to remain incentivizing). A study about such criterion for each stream, at the EU level, would be welcome.

Some even suggest that the EC should introduce **compulsory measures**, targeting the start of the life-cycle of products but with a strong impact on the whole life of the product.

However, other stakeholders warn about the **complexity**: calculating the **lifecycle** environmental cost of a product is very complex. Even calculating the end-of-life management costs of a product alone can be difficult. And there are too many different products…

### Treatment operators

Operators are rather mitigated.

They may agree on the principle of a link between eco-design and environmental fees, but believe it would be complicated to structure into the fees (essentially as an offset), apply and to monitor.

Those who oppose it argue that it makes the market rules very complicated (especially with fees decided by a third party). They indicate that it applies mainly to household collection (for commercial collection there is often no fee).

There was a remark about the term "transparent" in the last sentence (misunderstanding).

## *Initial version of Statement n°5*

**Statement n°5: Notwithstanding the way competition takes place, a clear and stable framework is necessary in order to ensure fair competition, with sufficient control and equal rules for all, supported by enforcement measures (including sanctions) and transparency.**

Generally speaking, there are today two broad models of management within a collective Producer Responsibility Scheme:

- **Single Producer Responsibility Organisation,** owned by the obliged companies: competition is organised by the PRO (through public call for tenders) at the operational level (waste collection, sorting or/and treatment operations and sales of the recycled materials as well as communication campaigns related to the objectives of the PRO);
- **Several competing PROs,** privately owned (by the obliged companies or other entities), among which the obliged companies are free to choose: competition exists at the level of the PROs.

Based on available data and feedback, although advantages and drawbacks of each system have been identified, there is **no strong evidence that one model is more effective** (in reaching the targets) **or more efficient** (in reaching the targets at the lowest costs) **than the other**.

In case competition exists or arises among several PROs, actors should be enabled to **compete fairly, within a clear and stable framework,** thorough control and equal rules for all, realistic enforcement measures in case of irregularities and transparency. In case of single producer responsibility organisation, it is essential to ensure a strong public control so that the PRO does not take advantage of his dominant position.

More generally, competition issues can arise **at the level of**:

- **Producers,** i.e. PROs can be used by established producers to erect barriers for new market entrants;
- **Collection,** i.e. economies of density make it optimal to have a single collection system which needs to be open to competing PROs ;
- **Treatment,** i.e. there may be issues when PROs become operators of recycling facilities;
- **Facilitation,** i.e. abuse of dominant position in the role that PROs play as service providers to producers (facilitation of compliance of producers with their obligations);

A number of **possible recommendations** emerge from this:

- **Ensure equal treatment of all concerned producers,** i.e. by requiring that producers have access to PRO membership if they so wish;
- When there is a single collection infrastructure, **ensure access to this by competitors,** similar as network access in the railway sector;
- When PROs expand beyond their role as facilitators and become operators of collection or treatment, ensure strict separation of these activities.

In any case, it is important that adequate regulation and administrative capacity is in place to ensure that no anti-competitive behaviours emerges.

## *Stakeholders' feedback*

The majority of the stakeholders also **agree** on the fact that, a clear and stable framework is necessary, in order to ensure fair competition between PROs.

Stakeholders have **contrasted views on the way competition should take place,** depending on each waste stream and its configuration. For example, some PROs believe that a competing model will induce several drawbacks such as: conflicts of interests and preventing costs optimisation.

Therefore, **in case of competition between PROs,** there needs to be strong guidance and minimal common provisions in place to ensure fair competition, prevent opacity and ensure that PROs do not have different price conditions to some of their customers.

Packaging industries illustrated Germany as a good example where competition between operators plays at each of the three inter-related markets: collection, sorting and recycling.

### Experts & NGOs

**NGOs** agree with the statement and suggest that a maximum number of PROs for a same waste stream should be introduced.

### Industry federation

**INDUSTRY FEDERATIONS** mainly agree with the statement.

Legislation should allow the option to choose for individual or collective solutions.

Competition should play at each of the **three inter-related markets** (collection, sorting, recycling) through transparent tenders.

For not-for-profit PROs, a **full cost transparency** should prevail. Profit-based PROs, should be encouraged to provide voluntarily maximum transparency to their customers (the publication of their yearly balance sheets is insufficient) and have the legal obligation to offer the same conditions to all customers (be they large or SMEs).

It is suggested that **minimum rules** for all EPR schemes should cover areas such as:

- scope (geographical scope, types of packaging material to be covered),

- full net cost approach (i.e. full collection costs minus market value of the material, as currently stipulated in the Batteries Directive),

- transparency (material flows, cost, tendering procedures),

- consumer information, monitoring, reporting and audits, and financial solidity.

### PROs

**PROS** in general agree with the statement.

Firstly they agree about competition among operators, through public **calls for tenders** at the three levels (collection, sorting and treatment operations).

Then, they mainly agree of the possibility of competition among PROs. It is not contradictory with a non-profit status: a business model based on a **non-profit** basis has to remain possible in a **competitive** market.

The main condition is: e**qual rules for all (no cherry-picking), enforced equally**. Therefore, the EC should ensure that national authorities have administrative capacity and will to operate such control. Transparency should also prevail.

### Public authorities

Mainly agree on the importance of competition, especially between collection and treatment operators. They argue that PROs should not be operational actors. They further argue that PROs should not be profit driven and that competition among PROs may be counter-productive.

### Treatment operators

**OPERATORS** argue that PROs should **not** be allowed to act as operators.

**Competition among PROs** may not be suitable at the start, but it should be the destination of travel. The European legislation should contain minimum requirements for all EPR schemes and a requirement for Member States to enforce them.

Public call through **tenders** should be mandatory for operations.

Some stakeholders suggest to distinguish:

- fair competition (a **procurement** issue)

- control and enforcement (an **operational** issue)

- transparency (a **reporting** issue).

## *Initial version of Statement n°6*

**Statement n°8: Transparency is required on performances and costs.**

Information on the environmental performance of the EPR schemes (achievement of recycling and collection targets) as well as on the financial aspects of the schemes should be provided and made publicly available, taking into account that cost effectiveness is part of the performance measurement.

This would contribute to several objectives, for example:

- for public authorities (national and European), to monitor and evaluate cost effectiveness as a fundamental part of the performance of a scheme; in order to allow for benchmarking, performance evaluation, and continuous improvement of national and European policies, transparent information on costs should be provided;
- for producers, who are financially and/or physically responsible for the end-of-life management of their products, to have sufficient information to help their decision-making in terms of product design and contribution to the waste management chain;
- for citizens, who contribute to the waste management costs both as tax-payers (contributing to the share of the costs supported by local and national authorities) and as consumers (contributing to the share of the costs supported by the obliged industry, through the eco-fees integrated in the purchasing prices of the products), to get better information about the efficiency of the systems they pay for.

## *Stakeholders' feedback*

**Stakeholders seem to have agreed that transparency of performances and costs is necessary.** However, according to some PROs, **full transparency has limits** when for example, competition does exist between PROs and confidentiality of some information is mandatory.

### Experts & NGOs

All agree with this Statement.

### Industry federation

Industrials are **mitigated** with respect to this statement.

Most of them argue that **it only makes senses for non-profit entities**. According to them, it does not apply for for-profit PROs which compete with each other, as they cannot make details about costs structure public. In the same way, service suppliers should have the right to protect their business information.

However, it could be considered though to **make more transparent the balance sheets** of profit-based PROs. And they also acknowledge the need to provide **a comprehensive overview** on the total waste management costs borne by citizens.

Finally, based on their own experience, some stakeholders argue that an extensive quantities and costs data reporting is possible, but will only result from **strict legal requirements**.

For not-for-profit PROs, a **full cost transparency** should prevail. Profit-based PROs, should be encouraged to provide voluntarily maximum transparency to their customers (the publication of their yearly balance sheets is insufficient).

*Statement n°4 could be included in/merged with this statement n°8, resulting in a single consolidated statement on the need for transparency in all its aspects.*

### PROs

PROs' position on this Statement is **mitigated**.

All agree that technical performance indicators are mandatory: they should be provided by PROs, audited by independent auditors and made public.

PROs also suggest that the **Municipalities that have an operational role should make their costs available,** in order to make the real WM costs public.

The common position is that the publication of **business secrets** (i.e. internal cost structure) should not be mandatory and should only be available to auditing authorities, as PROs' costs constitute a core element of their competitive performance. One strong argument is that costs comparison is only valid between several competing PROs confronted to the same requirements in one country.

Besides, one claim is that the requirements of information should not be disproportionate or imply non-justified administrative **burdens**.

Some suggest that the EC should set up harmonised templates for performance and cost **reporting**.

### Public authorities

Public authorities **all agree** with this Statement.

Some suggest that transparency needs to be included as a minimum legal requirement in the Waste Framework Directive.

Others specify that legislation should require from all EPR system organisations to publish:

- their fees

- amount of products put on the market

- amount of waste collected & treated

- amount of materials recycled.

### Treatment operators

Collection and treatment operators are rather **mitigated** on this statement.

One view is that there should rather be basic requirements on the EPR schemes and that a competitive market will make sure these conditions are fulfilled in a cost effective way.

**It should be clear what the consumer pays for and what services he gets from it** (i.e. what the EPR schemes cover and what they don´t cover). To that respect, it is argued that the municipalities should not be allowed to cross-subsidy the household waste collection with EPR material collection.

*Statement n°4 could be included in/merged with this statement, presenting a single consolidated statement on the need for transparency in all its aspects.*

## *Initial version of Statement n°7*

**Statement n°9: Harmonisation of key definitions and reporting modalities is needed at the European level**

Generally speaking, there is today a lack of harmonisation in the definition and reporting modalities for performance of EPR schemes among EU Member States. It is sometimes argued that there is also a lack of control at the European level of figures provided by Member States. This makes performance comparison very difficult.

Key definitions (definition of treatment operations – recycling, recovery; definition of products and waste categories – household, municipal, industrial, commercial, professional, post-consumer, etc.) and reporting modalities (type of data submitted to national authorities, frequency of updates, scope and perimeter) should therefore be harmonised at the European level, and a more thorough quality check and control of the provided data should be performed, in order to allow for benchmarking of performance, share of best practices, and continuous improvement of European and national policies.
The European Commission could develop and propose a set of common definitions and reporting modalities, to be applied by Member States once they are available.

## *Stakeholders' feedback*

The majority of stakeholders (83%) agreed that the harmonisation of key definitions and reporting modalities is needed at the European level. They also suggest that it is the European Commission's duty to ensure such harmonisation, independently from the common rules on EPR that are to be implemented by Member States. According to some industry representatives, the revision of the Directives should contain harmonised definitions.

### Experts & NGOs

**They all agree.**

### Industry federation

**Industry generally agrees.**

Clear distinction is necessary for different sources of waste: post-consumer, industrial, commercial and institutional.

Methods for calculating/reporting performance also need to be harmonised.

They think it is a **European Commission duty** to ensure such harmonisation, independently from the Common Rules on EPR that are to be implemented by Member States. This harmonisation should avoid administrative burden for companies.

There is an urgent need **to harmonise the means of evaluation of deliverables of recovery**, collection and recycling schemes. This criterion should be accompanied by a harmonised definition of recycling and recovery in order to assure a correct reporting. Significant differences in interpretation and practice of recovery, collection and recycling schemes across the EU have led to varying results and to unreliable and non-comparable statistics. This means that it is not possible to accurately assess progress in meeting EU targets and objectives, or to have a reliable fact base on which to set new or revised targets. It also allows some Member States to report recycling and recovery rates which are in line with the targets, without developing separate collection of post-consumer packaging.

It is suggested that **minimum rules** for all EPR schemes should cover transparency: material flows, cost, tendering procedures.

### PROs

**They all agree.**

The detailed guidance could include a number of acceptable **alternatives for data collectio**n, data processing and quality reports methodology, with minimum levels of verification of data that should be applied by Member States. The guidance documentation could **outline best practices** under each type of EPR scheme, to be applied by Member States within their system.

### Public authorities

**They all agree.**

The EU should harmonise key definitions and reporting modalities within the revision of the Waste Framework Directive, not separately for EPR.

### Treatment operators

**Generally agree.**

Packaging treatment operators do not believe that a harmonised **definition of 'reuse'** is appropriate. The reuse of bottles or drums in a system and with infrastructure designed for that purpose (principally a washing operation) is very different for the "preparation for reuse" of old computers or furniture. The two should not be compared.

Harmonized definitions are also needed for **separate collection, responsibilities of different actors, and of 'obliged packaging'**.

Harmonization is also needed for what is counted among packaging and the de-minimise threshold definitions which is currently excluded from the PPWD. For instance, in Slovenia this represents 1/3 of total packaging put on the market which increases the pressure on the paying industry and municipalities; also in Ireland the very high de-minimise rule supports free riding.

Avoid using the word **municipal waste**. It can be confusing since the municipalities have an authority role. Distinguish between actors (e g municipality as a authority) and markets (municipality or municipality company as an operator competing on the market.).

If a citizen owns waste, e. g. metal that has a value he or she should be able to sell it to a recycling company and it must not be given to the municipality as household waste. There need to be also new definitions to **clarify ownership of waste**

## *Initial version of Statement n°8*

**Statement n°10: Member States and obliged industry are co-responsible for the enforcement, and should ensure that the adequate means for monitoring and control are in place.**

The minimum requirements in order to undertake this control would be:

- a formal authorisation procedure of the PROs by the authorities, including control procedures over PROs;
- public control (endow relevant administrations with sufficient staff to fulfil effective enforcement, put in place a system of compliance promotion and enforcement that effectively discourages free-riders, define ambitious targets and develop the indicators and reporting obligations to allow their monitoring, ensure the quality of statistics reported, define and enforce control procedures on quality of recycling for exported materials);
- auto-control by obliged industry/PROs (perform regular audits on data reported and waste management activities, ensure the quality of reporting through third-party verification, ensure complete transparency on data management methods and results, assist national authorities in control, e.g. controls on exported materials);

This control should ensure producers compliance, respect of minimum requirements regarding collection, treatment and recycling operations, control over waste shipments, sound financial management of the systems.

## *Stakeholders' feedback*

Finally, a high number of stakeholders agree that both MS and obliged industry are responsible for the enforcement, and should ensure that the adequate means for monitoring and control are in place. Several methods of responsibility-sharing were proposed by different stakeholders. Some PROs believe that controls should be under Member State responsibility for collection and treatment operators which are not under contract with PROs. Some treatment operators and industries believe that the duties mentioned in the guidance should be firstly ensured by public authorities, in total independence, with powerful rights of investigation, control and enforcement on producers and on PROs. Others argue that there should be a balance between the control performed by the State via public authorities and the freedom that should be left to EPR compliance schemes to assume responsibility granted via accreditation.

### Experts & NGOs

Agree.

**Requirement to register and audit reprocessors/exporters of secondary raw materials**.

### Industry federation

**Generally agree with this statement.**

They call for the Commission to clarify **the role of the obliged industry** in exercising financial and managerial control over the collection and recycling schemes.

The **term "co-responsibility"** implies equality between the Public Authority and the PRO, which is not and must never be the case. A clear hierarchy of responsibilities exists in all existant EPR schemes.

The defining and enforcing of control procedures on quality recycling for exported materials should be a Government task only.

It is suggested that **minimum rules** for all EPR schemes should cover consumer information, monitoring, reporting and audits, and financial solidity.

### PROs

**Generally agree.**

Enforcement by Member States is essential to guarantee well performing recycling systems:

- formal authorisation procedure + regular audits of performance of PROs (e.g. securing of real recycling activities instead of trading of weighting notes

- audits of obligors (license partners) with respect to e.g. free riders, correctness of packaging classification. Activities by Member States can be completed via audits of license partners by PROs

- audits of brokers – companies that act as a broker for service of compliance – with respect to e.g. completeness of packaging quantities and packaging classification

PROs understand that the public administration does not develop a system that effectively discourages the fraud in this area. In this respect they understand that there are two ways of fraud concerning EPR schemes:

(1) fraud deriving from PROs which does not fulfill the universality principle in the collection service,

(2) fraud deriving from products allocated in the market that are not declared for EPR purposes.

PROs argue that the obliged industry could **not be co-responsible** together with public authorities for enforcement measures or sanctions as this is prerogative of the State by way of law.

Likewise, PROs believe that the costs of such a policy of control should not be borne **by producers** who already bear the costs of free-riders packaging management and prospection costs, as it is not part of their obligation.

Finally, PROs do not believe that **third-party verification** is necessary as a tight control is already operated by public authorities through the accreditations but also via public bodies as Court of Auditors.

### Public authorities

Agree.

### Treatment operators

**Generally agree.**

The questionnaire indicates that this should consist of a **formal authorisation procedure,** public control and auto-control by obliged industry/PROs. EUROPEN agrees that there should be a common minimum requirement across the EU concerning formal authorisation of PRO's and public control. We also agree that the obliged industry has a role to play in performing regular audits of PRO and ensure high quality of reporting and transparency.

**Third-party verification** should not be mandated at EU level: it should be up to the national authorities to determine whether this is necessary. Also, other than the existing appropriate law (eg. Waste Shipment Regulation) enforced by Member States, we do not believe that there should be an EU-wide requirement for obliged industry/PROs, or have a role, in controlling the export of materials. However, applying the full net cost principle, which would allow the PRO to benefit from the material value, would give greater visibility to the material flow and a greater incentive to ensure high quality recycling.

There is no mention in this statement of the important aspect of **auditing those that are reprocessing/exporting** obliged materials. It provides the confidence that producers are getting what they paid for.

**Control and enforcement** is a key element of a successful EPR scheme. We believe that these duties should be firstly ensured by **the Public Authority**, in total independence, with powerful

rights of investigation, control and enforcement on producers and on PRO. The same Public Authority entitled to authorise PRO according to strict conditions should also be able to control the PRO on all aspects and in full transparency.

At a second level, **the PRO** (and not the producers) should also be responsible for controlling their members (data reporting, free riders, etc) and their subcontractors (data reporting, recycling performance, etc).

## *Initial version of Statement n°5 bis (suppressed)*

**Statement n°3: An independent clearinghouse is necessary, especially in case of competing PROs.**

In the case of competing PROs, an independent organisation, acting as a clearinghouse[84], is necessary. This structure should have the following objectives (some of these objectives are also applicable in the case of a single PRO):

- Centralisation and aggregation of data reported (see Statement n°8) and control on data quality and completeness ("Register" role)
- Control over compliance (free-riders identification), in link with public authorities in charge of enforcement
- Ensuring that all competing PROs work in a level-playing field, by verifying that all requirements are met
- Calculating market shares and ensuring a fair determination of the PRO's individual objectives
- When necessary, organising the sharing of costs related to certain operations (e.g. reimbursement of local authorities, national communication campaigns), through common agreements with public local authorities, or through common call for tenders.
- This structure may also manage common communication and R&D activities.

## *Stakeholders' feedback*

Some stakeholders suggested that a clearinghouse is **only** likely to be a valuable addition to the national systems **in certain circumstances**, for example when several PROs are competing, which was not clearly specified in the Statement.

It has also been suggested by some actors to **further specify the function and role** of the clearing house.

If one local and regional authority claimed that a clearing house should be a **public** body or a body submitted to a strong public control, some PROs saw this entity as an **independent** third

[84] Third-party central agency or corporation, acting as a regulator on a competitive market

party, without any corporate link to producers nor PROs, or an administrative independent authority, accountable to national authorities.

### Experts & NGOs

Experts and NGOs mainly **agree**.

Strict **separation of financial interest from any specific PRO**.

Some of these tasks are necessary (point 1-2-3), whereas the others should be optional.

A clearing house is solely of benefit for **balancing of obligations**, a task that is unsuited to a registry.

No mention is made here of the **requirement to register and audit reprocessors/exporters of secondary raw materials**.

### Industry federation

A large majority of Industry federations **agree** with this statement: in case of competing PROs only. Not needed when there is only one PRO.

R&D activities should be kept in-house in order to foster innovation (point 6)

Identifying 'free-riders' should remain the role of public authorities (point 2).

*This statement could be merged with statement n°8 dealing with Transparency.*

### PROs

PROs mainly agree on the need of a clearing house in case of several competing PROs. However, some of them also require that its functions and scenarios should be **further analysed**, given that different functions are mixed. EC legislation should clearly define what a "clearing house" stands for, its **goals**, **functions** and basic **principles**.

Their basic task would be to **centralise data** and make it available to all stakeholders, and to provide a **public registry** of producers.

They suggest that it should be organised by an independent entity of the obliged industry (e.g. chamber of commerce).

Some PROs ask to which extent a clearinghouse differs from PRO authorisation Ministry and warn against the creation of an irrelevant administrative burden.

Some PROs suggest that, as an additional task, it could provide an independent mediation body, and support compliance enforcement by the authorities.

### Public authorities

A clearinghouse is needed, and it must be an **independent** body. It could be desirable that it is driven by the producers themselves

It should be public or **submitted to strong public control**.

Communication with citizens should remain a competence of public authorities (point 6).

The clearinghouse should be the **main contact point for municipalities**.

The allocation of quantities/market shares has to be clearly defined and **never have an impact on the compensations** that municipalities receive.

Beware with high transaction and monitoring costs (points 3 & 5).

Required to ensure collection in rural areas.

Clearinghouses should **publish** the total amounts of products put on the market, waste collected, treated and material recycled annually together with a summary of the price developments.

### Treatment operators

Although operators are not directly concerned, they **mostly agree**.

The relation to **EU competition law** must be clarified and it should be a task for the EC.

Some suggest that it should be more than just a clearinghouse, and have investigation capacity and sanction capacities.

*This statement could be merged with statement n°8 dealing with Transparency.*

## *Initial version of Statement n°3 bis (suppressed)*

**Statement n°6: When obliged company (through Producer Responsibility Organisations) are required to contribute financially, the contribution should be based on a "reference cost".**

When obliged companies (through Producer Responsibility Organisations)

- are required to contribute financially to waste management operations
- while **leaving the actual choices of organisation to a third party** (e.g. local authorities, for instance in charge of collection and/or sorting operations),
- a "reference cost" should be established.

This reference cost,

- which corresponds to the **optimal level of service necessary to reach the targets** and obligations of the EPR scheme,
- should be based on the market price and **controlled by an independent entity in full transparency**.

To this end, **performance indicators** should be developed to address the concept of optimisation (environmental, financial, minimum level of service to citizens, minimum requirements in terms of geographical coverage, quality of treatment operations, control over exports, etc.).

## *Stakeholders' feedback*

The majority of the respondents agreed that a financial contribution based on a "reference cost" should be subject to **further discussions.**

Some PROs agreed with the statement while others partially disagreed because they believe that it would be **difficult to determine**.

Some stakeholders also considered that the setting up of "a reference cost" could be a good idea **under certain circumstances**:

- **If there is competition** among several PROs,
- **If the criteria** on which this cost could be based **are objective and measurable,**
- **If such a cost has been discussed and agreed** by all actors involved.

Under these conditions, a "reference cost" could contribute to transparency and equity and avoid disputes between the actors concerned.

Some industries pointed out that setting a reference cost **for WEEE would be very challenging** because WEEE is a complex waste, and the costs for treatment is ever-changing.

### Experts & NGOs

NGOs are not all convinced by the feasibility, but **mainly agree**.

They insist in making sure the contributions **reflect the real cost for end of life,** with a **specific contribution per type of product** + **a minimum 80% coverage** of the cost for Municipalities.

They further suggest that EPR schemes should **cover costs associated to the residual bin collection**, but not directly re-allocated to Municipalities to avoid cost coverage of landfill or incineration. They should be allocated by a third party (e.g environmental agencies).

### Industry federation

Industrials as a whole are rather **mitigated or opposed** to the Statement.

One recurring argument is that any reference cost can not be set at the EU scale; this would not take into account national characteristics and go against the subsidiarity principle. Furthermore, such a reference cost may even **inhibit innovation** regarding sorting and collection technologies and if the EPR scheme does not benefit from any resale value, it can work against incremental improvements in quality.

Another claim is that a **robustly regulated competition** will be enough to deliver the optimal price.

At any rate, a methodological challenge is posed: how will the benchmark for reference costs be set? by whom? and according to which criteria?

Some suggest a **periodically revised** reference cost, which avoids a 'revenue' generating EPR scheme, but which at the same time takes into account eco-design efforts. **Technical guidance** for the calculation is required.

Some industrials favour a concept of '**lowest sustainable cost**': "*a holistic and transparent cost approach that allows compliance schemes to effectively achieve recycling and recovery targets and objectives. Lowest sustainable costs internalise all applicable costs to achieve targets, are non-discriminatory across all packaging materials covered and reflect actual recycling and recovery costs as far as possible*".

Finally, one stakeholder show confusion: "*The EPR-principle should cover the '**true cost**'. Is the 'full cost' also the 'true cost'? – this is not clear. Revenues should be deducted from 'costs'.*"

**PROs**

Most of PROs are **mitigated** with regard to this Statement.

"Reference cost" appears as a **one-size-fits-all** concept (contrary to the Preliminary Statement).

The main idea is that it may be interesting in schemes run by a single PRO, but it is **superfluous in competing schemes**, where public call for tenders should be enough to ensure cost optimisation.

Such a measure would be **detrimental to financial PROs**: when a reference cost is defined no competition is possible, then a financial PRO basically becomes a fee collection system.

Most stakeholders like the idea, but believe it is a very **complex task** (requires a consensus ; cannot consist in an standard cost ; cost driver is sensitive ; the "level of service" notion is hard to define in an objective manner; there are cases of combined operations for several waste streams; etc.).

Some argue that producers **should participate in the system organisation**, that actual competition should take place and finally that the reference cost should lead to a decrease of market prices. At any rate, the decision on reference costs must remain a **national prerogative**.

Some stakeholders estimate that a reference cost **would favour transparency and equity** whenever

a) factors and criteria would be objective and measurable

b) would be analysed by third parties

c) a debate would exist among all parties involved.

**In France, for packaging waste**, the "net reference cost" is composed as follows: it is the sum of the costs of a selective collection service (taking into account national costs for containers, collection, transfer, sorting and treatment) minus the product of the sale of sorted materials by municipalities.

EPR should neither compensate costs resulting from municipalities' choices of organization of waste collection and sorting, nor for sorted materials which may be sold below market value.

Especially, **in cases where a local authority decides to use a non-standard collection system,** the costs that the PRO has to bear should be limited to the agreed reference costs for the optimum collection system.

### Public authorities

Public authorities are rather **in favour or mitigated** about this statement.

Beyond the doubts related to calculation methodology (particularly for WEEE), the main idea is that the 'reference cost' should correspond to the **level of service** necessary to reach the targets of the EPR scheme, be **based on market prices** and **controlled** by an independent entity in full transparency. Public authorities expect **the EC should provide calculation guidelines**. And they recognise that MS should implement these guidelines in national legislation in a way that takes into account their characteristics. They should eventually establish the final reference cost for each EPR stream.

Some authorities identified the **national/regional scale** as more relevant for a collective definition of the organisation and distribution of costs of EPR schemes.

Some highlighted the case of Flanders, where a **system of lump sums compensations** based on an objective realistic cost calculation was introduced (for the costs of collection through civic amenity sites).

Some draw attention on the **territorial coverage** aspect: if a producer scheme is not able to provide the service in certain (sparsely populated…) areas, equivalent compensation needs to be awarded to local authorities.

One stakeholder suggested that it would be easier to calculate the **marginal costs** for achieving the recycling target and then **define a penalty** in €/tonne of non-recycled materials, which would be higher than the marginal cost.

### Treatment operators

Operators are rather mitigated with regard to this statement.

They argue that optimisation can be made and measured in many different ways and that the statement does not include enough market-based thinking. In a competitive market there is no need of any reference cost.


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