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Producer Responsibility

Extended Producer Responsibility schemes and their strategic role for producers

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ERION is the leading Italian Producer Responsibility Organisation (PRO) for the management of waste associated with electronic products and the exploitation of the secondary raw materials within it. Born in 2020 from the experiences of Ecodom and Remedia, Erion is the strategic evolution of both Compliance Schemes in terms of operational structure, services dedicated to its associated Producers and commitment to the environment, the circular economy, research and technological innovation. Erion comprises four sector Collective Schemes: Erion WEEE, Erion Professional, Erion Energy and Erion Packaging. The Collective Schemes are supported by ECO (Erion Compliance Organization), the Collective System responsible for providing them shared services, harmonising their respective strategies and coordinating the different operational areas. Erion is the Producer Responsibility Organisation chosen by over 2,400 Electrical and Electronic Equipment (EEE) and Battery and Accumulator Producers; a Producer's System controlled by the Producers themselves.

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Disclaimer: This report has been compiled by sofies based on available data and information as well as relevant interviews with stakeholders.

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1. Context and objective

The concept of Extended Producer Responsibility (EPR) was first introduced in 1990 as “an environmental protection strategy [...] making the **producer of the product responsible for the entire life-cycle of the product and especially for the take-back, recycling and final disposal**”. EPR implies that producers (including manufacturers as well as importers) take over the **financial and/or organisational responsibility** for collecting waste, as well as sorting and treating them for recycling or reuse. EPR policies provide producers with an incentive to take into account environmental considerations from the design phase to the end-of-life (EoL) of their products.

Policy makers at EU and country level are becoming increasingly aware of the potential of EPR as a **policy instrument to help prevent waste at the source, support the achievement of collection, recycling and recovery targets, as well as to reduce the environmental impact of a product**. Over the past 20 years, this increasing awareness has led to the wide adaptation of the EPR concept for many waste streams across Europe. As a consequence of this growing interest, the EPR policy landscape keeps evolving and results in an increasing complexity for producers to meet their obligations.

To encounter the administrative and operational burden but also the additional complexity stemming from a fast-changing policy landscape, producers can collaborate through collective EPR schemes. **The collective schemes exempt the producers from directly managing their waste and allow them to comply with the changing regulatory landscape while maximising the environmental, financial and social benefits.**

The objective of this report is to outline the characteristics and practices that contribute to an EPR scheme's successful performance and to its efficient management.

To do so, the key aspects of EPR systems will be reviewed, focusing on Waste Electrical and Electronic Equipment (WEEE), Waste Batteries and Accumulators and Packaging Waste streams in France, Germany, Spain, Italy and the United Kingdom (UK) to highlight commonalities as well as notable practices amongst schemes in these countries that contribute to their schemes' performance.



● Countries selected for EPR scheme review



2. Key aspects and requirements for EPR systems

EPR systems can have many different features, resulting in potential performance differences across countries and waste streams. Key features of EPR systems will be discussed in this part, and in particular: (i) the type of responsibility, (ii) approach to operations, (iii) the nature of competition, (iv) the cost coverage and (v) the transparency as well as surveillance.

2.1 Type of responsibility

Across EPR schemes, the **level of responsibility of a producer may vary from the sole financial responsibility to the organisational responsibility** of the end-of-life (EoL) management of the products. This can be explicitly required by regulations or voluntarily set by the industry.

There are two types of **"financial" responsibility**:

- in the first type, like the case of packaging in the UK, producers simply have to finance the existing waste management systems, removing the economic burden from municipalities (i.e. taxpayers). Some of the advantages of that system include the preservation of the historical organisation and the easy adaption to the local context;
- the second type of financial EPR schemes, like the case of packaging in France, works through bilateral contracts with municipalities, who stay in charge of operations. Depending on the contract with the municipalities, the financial contribution can be proportionate to quantitative results including collection and recycling rates, but also quality checks or treatments used.

In EPR schemes that also include an **"organisational" responsibility**, producers are financially responsible and also partially or fully responsible for the organisation of the activities traditionally undertaken by the municipalities:

- with a partial organisational responsibility, like the case of Erion for WEEE and batteries in Italy, municipalities are responsible for some activities - such as primary collection - whilst producers are in charge of other activities along the recycling chain - such as logistics, sorting, treatment and recovery of material;
- with a full organisational responsibility, like the case of Erion Professional in Italy, the producer is entirely responsible for the collection and treatment of the waste. In the majority of cases, EPR schemes subcontract activities to waste collection and treatment companies. While full organisational responsibility is not devoid of drawbacks (e.g. the duplication of collection networks by different schemes, rather than having one single collection network when this is run by the local authorities), it also presents multiple advantages including the direct surveillance of the waste management operations and the direct incentive to improve the cost-efficiency of the EoL management of products.

2.2 Approach to operations: individual or collective schemes

Regardless of the level of responsibility - whether financial or organisational - **the obligation stemming from the EPR policy can be exerted either individually or collectively** by a group of producers.

In the case of an **individual scheme**, the producer takes charge (financially, and/or organisationally) of the EoL management of its products. Individual schemes are particularly relevant when: (i) the corresponding product market is highly concentrated, (ii) products are particularly complex (e.g. large scale industrial equipment) or (iii) their EoL value is high. Producers in individual schemes can either implement a take-back system for their customers on their own or be responsible for waste volumes corresponding to their market share. Across Europe, there are very few individual systems, including the case of WEEE in Germany, as producers tend to have a greater administrative burden and additional organisational complexity.

With the complex requirements and obligations laid out by EPR regulations, it is quite common that producers collaborate to implement their obligations through a **"collective scheme"**. A collective scheme is also referred to as a **Producer Responsibility Organisation (PRO) and implements the EPR obligations in the name of the members in exchange for a fee**. Each producer contributes to the system according to its market share. The new Waste Framework Directive requires that fees will, where possible, be modulated based on different criteria such as durability, reparability, re-usability and recyclability as well as the presence of hazardous substances (i.e. the so-called eco-modulation). The PRO will in turn organize and finance the collection and recycling operations. In other words, a PRO exempts the member companies from directly managing the waste they are responsible for while optimizing all the costs.

Overall, PROs play a crucial role in facilitating waste management, in establishing convenient collection points for consumers and in gathering data consistently from each member. **PROs or collective compliance schemes allow producers to comply with the regulations while maximising environmental, financial and social benefits**. Last, but not least, PROs become a recognized stakeholder in the entire eco-system, playing a central role in advocacy and becoming often the interface towards government.

2.3 Nature of the competition

Competition can arise at different levels and amongst different actors in an EPR system including between schemes, as well as between waste management actors.

Competition between schemes arises when there are several schemes in the same waste sector and geographic zone; this **allows producers to benefit from price competitiveness** stemming from numerous compliance offers. In some cases, like in Italy for WEEE and Batteries, competition can be **regulated by an independent entity (e.g. clearing house)** which might ensure a level playing field, verify the full coverage (product and geographic), the legal compliance of the PROs and the treatment quality. This clearing house can be spontaneously created by the producers or may be a regulatory requirement. With the revision of the Waste Framework Directive, when there are several competing schemes, the Member State must designate at least one independent body to oversee the implementation of the EPR or entrust this task to a public authority.

Competition at the waste management level including at the collection, logistic, sorting and recycling stages is considered crucial to optimise the total costs of an EPR organisation.

2.4 Cost coverage

EPR schemes can cover different types of costs depending on the regulatory obligations and the voluntary coverage. **EPR schemes often have to cover as a minimum legal requirement some operational costs including separate collection, transport and treatment of waste**.

They can also voluntarily decide to provide additional funds for supporting services including awareness raising, data gathering and reporting or conducting research.

Through market dynamics, for some non-hazardous waste, the revenues from the recycling materials can sometimes be enough to cover the costs, resulting in a self-financed scheme. Nonetheless, the revenue from the recycling material is subject to the market fluctuations, hence giving rise to the risk of not covering all the costs. Otherwise, the costs are paid directly by the individual producer, or by the collective scheme using the contribution fee paid by each member producer.

2.5 Transparency and surveillance features

The need for transparency is two-fold:

- at PRO level: to allow producers to make informed decisions. In a competitive PRO set up, producers should be able to determine which scheme to join and to discharge their responsibilities by having a clear access to the fee structures of competing PROs;
- for governments: to monitor the schemes performances. It is important for governments to have access to the environmental performances, as well as the financial and technical aspects of the EPR schemes to be able to appropriately assess the costs and benefits of the EPR in place. These audits should be clear and transparent to allow the government to adjust the regulation accordingly.

2.6 EPR schemes good practices

Regardless of its features, an EPR scheme should aim at providing an effective collection and a high reutilisation/quality recycling at cost-effective fees for producers. **Some of the following good practices are put in place by EPR schemes across the world to ensure the lowest cost to society and to the producers as well as the highest sustainable, environmental and legal compliance:**



Widespread geographical coverage of collection points – this is vital to ensure an easy return system of used products for consumers and maximise the collection rate. A take-back scheme can also be put in place by producers to facilitate the collection (See case studies: Oil in Canada, Textile and Furniture in France, Tyres in Belgium).



Surveillance and transparency – they are crucial to ensure the required performance benchmarks are met, e.g. periodic auditing of registered producers (verify quantities of products put on the market (POM) vs declared) and waste treatment operators. It also represents a way for governments to evaluate the system (See case studies: Oil in Canada, Textile and Furniture in France, Tyres in Belgium).



Involvement of municipalities/local authorities – close partnerships between local authorities and the EPR organisation is important to ensure the implementation of systems adapted to the local context such as in regards of collection (See case study: Oil in Canada).



Strong awareness activities – EPR schemes should raise awareness at different levels including consumers and other industry stakeholders (See case studies: Oil in Canada, Textile in France, Tyres in Belgium).



Promotion of sustainable design – EPR schemes can help companies improve their environmental performances by providing advice based on eco-design innovation research, but also by linking them with recyclers (See case studies: Textile and Furniture in France).



Proportionate and fair financial contribution by member companies – it is crucial for members of a scheme to pay a fair and proportionate financial contribution in order to ensure equal treatment between companies but also for the EPR scheme to cover the costs necessary for compliance (See case study: Furniture in France).

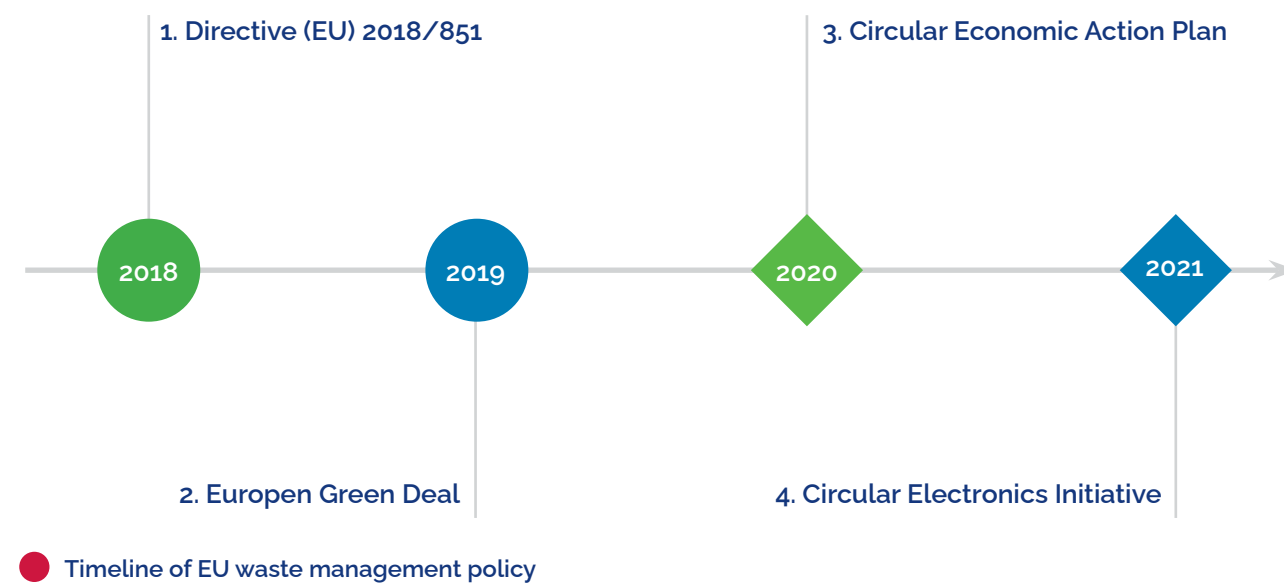
3. Overview of framework conditions and EPR schemes for WEEE, batteries and packaging in EU4 and the UK

This chapter reviews the European legal framework, which provides the legal requirements and obligations regarding waste management for Member States (MS). It further gives an overview of the different EPR systems in place for WEEE, batteries and packaging waste streams. At EU level, the performances of each stream vary a lot, going from 80% collection rate for the packaging stream, to 46% for portable batteries and finally to 44% for WEEE. The performances within each stream across member states also differ and it will be reviewed in the following section for France, Germany, Spain, Italy and the UK.

3.1 EU legal context

The Waste Framework Directive as amended by Directive (EU) 2018/851, establishes the basic concepts and definitions for waste management in the EU. The Directive aims at reducing the environmental impact of waste and encouraging resource efficiency through reuse, recycling and recovery. It **lays down general waste management principles and sets out principles for implementing EPR schemes in Member States**. Various stream-specific Directives (e.g. packaging, end-of-life vehicles, batteries and accumulators, WEEE) introduced EPR as a policy approach and more waste stream specific Directives are expected in the near future covering textiles, plastics (including restrictions on microplastics and implementation of bans on single-use plastics), construction and food.

In December 2019, the European Commission (EC) presented its European Green Deal, which provides a roadmap with a number of actions to increase the efficient use of resources by moving towards a clean and circular economy. As part of the European Green Deal, an updated proposal for a Circular Economy Action Plan focusing on sustainable resource use was presented in March 2020. This Circular Economy Action Plan provides a future-oriented agenda for achieving a cleaner and more competitive Europe by aiming to accelerate the transformational change required by the European Green Deal, while building on the circular economy actions implemented since 2015.



Another important aspect of the plan is to **strengthen the capacity of the EU to take responsibility for its waste**, especially on electronics which is one of the five key waste streams identified alongside packaging, ELV, batteries and construction materials. To address the increasing challenges of Electric and Electronic Equipment (EEE), the EC plans to present a 'Circular Electronics Initiative' mobilising existing and new instruments. In line with the new sustainable products policy framework, this initiative will promote longer product lifetimes and include, among others, regulatory measures for electronics and ICT under the Eco-design Directive so that devices are designed for energy efficiency, durability, reparability, upgradability, maintenance, reuse and recycling.

All the latter gives a general framework for implementing legislation in European countries, letting each MS be responsible for the actual implementation and regulation of the operational aspects. **EPR systems are hence subject to different interpretation by each MS, leading to heterogenous EPR policies across MS**. In addition, the legal landscape is in constant evolution, as demonstrated with the French Circular Economy law which redefines the role, responsibilities and actions of the producers and the PROs in the EPR context with PRO responsible also to manage funds set-up to support repair and other activities usually in the remit of Producer's core business and activities. For example, additional streams will become subject to EPR including construction products, gardening material, fishing gears, while the scope of some already existing streams are widened, including packaging with fast food packaging.

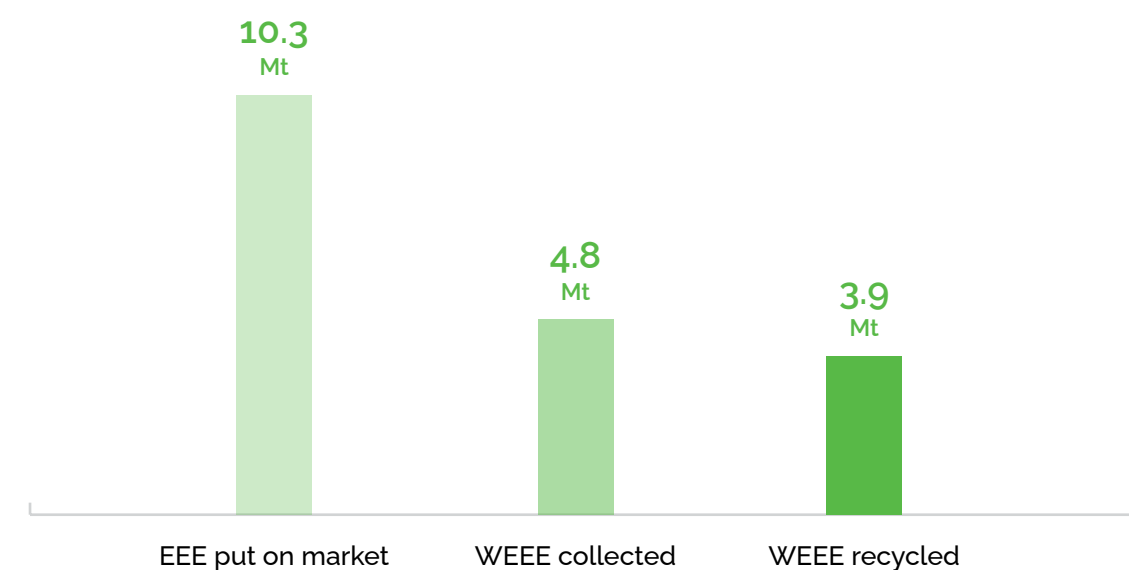
Overall, it becomes increasingly complex for producers to comply with these ever-changing policies at country and European level.

3.2 WEEE

3.2.1 EU and member state level information

WEEE is one of the fastest growing waste streams in Europe and presents some unique and complex challenges, including a substantial heterogeneity and increasing complexity of mixture of materials and components. This is mainly due to a very important product scope included in the WEEE category going from a cellphone to an X-ray machine. In addition, with different transpositions of the EU WEEE Directive by each member states, the definition of the product scope and streams (household/professional) vary and results in different product classification and coverage by each country. There is a fine line between the different categories, where one item might be considered household in some countries and professional in others (e.g. laptop used by an employee of a company).

At a European scale, there is still an important gap between the amount of EEE put on the market – 10.3 million tonnes in 2018 –, the amount of WEEE collected – 4.8 million tonnes in 2018 – and recycled – 3.9 million tonnes in 2018. The following table compares the different EPR systems for WEEE put in place in France, the UK, Spain, Germany and Italy, which are covering both Household and Professional WEEE.



● EEE and WEEE in Europe (in million tonnes), 2018 (Eurostat)

	France	UK	Spain	Germany	Italy
Individual or collective	4 collective schemes Or individual	28 collective schemes Or individual	11 collective schemes Or individual	Individual	13 collective schemes Or individual
Responsibility	Financial and organisational			Financial and/or organisational	Financial and organisational
Competition	Schemes: yes Waste operators: yes			Schemes: no Waste operators: yes	Schemes: yes Waste operators: yes
Profit	Not-for-profit	Not-for-profit or For-profit	Not-for-profit	N/A	Not-for-profit
Cost Coverage	100% coverage: • collection; • recycling/treatment. Financial contribution to general awareness raising campaign.			100% coverage: • recycling/treatment. Municipalities/Distributors financially responsible for household collection.	100% coverage: • recycling/treatment. Municipalities financially responsible for household collection.
Transparency & surveillance	Producers must report to third-party agency quantities of: • EEE POM; • WEEE collected and treated. Competition governed by OCAD3E.	Producers must report to third-party agency quantities of: • EEE POM; • WEEE collected and treated.	Producers must report to third-party agency quantities of: • EEE POM; • WEEE collected and treated. Competition governed by MITECO (Ministry of Environment).	Producers must report to third-party agency quantities of: • EEE POM; • WEEE collected and treated.	Producers must report to third-party agency quantities of: • EEE POM; • WEEE collected and treated. Competition governed by CdC RAEE.
Collection points	> 10,000 collection points		> 11,000 collection points		> 5,000 collection points
Results (Eurostat)	2018: EEE POM: 1.9 Mt. WEEE Collected: 815,000t (750,000t from Households). Recycled & reused: 600,000t (74%).	2018: EEE POM: 1.5 Mt. WEEE Collected: 815,000t (810,000t from Households). Recycled & reused: 700,000t (86%).	2018: EEE POM: 0.7 Mt. WEEE Collected: 320,000t (280,000t from Households). Recycled & reused: 280,000t (86%).	2018: EEE POM: 2.3 Mt. WEEE Collected: 850,000t (770,000t from Households). Recycled & reused: 730,000t (85%).	2018: EEE POM: 1.4 Mt ¹ . WEEE Collected: 420,000t (310,000t from Households ¹). Recycled & reused: 350,000t (84%).

¹ CdC data for Household WEEE as data is not available for Italy in 2018 from Eurostat.
<https://www.raeeitalia.it/assets/uploads/rapporto-impianti-2019.pdf>

Based on the above analysis, a general trend can be found between the collection rate and the number of collection points per inhabitants. As demonstrated by the following table, **France, the UK and Spain are leading in terms of collection rate and are also the countries with the largest collection network**. It also leads to smaller quantities of WEEE collected per collection points, going from 80 kg per day per point in Spain to 231 for Italy, which also has one of the lowest collection rates.

WEEE	Collection rate	Collection points/inhabitant	t per collection point (t)	kg/point/day
France	43%	1/6,700	82	225
UK	53%	1/6,670	82	224
Spain	45%	1/4,300	29	80
Germany	37%	1/7,500	78	212
Italy	43%	1/12,000	84	231

● Table 1: Performances at country level for WEEE sector

3.2.2 Information on the leading collective scheme at member state level

Detailed descriptions of the leading schemes in France, the UK and Spain are given below, including their performances and the notable practices key to their efficiencies. No detailed description is given for Germany as there are no collective schemes. In particular, the elements not yet implemented in Italy and which could potentially lead to increase collection performances, reduction of costs or enabling other benefits are highlighted with #GoodIdea.

France

Ecosystem is the biggest collective scheme for Household and Professional WEEE in France, with 1.4 million tonnes POM by its 4,600 member producers. Ecosystem manages the collection, transport, treatment and recycling of WEEE which is organized in four categories: household, professional, lamps and small fire extinguishers (covered also by EPR obligations).

Performance in 2019:

- 600 thousand tonnes of Household WEEE and 40 thousand tonnes of Professional WEEE collected;
- 574,300 equipment reused through the social and solidarity economy;
- 76% household WEEE on average is recycled;
- finances in 2019: €270 millions received in eco-participation by its members.

Notable practices:

- 5,000 collection points for Household WEEE, through local municipalities and organizations;



#GoodIdea 3,200 collection points for Professional WEEE. Several options are made available to fit the professional's needs:

- bring back to its distributor;
 - ask ecosystem for a container to be collected in a recurrent manner;
 - ask ecosystem for a unique collection, which can be done the same day of delivery of new EEE.
- 126 treatment facilities in partnership with Ecosystem;
 - the eco-participation is made visible to the consumer when buying EEE (Visible Fee adopted);
 - strong visibility and consumer awareness through partnerships such as with "Le Tour de France", but also through social actions e.g. distribution of telephones to people in need thanks to the collection of unused telephones;
 - eco-modulation system in place giving rise to a bonus based on three criteria:
 - provision of spare parts;
 - absence of bromine in plastics containing flame retardants;
 - integration of post-consumer recycled plastic.



#GoodIdea A new service for mobile phone collection via post system was introduced (<https://www.jedonnemontelephone.fr/>) that contributed to the collection of 25,000 devices in 2020.

UK

REPIC is the leading producer-led not-for-profit compliance scheme for household WEEE in the UK with over 100 member producers representing around 50% of the weight and value of the EEE POM. Many of their members are both providing products for professional (B2B) and household (B2C) use and only a minority is simply B2B.

REPIC manages and finances the collection, transport and treatment of the WEEE through contractors. REPIC also offers compliance services for batteries and packaging, however these are value-added services which can only be accessed by producers already members for WEEE.

Performance:

Collection and recycling performances are reported to governmental environmental authorities who publish the data of all the schemes as a whole. The current configuration of the UK system is highly competitive and individual market share of PRO are not disclosed to avoid competition distortion in respect of access to waste potential.

The following performances are recorded:

- partner with hundreds of collection site operated by municipalities or waste management operators, but also directly via retailers;
- approximately two-thirds of the waste collected comes from municipal collection, which is also the most expensive way of collecting (often difficult to control the amount they collect, open for limited amount of hours etc.);
- retail collection is the cheapest collection way and the most effective with often large quantities that are directly sent into treatment;
- producers can also collect the WEEE directly from customers' home when delivering a new product, offering a 1-for-1 take back scheme. Several large UK producers collect substantial amounts of WEEE through this system, which accounts for REPIC collection target, and is reported to the environmental authorities. However, producers must operate with approved

treatment facilities and provide a proof of these operations. In return, the producer benefits of a discounted rate on its membership fee charged by REPIC, to compensate the costs of managing the waste on its own. This system allows the creation of new WEEE collection stream, directly at the customers' house, enabling easier collection system and higher rate of reuse as the equipment is better taken care for.

Notable practices:

- strong relationship with industry as the scheme was set up by producers and producers are members of the board. REPIC has lobbying activities to make sure the interests of the producers are correctly represented in the legislation;
- not-for-profit nature enables the scheme to provide full transparency and lowest cost to its members;



#GoodIdea The main operational success factor is the possibility for producers to collect directly from their consumers, while being accounted for in overall REPIC collection targets. It allows to increase the collection rate of REPIC, decrease the costs paid by the members, increase reuse rate and finally, it allows REPIC to focus on increasing the collection efficiency for other members.

Spain

Ecotic represents 35.6% of the market with over 700 producer members including 18% of professional WEEE producers. In Spain a significant number of professional WEEE producers have their own individual system for WEEE management as they tend to have a close relationship with their clients and are able to retrieve waste easily from customers. However, Ecotic offers additional services to the full management of WEEE including the completion of producers' compulsory administrative duties (required registration and reporting of data), as well as communication activities.

Performance:

2019: 112 thousand tonnes of WEEE were collected, of which 103 thousand tonnes were household waste and 9 thousand tonnes were professional waste.

Finances 2018: €23.6 million income.

Notable practices:

- creation of one-stop-shop solution via agreement with another PRO for batteries (Ecopilas): Ecotic re-directs its members in need for battery scheme compliance with no additional administrative fee charged, facilitating their compliance activities;
- wide network of collection points: 8,000 collection points across the country (through which 69% of waste was collected in 2019) – in comparison to the 203 points in 2006;




#GoodIdea Ensures maximum traceability of waste through Radio Frequency Identification, RFID (electronic tag system) to identify WEEE by placing tags on products at the collection points; this is primarily used for air-conditioning units and large electrical appliances to remediate to the issue of WEEE leakages and traceability in Spain;

- wide range of communication activities including: technical workshops and conferences between stakeholders in the sector, digital campaigns often in collaboration with other PROs along with series of projects e.g. 'Otro Final es Posible' where three Autonomous Communities ran campaigns in 300 schools, reaching a total of 33,792 students through 1,423 workshops and collected 35,788 kg of WEEE in 2019; 'Comparte y Recicla' targeted towards the toy industry in 2019 collected 145 tonnes of WEEE from toys from a series of collection points through which in collaboration with Toys"R"US, ToysManiac and Martian Toys, these toys were then reprocessed into over 10,000 toys that were donated over Christmas to children in need;


- *'ecoinstaladores initiative'* (began in 2011): awareness campaign that aims to increase the collection of waste from air conditioning devices, which are far from the optimal levels of desirable collection compared to other types of WEEE. The initiative has had the participation of more than 700 companies that contributed more than 1,600 tonnes of waste of air conditioners. Ecotic maintains the accreditation as 'Ecoinstallers' for those companies and professionals who wish to contribute to the environment by carrying out a responsible uninstallation of the equipment, who can also benefit from the free collection of waste at their facilities at no cost.

WEEE Summary




Ecotic,
Spain

Ensure maximum traceability of waste through Radio Frequency Identification, RFID (electronic tag system) to identify WEEE by placing tags on products at the collection points.




Ecosystem,
France

Provide several collection points for professional WEEE including bring back to the distributor; ask for a container to be collected in a recurrent manner; ask for a unique collection.



REPIC,
UK

Allow producers to collect directly from their consumers, and account for the collected quantities in the PRO collection targets.



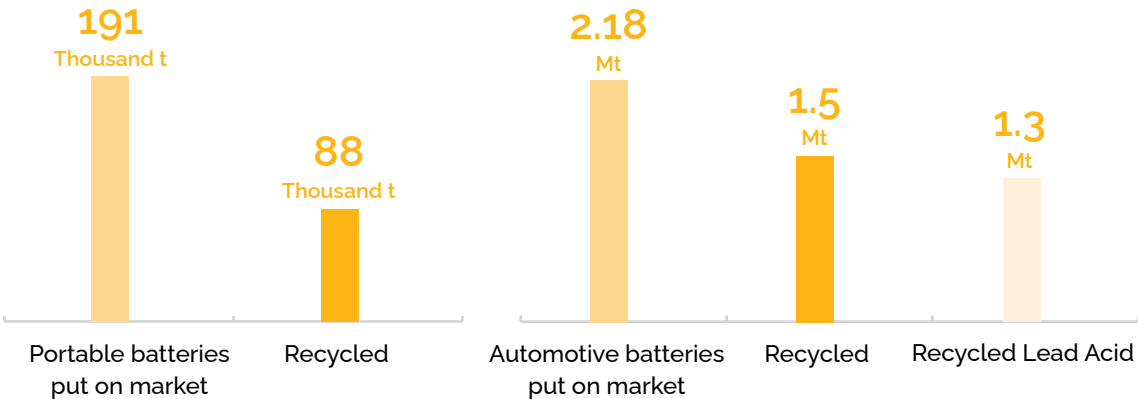
Ecosystem,
France

Provide mobile phone collection service via post system through internet.

3.3 Batteries

3.3.1 EU and member state level information

Germany, France and Spain implemented EPR schemes for batteries in the late 1990s, followed by the UK and many other European countries in the 2000's. **In general, EPR schemes for batteries across Europe have a financial and organizational responsibility.** In total in Europe in 2018, 191 thousand tonnes of portable batteries and accumulators were put on the market, and 88 thousand tonnes were collected for recycling. When considering automotive and industrial batteries the total put on market reaches 2.18 million tonnes and almost 1.5 million tonnes were collected for recycling with more than 1.3 million being lead acid.



Batteries in Europe, 2018

	France	UK	Spain	Germany	Italy
Individual or collective	2 collective schemes Or individual	5 collective schemes Or individual	4 collective schemes Or individual	4 collective schemes Or individual	13 collective schemes and 3 individual
Responsibility	Financial and organisational				
Competition	Schemes: yes Waste operators: yes				
Profit	Not-for-profit	Not-for-profit / For-profit	Not-for-profit	Not-for-profit	Not-for-profit / For-profit
Cost Coverage	100% coverage of: collection, sorting, recycling/treatment, awareness campaigns.				
Transparency & surveillance Clearinghouse	Producers report to third-party agency quantities of: • batteries POM; • batteries collected and treated.				Producers report to third-party agency quantities of: • batteries POM; • batteries collected and treated. Competition governed by CDCNPA.
Collection	One point per 900 inhabitants	One point per 1,250 inhabitants	One point per 1,600 inhabitants	One point per 480 inhabitants	One point per 11,270 inhabitants
Results	2018: Portable batteries: POM: 31,000t; Collection rate: 14,500t (47%). Automotive and industrial batteries POM: 258,000t; Recycling rates: • 86% lead (149,000t); • 80% Nickel Cadmium (2,800t); • 80% others (15,500t).	2018: Portable batteries: POM: 39,000t; Collection rate: 17,500t (45%). Automotive and industrial batteries POM: 401,000t; Recycling rates: • 85% lead (165,000t); • 79% Nickel Cadmium (180t); • 64% others (800t).	2018: Portable batteries: POM: 13,000t; Collection rate: 4,500t (37%). Automotive and industrial batteries POM: 250,954t; Recycling rates: • 68% lead (134,000t); • 82% Nickel Cadmium (310t); • 91% others (7,900t).	2018: Portable batteries: POM: 52,000t; Collection rate: 23,500t (48%). Automotive and industrial batteries POM: 294,020t; Recycling rates: • 81% lead (162,000t); • 79% Nickel Cadmium (970t); • 84% others (14,600t).	2018: Portable batteries: POM: 25,000t; Collection rate: 10,750t (43%). Automotive and industrial batteries POM: 345,000t; Recycling rates: • 90% lead (195,000t) (2017); • 79% Nickel Cadmium (200t) (2016); • 62% others (2,178t) (2016).

Based on the above data, we can draw a general trend between the collection performances of a country and the number of collection points per inhabitant. **Like for WEEE, it seems that the more the collection point, the better the collection rate** as shown by the following table where France, UK and Germany have the best collection rate and also the biggest number of collection points.

Portable Batteries	Collection rate	Collection points/ inhabitant	kg per collection point	kg/point/day
France	47%	1/900	195	0.534
UK	45%	1/1,250	328	0.899
Spain	35%	1/1,600	96	0.262
Germany	45%	1/480	136	0.372
Italy	35%	1/11,270	1,635	4.480

● Table 2: Performances at country level for Portable Batteries

3.3.2 Information on the leading collective scheme at member state level

Detailed descriptions of the leading schemes in France, the UK, Spain and Germany are given below, including their performances and the notable practices key to their efficiencies. In particular, the elements not yet implemented in Italy and which could potentially lead to increase collection performances, reduction of costs or enabling other benefits are **highlighted with #GoodIdea**.

France

Corepile is the leading battery compliance scheme with 836 members putting on the market more than 20.5 thousand tonnes in 2019.

Performance:

- nearly 10 thousand tonnes collected in 2019 (49%) with 81% recycling rate;
- finances for 2019:
 - revenue: €10.3 million;
 - functioning costs: €9.9 million with 65% for collection, sorting and treatment, 10% for communication, 11.5% for collection support, 12% for general spending, 1.5% for R&D.

Notable practices:

- more than 32,000 collection points with 80% accessible to individuals in supermarkets, hardware store, or dumps. Supermarkets and dumps have the best ratio in terms of number of collection points and tonnes collected;

#GoodIdea Provide material to their members for free to raise awareness but also for them to collect waste directly including small containers and informative materials;

#GoodIdea Strong communication and awareness raising campaigns:

- creation of three **online games** and a game centre in Paris;
- partnership with **15 influencers** through Instagram and youtube to reach younger generation;
- organisation of a national campaign, an exposition on recycling.

#GoodIdea Corepile runs a satisfaction survey among stakeholders which in 2019 indicated an average score of 4.28/5;

- strong visibility through the partnership with Le Tour de France, where it distributed 5,000 boxes as gift to individuals to collect their used batteries;



- educational actions by involving more than 30,000 students in Paris, resulting in the collection of 22 tonnes of batteries;
- eco-modulation system in place which gives rise to a bonus when members use lithium accumulators with Cobalt and Nickel metal hybride (Ni-MH) cylindrical.

UK

BatteryBack, the UK's largest battery compliance scheme, has been run by WasteCare as a national recovery service for waste portable batteries since July 2008. Batteries are collected from retailers, offices, schools and local authorities.

Performance:

- wide collection network over 30,000 collection points;
- strives to maintain low compliance cost for its members, currently at £0.01 per battery placed on the market.

Notable practices:



#GoodIdea BatteryBack established the first UK battery recycling plant, which is operated by the company WasteCare, helping reduce the current costs of recycling by avoiding the shipment abroad of batteries to be recycled. The recycling plant is the only one in the UK and is operated by a waste management service with 25,000 tonnes capacity. In other words, capacity to recycle all UK's alkaline batteries;

- increased communication and awareness raising activities through partnerships with big companies such as Duracell to run school battery recycling programmes, 'Big Battery Hunt' provides UK schools with collection boxes and prizes for collecting the most batteries.

Spain

Ecopilas was established in 2000 and represents around 75% of producers placing portable batteries on the market. Ecopilas offers producers the full management of battery waste, including collection from designated points as well as points of sale (offering on demand collection service for a minimum amount of waste for batteries of professional/industrial channels), subsequent treatment and fulfilling producers' reporting obligations.

Performance:

- collected over 7 thousand tonnes of used batteries in 2019, with a collection rate for portable batteries of 45%, 51% for industrial batteries and 3% for automotive batteries and accumulators;
- finances for 2019:
 - waste management: 72.5%;
 - communications and public awareness: 12.8%;
 - company service: 8.6%;
 - administration and other expenses: 6.1%.

Notable practices:

- largest collection network for waste portable batteries in Spain with 49,945 collection points compared to 16,000 in 2012 thanks to the collaboration with WEEE organisations through the Recyclia platform. In addition, Ecopilas takes back waste batteries from 2,700 municipal collection points;

- "tube collector" container designed for establishments with intense user traffic, offering high visibility and ease of location for consumers to bring back their waste;

- collaboration with other scheme to improve effectiveness of informational and educational measures and coordinate collection through a coordination centre: OfiPilas;
- wide range of communication activities to increase visibility and awareness, including:
 - multiple digital campaigns;
 - organisation of sports-days with battery collection themes;
 - campaigns in schools including the use of a mobile classroom (in a truck) equipped with audio-visual materials, accompanied by training for teachers (since its launch in 2011, the campaign has reached over 40,000 students and 1,400 teachers from ten Autonomous Communities);
 - distribution of 1.3 million 'mini-collection containers' to households accompanied with educational tools on the impact of battery waste and importance of proper management.

Germany

GRS (foundation for the Joint Return Organisation for Batteries) represents over 90% of registered producers (over 4,600 manufacturers as of 2019) and is not-for-profit. Fees charged to producers are calculated according to weight and battery type put on market in the past two years and GRS may invoice free riders for waste batteries it collects for them.

Performance:

- collection quota 2019: 76%;
- recycling quota 2019: 106% (GRS recycled more than the quantity supposed to based on the quantity put on the market by its members);

#GoodIdea To ensure the safety of collection, GRS provides **three different collection containers for portable batteries, distinguished according to three safety classes:**

- 1) green containers for conventional batteries;
- 2) yellow for high energy batteries;
- 3) red for damaged high energy batteries.

Additionally, as a result of the safety risks involved in the storage of lithium batteries, GRS is changing its collection infrastructure to include further separate collection points for 'high-energy batteries' including setting up 'qualified return points' operated by municipal authorities, specialist retailers and trade outlets.

Notable practices:

- offers about 170,000 waste portable battery collection points in Germany (one per 480 residents), along with distribution of collection boxes sent to trade outlets and municipal collection points. GRS operates a separate take-back organisation for industrial batteries with 3,000 collection points;
- good visibility through the use of logo for collection points to easily identify collection points;

#GoodIdea GRS operates the first nation-wide collection system for e-bike batteries. Safe collection is organised through the **use a transport barrel, adequate quantity of non-flammable filler material and PE bags**. Around 80% of e-bike retailers are registered with GRS;

- strong awareness-raising campaigns in schools, directly via the website, but also through German national tour around cities and towns.



Batteries Summary



Corepile,
France

Provide material to members for free to raise awareness but also to collect waste directly including small containers and informative materials.



Corepile,
France

Strong communication and awareness raising campaigns through online games, partnership with influencers, national campaigns and exposition on recycling.



Corepile,
France

Run a satisfaction survey among stakeholders.



BatteryBack,
UK

Establish a battery recycling plant to reduce recycling costs by avoiding the shipment abroad of batteries to be recycled.



GRS,
Germany

Operate a nation-wide collection system for e-bike batteries and provide safe collection through the use a transport barrel, an adequate quantity of non-flammable filler material and PE bags.



GRS,
Germany

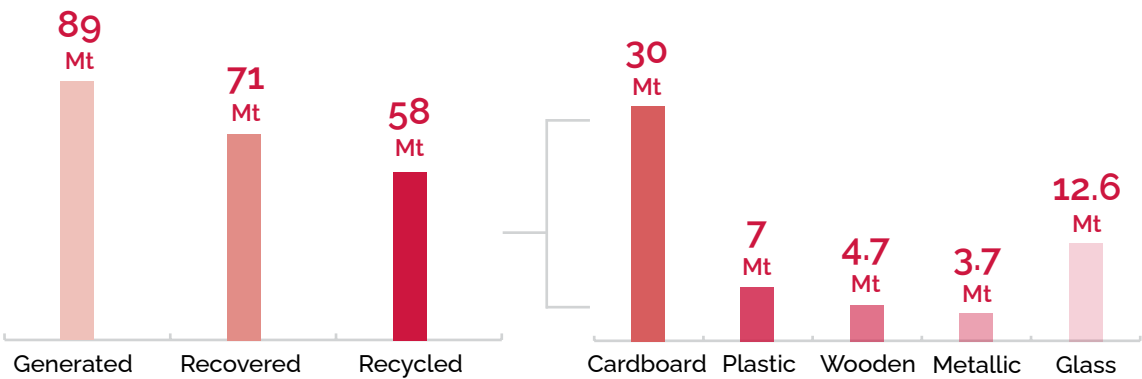
Provide three different collection containers for portable batteries, depending on safety classes:
1) green for conventional batteries;
2) yellow for high energy batteries;
3) red for damaged high energy batteries.

3.4 Packaging

3.4.1 EU and member state level information

Historically, packaging from household has been collected, sorted and recycled by municipal services and local authorities before the introduction of EPR schemes. Packaging represents one of the first waste streams to be regulated via the EPR principle in the 1990s starting in Germany, France, Spain and then the UK. Despite being one of the first waste streams to adopt EPR models, there is still great heterogeneity in terms of packaging EPR systems and their features across EU. This is reflected for example in the type of packages that is covered by the EPR systems, where some countries cover only one or multiple streams between household, household-type and Commercial & Industrial (C&I) packaging.

In total in Europe in 2018, 89 million tonnes of Packaging Waste were generated, 71 million tonnes were recovered, and 58 million tonnes were recycled: 30 million tonnes of paper and cardboard packaging, 7 million tonnes of plastic packaging, 4.7 million tonnes of wooden packaging, 3.7 million tonnes of metallic packaging, and 12.6 million tonnes of glass packaging.



● Packaging in Europe (in million tonnes), 2018

	France	UK	Spain	Germany	Italy
Individual or collective	2 collective schemes Or individual	>40 collective schemes Or individual	2 collective schemes Or individual	9 collective schemes Or individual	1 collective scheme (CONAI) and 3 individual systems
Responsibility	Financial		Financial and organisational		
Competition	Schemes: no Waste operators: yes	Schemes: yes Waste operators: yes	Schemes: no Waste operators: yes	Schemes: yes Waste operators: yes	Schemes: yes Waste operators: yes
Profit	Not-for-profit	For-profit	Not-for-profit	For-profit	Not-for-profit
Stream Coverage	Household	Household and C&I ²	Household and household-type		Household and C&I
Cost Coverage	80% coverage of: <ul style="list-style-type: none">collection;sorting;recycling / treatment;administrative;communication. Financial contribution to general interest campaign, R&D.	No cost coverage obligation. 10% of cost voluntarily covered. Market-based: cost coverage for collection and recycling varies on market fluctuation.	100% coverage of: <ul style="list-style-type: none">collection;sorting;recycling/treatment;administrative;communication. Financial contribution to general interest campaign.		
Transparency & surveillance	Producers and waste operators must report to third-party agencies quantities of: <ul style="list-style-type: none">packaging POM;packaging sorted and treated.				
Results	2018: <ul style="list-style-type: none">5 Mt POM;3.5 Mt recycled;69.6% recycling rate.	2018: <ul style="list-style-type: none">11.8 Mt POM;7.3 Mt recycled;62% recycling rate.	2018: <ul style="list-style-type: none">7.5 Mt POM;5.2 Mt recycled;69% recycling rate.	2018: <ul style="list-style-type: none">8.9 Mt POM;6.1 Mt recycled;69% recycling rate.	2018: <ul style="list-style-type: none">12.6 Mt POM;9 Mt recycled;67% recycling rate.

² C&I: Commercial and Industrial

3.4.2 Information on the leading collective scheme at member state level

Detailed descriptions of the leading schemes in France, the UK, Spain and Germany are given below, including their performances and the notable practices key to their efficiencies. An interesting component common to all the schemes is to provide eco-design related services. **The schemes provide several tools to producers to help them minimize the environmental impact of their packaging either for free or for additional costs.** These services are quite unique to packaging stream and probably due to simpler product design compared to other streams such as EEE and batteries.

In particular, the elements not yet implemented in Italy and which could potentially lead to increase collection performances, reduction of costs or enabling other benefits are **highlighted with #GoodIdea.**

France

Citeo and Adelphe are the two agreed compliance schemes in France which communicate their results together in order to have a complete representation of the situation. With 20,844 members in total, more than 5 million tonnes of packaging were put on the market in 2019.

Performance:

- 70% recycling rate with 3.6 million tonnes of packaging recycled compared to 5.1 million tonnes put on market by the members, including 47% for aluminum, 69% for paper, 28% for plastics, 85% for glass, and 131% for iron (as they recycled more iron that they were responsible for);
- finances:
 - revenue: €708 million;
 - operational costs: €623 million;
 - other costs: €10 million for awareness raising, €23 million to support the reuse of material, €7 million for R&D, €19 million for management, €10 million for client support to collect and sort.

Notable practices:



- **#GoodIdea CITEO provides a variety of tools to help producers eco-design their packaging,** including “FEEL” to minimize their impact on the environment as well as their financial contribution to the scheme, and “BEE” to determine the environmental impact of the packaging through a life cycle analysis;
- strong visibility and awareness raising campaigns including:
 - “to sort is to give” through adds, tv, radio, local press, newspaper: 78% of the French population was reached;
 - “you sort, we recycle” focus on plastic bottles in collaboration with 12 beverage brands: more than 21 million people reached;
 - “master bottle” targeting at youth to sort their bottles through the creation of a ‘manga’ like serie, containing 2 seasons with 3 episodes of 30 seconds: reached more than 54 million people.
- educational components through the organization of awareness raising activities for children;
- increase their outreach by partnering with a variety of associations, schools and cities;
- eco-modulation system is used to give a bonus to members based on several criteria such as the use of renewable material, the recyclability and the display of information.

UK

Valpak

Valpak is one of the many packaging compliance schemes in the UK and was the first one to be established in 1997. It has now extended into various other sectors including WEEE, batteries, coffee capsules. Despite the existence of various other packaging schemes, Valpak continues to be the biggest with around 2,000 members which it attributes in part to the initial support it garnered from industry actors and to its reputation in the sector as an effective compliance scheme.

Performance:

- 64% recycling rate (2019);
- collection rates are not public as UK system works adopting the Packaging Recovery Note (PRN) model: the goal of each scheme is to meet the national target for collection but not to exceed this goal as this would just result in heightened costs for producers. PRN documents can be bought from accredited processors when they have recovered and recycled a tonne of packaging material. The PRN documents provide evidence that the packaging material has been recycled into a new product;
- finances:
 - over 50% of revenue from packaging fees;
 - around 25% revenue from WEEE fees;
 - around 10% of revenue from batteries fees;
 - the rest from additional services.

Notable practices:



#GoodIdea Creation of "Valpak Insight", the largest packaging data warehouse in the UK, allowing businesses to rapidly analyse data across their supply chains such as recyclability, carbon impact, Plastics Pact targets, costs and supplier performance. The software is used by grocery and wholesale retailers, football clubs, construction companies, and more to understand their own packaging with the aim of finding an alternative or to remove unnecessary packaging;



#GoodIdea Offers additional chargeable services beyond collection and waste management including:

- consultancy services** to help businesses increase their ability to become compliant with obligations, as well as to achieve recognised sustainability standards such as ISO:14001 or ISO:6001;
- international compliance service** to help UK producers that export products in other countries comply with local EPR regulations through its network of key operators in foreign countries;
- consistent audits of members**, helping to identify where material has actually been overreported, in 2019 through these audits Valpak helped its members save £800,000 where they had overreported packaging quantities.

- cross-fertilisation services: a lot of packaging producers are also WEEE (and sometimes battery) producers, wherein by covering multiple sectors, Valpak offers producers increased convenience by enabling them to fulfil multiple requirements with just one scheme.

Ecosurety

Ecosurety is the second biggest PRO in the UK for packaging, and it also offers WEEE and batteries compliance services for producers, which presents an elevated and attractive convenience for many of its members who often face compliance obligations in two or more of these sectors.

Performance:

- collection and recycling rates are not public;

- ecosurety aims to help increase domestic recycling partners and their capacity in order to decrease reliance on exports for waste treatment.

Notable practices:



#GoodIdea Ecosurety is a Bcorp company, which is reflected significantly in the scheme's activities, as it prioritises impact-driven activities as its business style. As such, low prices for producers aren't the objective, but rather high-quality services that have a demonstrable positive environmental effect on waste beyond mere compliance;

- by providing a wide range of initiatives and services to members included in the membership fee, Ecosurety has placed itself as a higher value, higher price scheme that its members are willing to pay for. These services include:
 - data management systems for members to help businesses visualise materials used across the value chain to identify problematic materials and to help assess where sustainable alternatives can be introduced;
 - track and trace system for packaging recycling (Polytag) : also known as Digital Deposit Return System (DRS), the system (so far piloted only in some regions of the UK) tags bottles which are then scanned when placed by consumers in recycling containers using a free app. The bottles are also scanned upon collection by the local councils' waste recycling agency. For each bottle scanned, consumers receive a digital token – worth 20p. In Wales, these tokens are then donated to raise funds for a local primary school. These schemes allow local authorities, brands and regulators to monitor recycling rates, but also to analyse the habits of households;
 - evidence cost-analysis provided to calculate producers' "evidence costs per product, per supplier", allowing retailers to identify which products cost them the most to help reduce such expenses, and helping producers assess "which steps of [their] supply chain producer responsibility is hitting [them] hardest, and potentially find areas of cost reductions";
 - information and training to ensure constant up-to-date information on upcoming policy changes that may impact businesses' operations, including detailed advice that is often attained by 3rd party consultancies.

- wide and extensive range of awareness campaigns to increase collection rates and variety of R&D projects to reduce waste e.g. Ecosurety-Exploration Fund is investing £1m to reduce the impact of packaging, batteries and WEEE.

Spain

Ecoembes, founded in 2019, is one of the two collective schemes in Spain for packaging waste with 12,623 producers registered as of 2019. Ecoembes covers full management including collection, sorting and treatment of packaging waste.

Performance:

- 1.5 million tonnes of containers (plastic, metallic and paper/carton containers) were collected in 2019, with a recycling rate of 80%;
- finances for 2017:
 - €502 million (95% of total costs) for collection costs (bins, pick up of waste, sorting and recovery in sorting plants and awareness campaigns);
 - €27 million (5% of total costs) for management expenses (services contracted by Ecoembes, leases, personnel equipment, etc.);
 - total income: €529 million of which 90% (€473 million) comes from Green Dot Fees and 10% (€56 million) is revenue from sales of recovered materials to recyclers.

Notable practices:

- wide collection system: 390,000 containers for plastics and 225,000 containers for paper/carton in public streets and 44,000 collection points in sport stadiums, offices, shopping centres etc;



#GoodIdea Organisation of trainings of municipal staff and sorting plant operators to improve process efficiency, as well as training for people in a vulnerable socioeconomic situation to work in the recycling sector;



#GoodIdea Use of technology to optimise efficiency of packaging pick-up and sorting process including container level detectors, GPS to plan pick-up routs and automated sorting plants;



#GoodIdea Ecodesign funding and innovation (including for instance, initiatives propelled through use of Circular Lab to enable cooperation between producers) allowed saving 525,300 tonnes (as of 2018) of primary materials in the past two decades thanks to the increasingly sustainable design of adhered producers' packaging. In 2018, 2,179 producers took on the eco-design initiatives put forth by Ecoembes;

- strong awareness raising with over 360 awareness campaigns, reaching over 880 schools (and which have included innovative programs such as helping children to build their own recycled musical instruments).

Germany

Der Grüne Punkt was founded in 1990 and was Germany's first dual system, where packaging waste has to be managed in a separate stream from household waste. The scheme has been for-profit since 2004 and represents around 50% of producers, charging them a fee according to the amount of packaging material put on market. The fee covers full cost of collection, sorting, recycling and recovery of packaging waste from households as well as communication costs. In Germany, the different packaging PROs use a common collection infrastructure throughout the country and divide the cost according to market share, which has contributed to increasing the cost efficiency of the collection processes.

Performance:

- 1.7 million tonnes of waste recycled in 2019.

Notable practices:



- created alternative sources of revenue through:
 - **#GoodIdea Its own brand 'Systalen' for high-quality recyclates developed from post-consumer plastic waste**. Der Grüne Punkt is one of the largest commodity traders in Europe, marketing metals, plastics, glass and other materials obtained from post-consumer collections;
 - its certified waste management company, offering businesses range of logistical operations including approved storage and international heavy goods transport.



#GoodIdea Der Grüne Punkt helps customise solutions for take-back systems (e.g. reverse-vending-machine retrieval, deposit clearing, etc) and offers support services for producers to fulfil their deposit duties (by law producers must have mandatory deposits for all beverage packages measuring between 0.1 and 3 litres);

- creation of digital platforms e.g. VerpackGO online packaging license calculator;



#GoodIdea Support its members for eco-design through the initiative Design4Recycling providing extensive guidelines and advice for producers;

- consumer awareness-raising of proper disposal methods in relevant bins (which has greatly contributed to facilitation of seamless sorting of packaging waste).

Packaging Summary



CITEO, France;
Der Grüne Punkt,
Germany;
Ecoembes,
Spain

Provide a variety of tools (including funding) to help producers eco-design their packaging and minimize their impact on the environment.



Valpak,
UK

Creation of a large packaging data warehouse to allow businesses to rapidly analyse data across their supply chains such as recyclability, carbon impact, costs and supplier performances.



Valpak,
UK

Provide additional chargeable services beyond collection and waste management including consultancy and audit services.



Ecosurety,
UK

Become a BCorp certified company.



Ecoembes,
Spain

Organisation of trainings of municipal staff and sorting plant operators to improve process efficiency.



Ecoembes,
Spain

Use of technology to optimise efficiency of packaging pick-up and sorting process.



Der Grüne
Punkt,
Germany

Help customise solutions for take-back systems (e.g. reverse-vending-machine retrieval, deposit clearing, etc).



Der Grüne
Punkt,
Germany

Create own brand for high-quality recyclates developed from post-consumer plastic waste.



A set of successful examples of EPR schemes were selected and described in this chapter including textiles and furniture in France, tyres in Belgium as well as oil in Canada.

These schemes were selected as they were demonstrating good practices elements allowing effective collection and recycling while minimising costs and ensuring the highest sustainable and environmental performances. Some of these good practices include the geographical coverage, the transparency, the involvement of local authorities, strong awareness activities, sustainable design promotion, and fair contributions by member producers. A summary of the key information collected through interviews of each of these schemes is presented in the following table.

	Textiles (France)	Tyres (Belgium)	Furniture (France) HH + Non-HH		Oil (Canada)
Members	1,500	763	5,500	1,100	250
Revenue €	30,000,000	25,000,000	227,600,000	N/A	14,400,000
R&D %	3%	N/A	1%	2.3%	1%
Communication %	15%	N/A	1%	0.3%	4%
Collection points	46,000	5,400	4,000	136	4,000
POM (ton)	650,000	79,000	2,700,000		93,000,000 litres
Kg Collected/ point/day	15	45	678		70
% collection	39%	113%	37%		110%
% recycled	34%	89%	56%		32%
% reused	58%	4%	1%		68%

● Table 3: Case studies summary of information

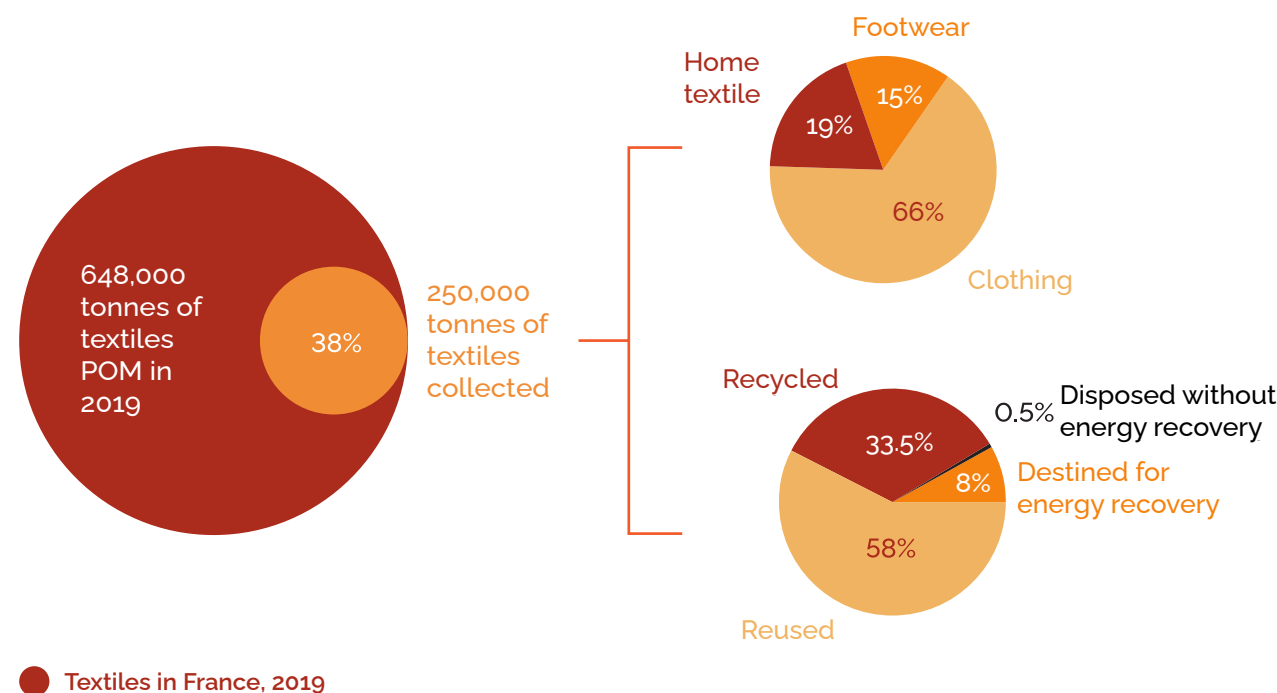
4.1 Textiles in France

In 2007, France became the first and only country to introduce a legal framework establishing EPR obligations for all legal entities that manufacture, import or distribute textile items including clothing, footwear and linens. Even as a pioneer, this EPR scheme managed to increase the collection rate from 100,000 tonnes in 2009 to 250,000 tonnes in 2019 and to have a reuse rate of nearly 60%, thereby outstanding the current legal requirement laid out by the new French CE Act of reaching a reuse rate of 5% by 2030 of household waste. This target will be further defined by decree and tailored to the textile sector.

In 2019, Eco TLC was the only licensed PRO for the industry, which counted 1,500 registered members. Eco TLC covers the costs of collection, transport and treatment of waste including sorting and reuse/recycling/elimination. By providing funding to both the sorting operators and to local authorities, Eco TLC ensures that there is an adequate number of collection points per inhabitant from which it organises the transport of waste to the sorting operators (63 organisations are currently registered). In addition, the PRO funds R&D activities for sustainable innovations in the textile industry. It carries out prevention activities such as setting up awareness campaigns and allocating funding to local authorities for their communication activities on textile waste management to citizens. These costs are covered by the eco-contribution fees paid by its members, which are calculated by Eco TLC in accordance with the quantity producers have placed on the market, the size of the items and eco-modulation criteria.

Scheme performance:

Of the 648,000 tonnes of textiles POM in 2019, almost 250,000 tonnes of textiles were collected (collection rate of 38%). From the textiles collected, 66% represented clothing, 19% home textiles and 15% footwear. 58% of the total waste collected was reused, 33.5% recycled, 8% destined for energy recovery (including Solid Recovered Fuel processing), and 0.5% was disposed without energy recovery (2019). Since the start of the EPR policy, post-consumer textiles collection increased annually by 13% with an increase of 6% and 2% in recycled and reuse rate respectively.



Factors driving success:



Widespread geographical coverage of collection points – over 46,000 collection points nationwide, with more than one collection point per 1,440 inhabitants. These collection points include self-standing points and points found in shops and associations.



Surveillance and transparency – producers are required to provide a certificate of veracity for their declaration of quantities of textiles, linens and shoes placed on the market, which must be certified by a chartered accountant. This is then run through consistency checks, in addition to an annual third-party audit (commissioned by Eco TLC). To benefit from financial support from Eco TLC, sorting operators must also meet traceability conditions including "reporting on the origin of the used clothing, home textiles and footwear they sort" (i.e. demonstrate their provenance from registered collection sources).



Strong consumer-awareness activities – both through the support of local authorities in their actions as well as through their own wide array of digital resources, Eco TLC organised social media campaigns as well as designed online map to find nearest collection point.



Promotion of sustainable methods – through eco-modulation tariffs as well as through its R&D activities on eco-design (more than 40 million additional eco-modulated items were declared to the PRO in 2019 in comparison to 2018).

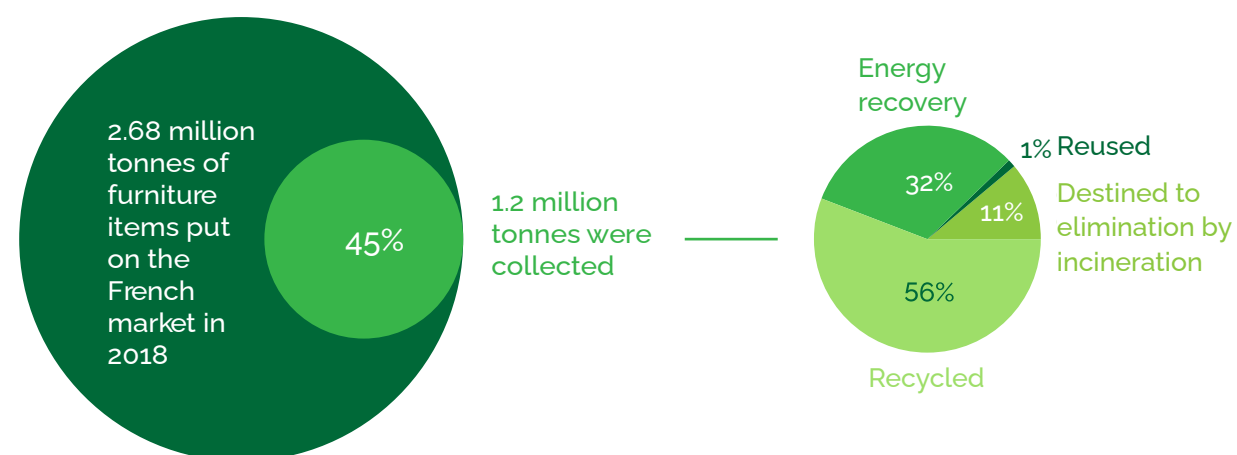
4.2 Furniture in France

The EPR scheme for furniture in France is particularly interesting as it is unique in the world, dating back from 2011, and yet managed to double the quantity of collected furniture in only 4 years, increasing from 600,000 tonnes in 2014 to 1.2 million tonnes in 2018. In addition, to improve the reusability rate of the furniture, a separated collection method was developed to limit the damages to the furniture during transportation.

France is the only country with a national EPR scheme for furniture with 2 PROs: Eco-mobilier and Valdelia. Members registered with the PROs pay an eco-contribution fee, determined by furniture categories, weight of products and eco-modulation criteria. The funding is then used by the PROs to cover the costs for collection, sorting, recovery and treatment of waste furniture – including reuse, recycling, energy recovery or landfill. For this, the PROs contract sorting facilities who then direct waste furniture that can be salvaged for reuse or towards treatment operators. Additionally, the PROs carry out public awareness campaigns and eco-innovation for waste prevention (e.g. research on new recycling methods, ways to improve the valorisation of furniture and optimisation of collection).

Scheme performance:

From the 2.68 million tonnes of furniture items put on the French market in 2018, more than 1.2 million tonnes were collected. From the waste collected 56% was recycled, 32% went to energy recovery, 1% was reused and 11% was destined to elimination by incineration. Recycling and reuse performances in 2018 of 57% exceeded the 45% target, however, recycling rates vary greatly from one material to another. Between 2014 and 2017, the tonnage of collected furniture increased by 87%, tonnages of reused furniture quadrupled, and landfilling of waste furniture reduced to under 22%.



● Furniture in France, 2018

Factors driving success:

Widespread geographical coverage of collection points – over 4,000 collection points are covering 96% of the French territory. Eco-mobilier's scheme enables easy deposit of household furniture (along with an online mapping of collection points); whilst Valdelia predominantly collects used furniture directly from professional furniture holders (e.g. hospitals, hotels).



Surveillance and transparency – PROs are required to report the results of the composition of waste collected to public authorities (ADEME), along with data on the reuse of furniture items on behalf of their collection partners. This data monitoring helps to ensure the traceability of waste produced.



Regulatory targets – set for separate collection and recycling/reuse rate of 25% and 45% respectively.



Promotion of sustainable methods – funding from eco-contribution fees is also used to incentivise waste management operators in carrying out recycling as opposed to landfilling activities, which is imperative given the high recycling costs. R&D activities are also conducted to improve the efficiency of recycling and valorisation methods.



Proportionate and fair contribution by member producers – the fees are proportionate to the quantity and type of product put on the market, whilst being large enough to cover the waste management operators' incentives to recycle.

4.3 Tyres in Belgium

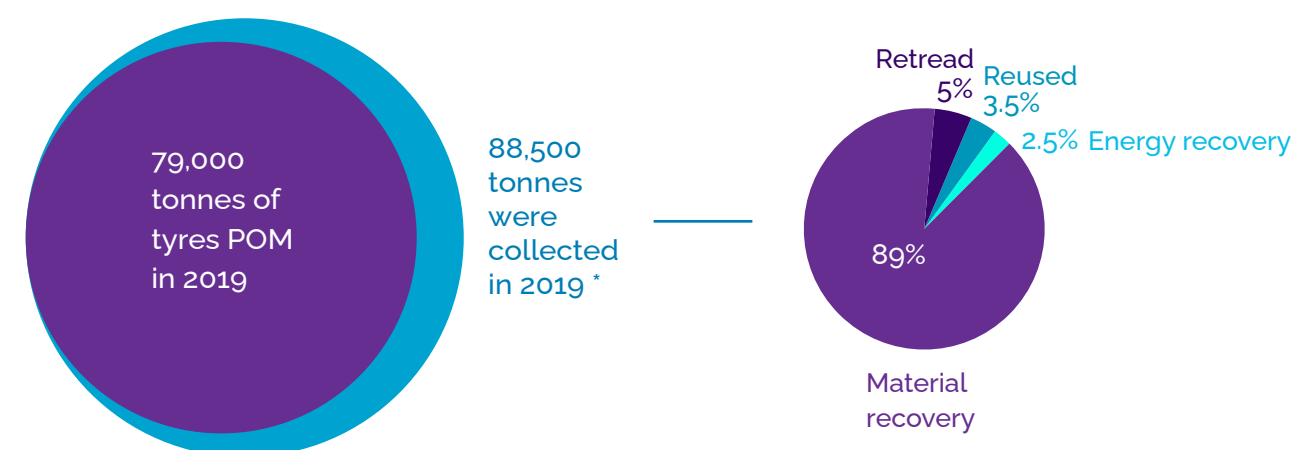
In Belgium, the EPR schemes for tyres represent an interesting case study as the three provinces of Belgium each have different regulations and targets in place. A single PRO in Belgium covers the three provinces and applies the obligations laid out by the most demanding regulation out of the three in order to ensure the highest level of compliance. Despite a complex regulatory framework, this EPR scheme has an outstanding collection rate of 100% and a recycling/reuse rate which reached 97% in 2019.

Under the Belgian Acceptance Duty, tyre producers have both a financial and operational responsibility to ensure collection and treatment of used tyres. Recytyre is the only PRO established in Belgium and organises the treatment of used tyres by contracting private companies who ensure the pick-up of tyres from collection points. Collection points are also offered by tyre distributors who have the obligation to take-back used tyres from consumers free of charge. Used tyres are then transported to approved treatment facilities, where they are sorted and treated under four options: reuse, retreading, material recycling or incineration with energy recovery. The PRO covers these costs with the fees paid by registered members, which are charged to consumers upon the sale of tyres. This eco-contribution fee is made visible on customers' receipts and is fixed according to set tyre categories. These fees also help to cover other activities managed by the PRO's including waste tyre prevention programmes, awareness raising campaigns and administration of the PRO.

In 2017, due to a limited number of valorisation methods for tyres and a small demand for the output, Recytyre supported operators responsible for the collection and treatment of tyres to find new valorisation methods (e.g. incorporation into new tyres, cement, iron, asphalt, granulate, etc.).

Scheme performance:

From the 79,000 tonnes of tyres POM in 2019, 88,500 tonnes were collected in 2019 (with a collection rate higher than 100% as the scheme covers tyres POM in previous years and those from neighbouring countries). 89% of this waste went to material recovery, 5% to retread, 3.5% to reuse and 2.5% to energy recovery. Between 2006 and 2019, material recycling of tyres increased from 40% to 97% and tyres destined to energy recovery decreased from 50% to 2.5%.



* with a collection rate higher than 100% as the scheme covers tyres POM in previous years and those from neighbouring countries.

● Tyres in Belgium, 2018

Factors driving success:



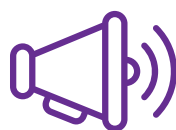
Widespread geographical coverage of collection points – all collection points, which are mostly the points of sale for tyres e.g. garages and tyre retailers, must accept the take back of waste tyres free of charge, even if no new tyres have been purchased. Municipalities may also carry out collections that are compensated by Recytre.



Surveillance and transparency – the PRO reports to the relevant public authority in each of Belgium's regions, and conducts regular inspections to monitor the achievement of targets established in the Acceptance Duty. An annual report outlining the total amount of tyres put on the market in each region, the total amount of used tyres fit for reuse that have been collected and the way in which the collected used tyres have been treated (including total amounts) must be delivered to the relevant public authority by the PRO.



Regulatory targets – a collection target for tyres of 100%, minimum material recovery target of 55% and a cap on tyres destined for energy recovery – 45% of total collected. Additionally, the waste hierarchy principle is reinforced as collected tyres are first and foremost to be sorted in function of reuse and retread. Landfilling of tyres is prohibited.



Strong awareness activities – waste tyre prevention programmes and innovation activities led by Recytre include conferences with industry actors to explore the diversification of commercial outputs for materials recovered from the recycling of used tires. Another awareness factor helping the successful recovery of used tyres is the visible contribution of the environmental cost of the tyre which is indicated on the consumer ticket at the point of purchase.

4.4 Oil in Canada

The management of used oil in Canada is regulated by each provincial government. This case study focuses on the scheme in British Columbia run by the British Columbia Used Oil Management Association (BCUOMA). This is particularly interesting as the PRO achieves a 100% collection rate for used oil, treats all the waste through recycling or energy recovery and has a widespread geographical coverage despite very low-density zones.

BCUOMA is the only PRO in British Columbia and oversees the collection and management of lubricating oil, oil filters, oil containers, antifreeze and antifreeze containers since 2004. In order to ensure sufficient collection points across British Columbia, BCUOMA provides infrastructure grants to municipalities, private businesses, non-profit organisations and other sectors that require additional infrastructure for their facilities. For example, in 2019, 39 infrastructure grants were provided to help ensure drop off locations in under-served communities around the province. BCUOMA also provides support (\$1500 per event) for community collection events operated by Regional Districts, municipalities and community groups.

Once the waste is at a collection point, BCUOMA compensates the registered processors who pay the collectors to pick up the waste used oil and antifreeze materials. The waste is then managed following the pollution prevention hierarchy, in order of preference: reuse, recycling, energy recovery, responsible disposal.

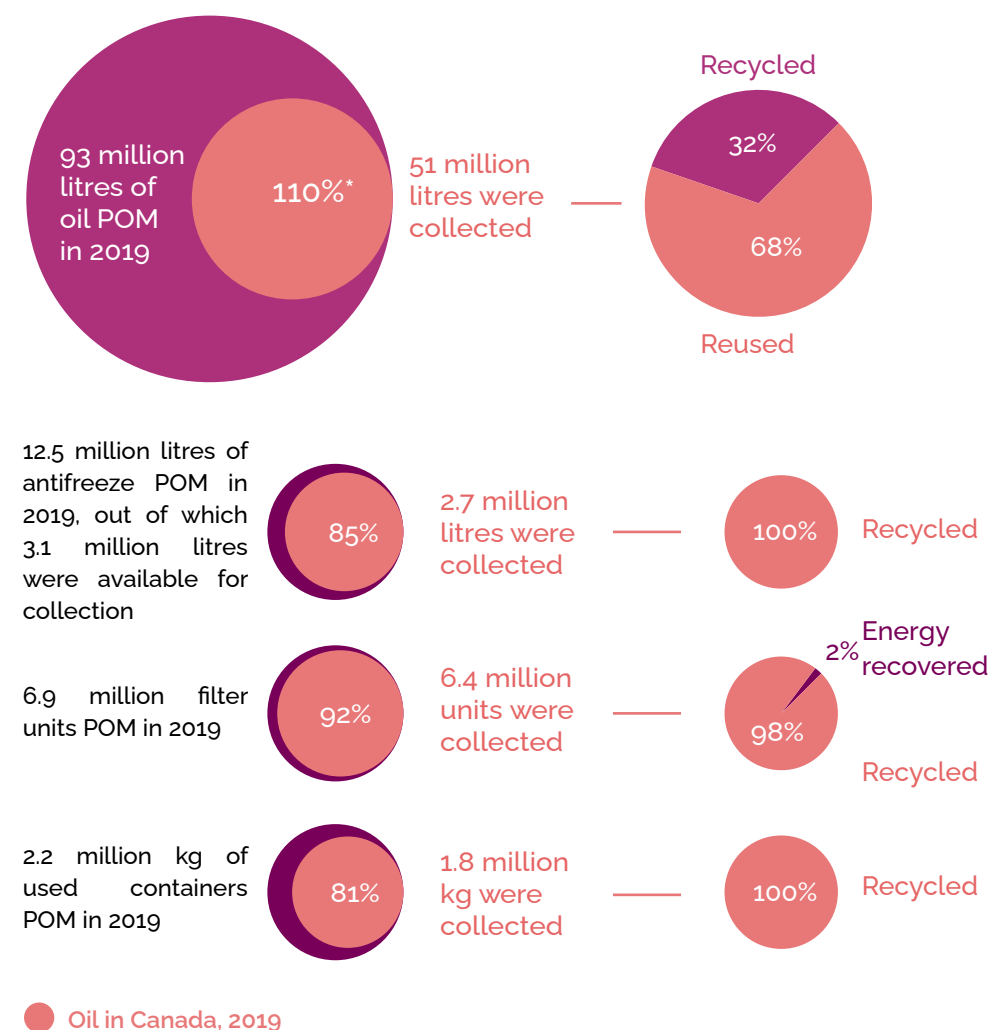
In addition, BCUOMA carries out consumer awareness activities including on the location of collection points. These awareness activities are targeting at small businesses and Do It Yourself enthusiasts that are generating small enough quantities of used oils which can be returned to a collection point. BCUOMA also communicates on the fees associated with the EPR program. The fees paid by the members are calculated based on sales volumes and are used to fund the PRO activities.

Scheme performance:

In 2019, from the 93 million litres of oil POM, 51 million litres were collected, BCUOMA states that only a portion of every litre of oil and antifreeze sold is available for recovery because an estimated 30% of the oil and 75% of the antifreeze is consumed during use. As such, BCUOMA states that the collection rate for used oil was of 110% from what has not been consumed through use, of which 68% was reused and 32% recycled. And of the 12.5 million litres of antifreeze POM (of which only 3.1 million litres were available for collection), 2.7 million litres (85%) were collected of which 100% were recycled.

From the 6.9 million filter units POM, 6.4 million units (92%) were collected, with 98% being recycled and 2% energy recovered.

And finally, of the 2.2 million kg of used containers POM, 1.8 million kg (81%) were collected and 100% were recycled.



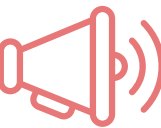
Factors driving success:



Widespread geographical coverage of collection points – producers are required to set up collection facilities for consumers free of charge (either at their retailers' locations or within a 4-10km radius of their premises) which must operate at least 5 days per week. Thanks to BCUOMA's incentive mechanism, 99% of citizens have 'reasonable' access to collection sites even in remote areas. This also represents a great incentive for producers to join BCUOMA rather than set up their individual system which would require them to cover the large geographical area.



Surveillance and transparency – BCUOMA is required to produce an annual report on the performance of its program, including the quantities of waste produced and collected and how the recovered products were managed in accordance with the Pollution Prevention Hierarchy.




Strong consumer-awareness activities – widespread consumer awareness activities are organised by BCUOMA including an online map to locate the nearest collection point, strong social media presence and community engagement street activities (e.g. awareness-raising stalls).



5. Conclusion

The collection and recycling of waste is crucial as it helps retain resources in the loop, avoid unnecessary CO₂ emissions and protect people from the potential impact of hazardous substances.




In 2020, Erion avoided the emission in the environment of 1.8 million tonnes of CO₂ equivalent.


While EPR is a tool capable of maintaining the value within waste products alongside ensuring environmental standards, it also represents an increasing administrative and operational burden for producers. Given the ever-changing policy landscape at the EU and Member State level, the requirements for producers are becoming increasingly challenging to meet. The creation of PROs by manufacturers comes from a natural will to concentrate the administrative and operational burden stemming from EPR policies, allowing them to focus on the delivery of constantly improved products instead.

As the case studies assessed in this report have demonstrated, in exchange for the eco-contribution fee paid by its members, PROs take on a series of producers' responsibilities, in most cases covering the full cost and organisation of waste collection and treatment, often alongside awareness campaigns and R&D activities that contribute to the critical prevention of waste generation. The fact that PROs have been created for the sole purpose of fulfilling these obligations, alongside the broader financial resources they can draw from as well as the operational efficiency they have garnered, substantially equip PROs for their waste management activities.


Still, despite these inherent attributes of PROs, the analysis conducted in this report has identified a series of good practices that can enable schemes to better perform their waste management responsibilities, while also pursuing economic efficiency, so as to provide their members with quality service without exorbitant costs. The practices outlined were as follows:



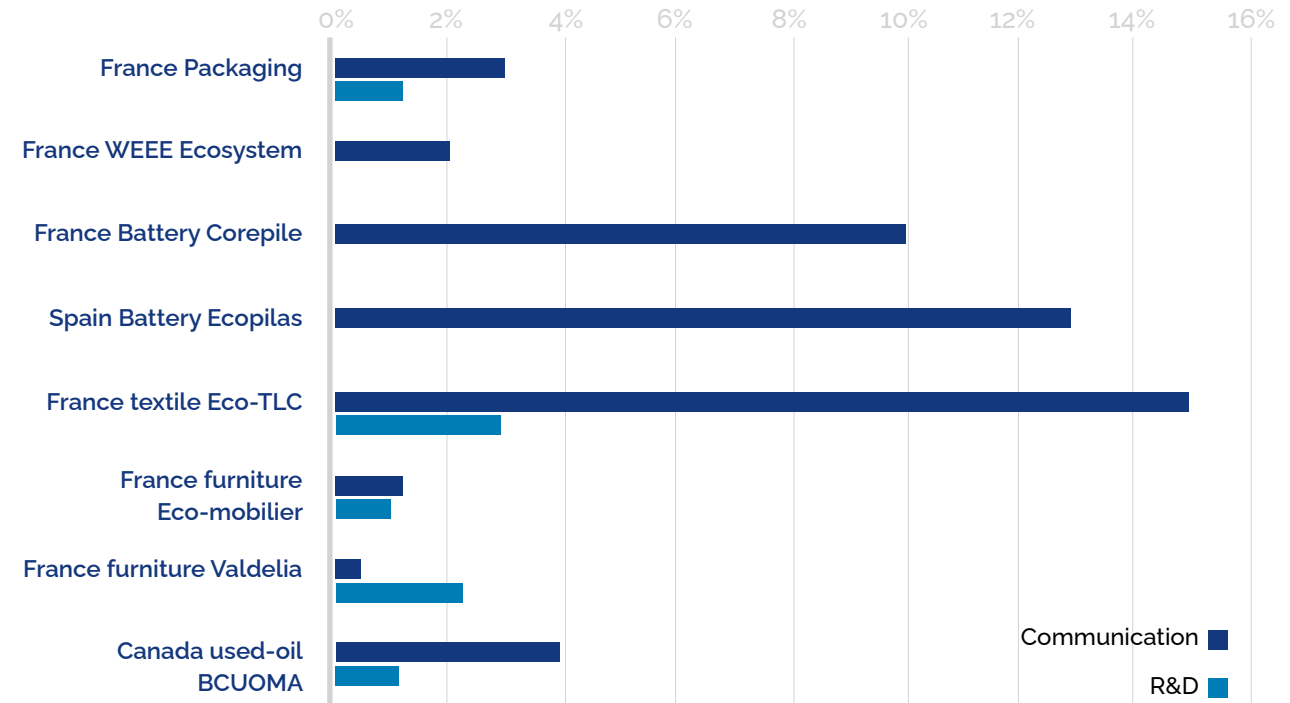
Aim to establish a **wide geographical collection system for waste** to provide an easily accessible return system for used products, key to maximising their recovery.




Provide **support to companies for the improvement of their environmental performance** through R&D (e.g. helping find new valorisation methods for used materials) as well as through fostering collaboration between their members (e.g. organising conferences with producers exploring key industry-wide recycling issues, eco-design guidelines, dedicated collection services). Many of the schemes assessed also fund innovation research to improve technological tracking of waste movements and develop alternative sustainable materials.




Conduct awareness raising activities for consumers (e.g. where and how to deposit waste; how collection/treatment is conducted) thus offering a single point of information dissemination for consumers. The following table shows the percentage of revenue spent on communication and R&D by the schemes that are allowed to disclose this information. As demonstrated, the percentage spent on communication can vary from 15% for the textile PRO in France all the way to 0.3% for the furniture PRO in France.




● Communication and R&D spendings in % of revenue



Track changes in regulations (and adapt systems in accordance) to ensure their members are compliant with new requirements and restrictions, along with regularly informing their members of expected changes and possible impact on business operations.

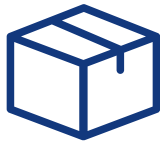


Ensure **efficient management and coordination of network of all the actors** involved in waste management (local authorities, collection facilities, sorting operators, treatment centres etc.).



Alternative sources of revenue have also been sought out by several schemes (e.g. offering consultancy services to members), and although these income streams do not cover operations which fall under the EPR obligations, they do allow for the development of additional activities (e.g. more extensive R&D, wider and more creative awareness campaigns etc.).

Most of these practices are incorporated by the schemes assessed in the report, which is reflected in their performance:



All the **packaging** schemes in the EU4 have achieved over 60% recycling rates (exceeding the EU directive target).



Since the start of the French **textiles** scheme, post-consumer textiles collection has risen annually by 13% (reaching a rate of 38.5% in 2019) along with a 6.1% rise in recycled textiles. Further, its reuse rate of almost 60% in 2019 already supersedes the legal requirement stemming from the new French CE Act of a 5% reuse rate of the household waste by 2030.



The Belgian **tyres** scheme has achieved a collection rate that exceeds the amounts put on market, and has increased recycling rate of tyres from 40% to 97% since its start.



The tonnage of collected **furniture** in France has doubled from 2014 to 2018, thanks to the PROs' work, with storage/landfill of waste furniture being reduced to under 22% and the recycling rate (57.6% in 2018) exceeding the 45% target. This presents a stark contrast to the estimated levels of incineration of furniture waste across the EU being 80-90%, with less than 10% being recycled in 2017.



BCUOMA in British Columbia achieves over 100% collection rate for used **oil** and treats all the waste through recycling or energy recovery (reaching 100% recycling rates for used containers and antifreeze, and 98% recycling rate for used oil).

It may be noted, that EPR schemes can take a series of forms, yet, regardless of a scheme's features, it should aim to incorporate the activities/roles enumerated above in order to ensure the provision of an effective collection system, a high reutilization rate and high-quality recycling. In this manner, PROs play a crucial role in facilitating and optimising waste management for producers and consumers.

Overall, collective EPR schemes allow producers to comply with ever-changing regulations while maximizing the financial, environmental and social benefits to society and to the producers.



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Case study 1: Textile in France		
Type	Comparative detail	
Country/General	Population of country	67 million (2019)
	Quantity put on market	648,000 tonnes of textiles POM (2019)
	Collection and treatment results	250,000 tonnes collected of textiles, of which: 58% destined for reuse; 33,5% for recycling, 8% for energy recovery (including Solid Recovered Fuel processing) and 0.5% disposed without energy recovery (2019)
	Collection Results by streams	Of items collected: 66% clothing; 19% home textiles; 15% footwear (2019)
	Regime (individual or collective)	Both: currently only one collective scheme in place, Eco TLC, however producers may organise their own recycling program which must be approved by French authorities.
	Competition	Between schemes: no (Monopoly of Eco TLC) ; Between treatment operators: yes
Scheme	Responsibility	Financial and operational
	Number of employees	9 permanent employees in the PRO (2019)
	Number of producers	1,500 membership agreements (including companies and associations) (2019)
	Market share	100%
	Cost coverage	100% coverage on costs for prevention, collection, transport and treatment of waste (sorting and elimination/reuse/recycling) including costs related to data transmission for monitoring of the sector.
	Value of recovered material retained by?	The sorting and recycling facilities are owned by private organisations, a major part of which are not-for-profit organisations such as Le Relais.
Operations	Transparency and surveillance	Producers are required to provide a certificate of veracity for their declaration of quantities placed on the market, which must be certified by a chartered accountant. This is then run through consistency checks, in addition to an annual third-party audit (commissioned by the Eco TLC). To benefit from financial support from Eco TLC, "sorting operators must meet also meet traceability conditions including reporting on the origin of the used TLC they sort (i.e. showing that they come from registered collection sources), to conform to various norms and conditions and to meet certain thresholds of valorisation."
	Profit (2019)	PRO is not-for-profit. Total revenue: €30 million
	Operational costs (2019)	(2019): Sorting costs: €16 million. Funding for local authorities' public awareness activities: €4.5 million. Funding for R&D: €0.8 million; Other operating expenses: -Consultancy, studies and audit fees: €0.74 million -Public relations: €0.5 million -Current operating expenses: €0.45 million -Taxes and fees: €13,115 -Payroll expenses: €0.97 million -Depreciation allowance: €0.14 million -Provisions against current assets: €0.3 million -Provisions for future expenses: €5,6 million
	Environmental benefits achieved (communication perspective)	Since start of EPR policy: 13% annual increase in post-consumer textiles collection 6% increase in recycled TLC 2% increase in reuse.

Operations	Factors driving collection & recycling rate	PRO increased consumer-awareness, number and accessibility of on-street collection bins and transparency of material and financial flows
	Collection points	Over 46,000 collection points nationwide (more than 1 collection point per 1,440 inhabitants). Collection points include: non-profit organisations, in-store drop-offs and one-off collections.
	Treatment operators	There are 63 authorised sorting facilities (49 in France and 14 in the rest of Europe) (2019). 18 centres are operated by Le Relais, 13 by independent operators and 18 by social entities (with >50% social inclusion employment positions) e.g. Emmaus centres.
	Communication activities	€2.5 million spent on financial support for local authority communication actions. Eco TLC internet presence: digital campaigns for raising awareness (reached 14.2 million people); have an app and social media pages.
Organization	Eco-modulation criteria in place?	Yes: Eco-Module (1) Tariff: 50% discount over normal tariff if products have a minimum composition of 15% of post-consumer recycled fibres/materials or Eco-Module (2) Tariff: 25% discount over normal tariff if products have minimum composition of 30% of pre-consumer recycled fibres. Eligibility for these tariffs is assessed by the PRO with supporting documents to prove criteria. Member companies whose revenue is under €750,000 or sell less than 5000 items per year have a fixed tariff of €36 plus VAT.
	Deposits schemes in place?	Eco TLC ensures that the entire national territory is covered with voluntary intake points for used TLC. The national target is set at 1 per 1,500 inhabitants by 2019.

Case study 2: Furniture in France			
Type	Comparative detail		
Country/General	Population of country	67 million (2019)	
	Quantity put on market	2.68 million tonnes of furniture items POM (2018)	
	Collection and treatment results	1.2 million tonnes collected, of which 56% recycled; 32% energy recovery; 1% reuse; 11% elimination by storage or incineration (2018)	
	Collection Results (%) by streams:	Kitchen (21%), chairs (16.6%), bedroom (16.6%), living and dining rooms (12%), auxiliary (12%), bedding (6%), office (6%), bathroom (3%), garden (2%), technical/commercial furniture (5%), upholstered seating (0.5%) (2017).	
	Regime (individual or collective)	Both: 2 collective schemes currently in place, however producers may organise their own recycling program which must be approved by French authorities.	
	Competition	Between schemes: Eco-mobilier (oversees management of furniture waste from both household and non-household holders) Valdelia (oversees management of furniture waste solely with non-household holders, so only collects waste furniture from voluntary drop-off points or directly from non-household holders.) Between treatment operators: yes	
Scheme	Responsibility	Financial and operational	
	Number of producers	5,500 producers adhered to Eco-mobilier (2019)	1,100 producers to Valdelia (2019)
	Market share	100% of household furniture	100% of non-household furniture
	Cost coverage	100% coverage on costs for collection, sorting and treatment of waste furniture (reuse, recycling, energy recovery, incineration) + public awareness campaigns and eco-innovation for waste prevention.	
	Value of recovered material retained by?	Processors (sorters and treatment operators) keep the value	
	Transparency and surveillance	PROs are required to report to ADEME the results of the composition of waste furniture items collected, also data relating to the reuse of furniture items on behalf of their collection partners; PROs must roll out external auditing of market data declared by its members.	
Operations	Profit	Not-for-profit.	
	Operational costs	Eco-mobilier (in millions): €169 for operational costs, €46 for support to collection partners, €1.4 for communication activities, €2.6 for R&D, Internal operating costs: €9.3. (2019)	Valdelia (in percentages of cost-breakdown): 20% for operational costs**, 0.3% for communication activities, 2.3% for R&D, internal operating costs: 4.0%. **operational costs: organising collection, sorting, treatment etc. (2019).
	Environmental benefits achieved (communication perspective)	87% increase in tonnages of furniture waste collected from 2014 to 2017; tonnages of reused furniture have quadrupled between 2014 and 2017; storage/landfill of waste furniture has been reduced to under 22%. Recycling/reuse performance in 2018 (56.9%) exceeded the 45% target. However, processing performance varies greatly from one material to another. Recycling predominates for mattresses, glass, plastics, metal and wood.	
	Factors driving collection & recycling rate	Target for separate furniture waste collection of 25% and of 45% recycling and reuse rate.	
	Collection points	4,000 voluntary drop-off points (Eco-mobilier).	136 for Valdelia voluntary drop-offs points. Valdelia only collects waste furniture from voluntary drop-off points or directly from professional holders.

Operations	Treatment operators	Sorting and processing facilities under contract with the PROs. Part of collection operators specialise in directing waste furniture to reuse: The PROs have partnerships with associations that collect furniture and then re-market usable furniture. What can't be reused is collected and directed towards sorting and treatment operators.	
		Number of partnerships with associations that collect furniture and then re-market usable furniture: 370.	Number of partnerships with associations that collect furniture and then re-market usable furniture: 136.
	Communication activities	Regular articles and press towards public and industry by both PROs, online presence (social media, online collection point map), significant online awareness campaigns.	
Organization	Eco-modulation criteria in place?	Eco-modulation fee criteria set by PROs: 1) Furnishing units made up of over 95% solid wood (without associated padding material), and certified (FSC or PEFC) 2) Furnishing units made up of over 95% (without associated padding material) 3) Scalable furnishing units (products whose size can be adapted to the size of the user as they grow; products which can change their main function).	
	Deposits schemes in place?	No obligation for retailers to take-back used furniture items for free.	

Case study 3: Tyres in Belgium		
Type	Comparative detail	
Country/General	Population of country	11.5 million (2019)
	Quantity put on market	79,000 tonnes of tyres POM in 2019
	Collection and treatment results	89,000 tonnes of tyres collected; 89% of which to material recovery (granules 87%, steel: 2%, used for creating art: 0.03%), 5% to retread, 3.5% to reuse and 2.5% to energy recovery (2019).
	Collection Results (%) by streams:	58,3% tourism (4x4, SUV, utility vehicles, caravans, cars), 31,2% trucks and lorries, 2,6% aerial and solid industry,5,4% agricultural sector, 2,5% civil engineering; (2019)
	Regime (individual or collective)	Collective
	Competition	Between schemes: No – Monopoly of Recytyre. Between treatment operators: yes
Scheme	Responsibility	Financial and operational
	Number of employees	15
	Number of producers	763 private sector members registered with Recytyre.
	Market share	100%
	Cost coverage	100% coverage of collection and treatment of tyres, waste tyre prevention programmes (awareness campaigns), administration of the PRO. Clean-up cost for illegally disposed tyres is not covered and is instead covered by municipalities (i.e. taxpayers) wherein some of the costs are not covered by the EPR scheme. Vendors and intermediaries have a take-back obligation with a 100% target and of charging advanced disposal fee to consumers.
	Value of recovered material retained by?	Tyres have a negative value.
Operations	Transparency and surveillance	Advanced disposal fee for tyres is in the form of a visible fee. OVAM (Public Waste Agency of Flanders) evaluates Recytyre's plan, conducts inspections on a regular basis (and can fix sanctions for non-compliance), monitors achievement of targets established in Acceptance Duty (environmental agreement).
	Profit	PRO is not-for-profit. Turnover: €25 million (2019)
	Operational costs	Sales and operational costs: €24 million (2019). Recytyre's collector partners collect and process used tyres for which they are then remunerated by Recytyre. Recytyre also covers costs related to the obligation to provide information, to waste prevention, communication activities and to the internal operations of the PRO. Most municipalities have signed an agreement with Recytyre for the free collection of used tyres.
	Environmental benefits achieved (communication perspective)	Increased collection rates and promotion of resource efficiency with increase in material recovery through reuse, retread and recycling.
	Factors driving collection & recycling rate	100% collection target; caps on tyres destined to energy recovery (45%) and minimum material recovery targets (55%). Landfilling of tyres is not permitted.
	Collection points	5,400 active collection points: Main points of collection are garages or tyre retailers, although municipalities continue to collect tyres on a voluntary basis. Vendors and intermediaries have a take-back obligation with a 100% target and of charging advanced disposal fee to consumers. Take back obligation covers two markets: replacement market and original tyre equipment market.
	Treatment operators	43 Collectors who deliver the tyres to mainly private treatment facilities (11 pre-treatment facilities + 80 Valorisation facilities). Recytyre's collector partners collect and process used tyres which they are then recompensed by Recytyre. Since 2017 Recytyre has started purchasing a part of used tyres (13,8% of total used tyres collected in Belgium in 2019) from certain recycling operators who were overburdened, with the PRO taking responsibility for recycling part of used tyres collected.
	Communication activities	Annual reports and consumer-oriented information are published on website.

Organisation	Eco-modulation criteria in place?	No. Fee calculated by type of tyre (arranged by category) and ranges from 1.32€ to 794€.
	Deposits schemes in place?	Retailers are obliged to act as a collection point for used tyres.

Case study 4: Oil in Canada		
Type	Comparative detail	
Country/General	Population of country	Population of British Columbia: 5.1 million (2019) - [population of Canada: 37.6 million]
	Quantity put on market	(2019): 93 million l of oil; 6.9 million filter units; 2.2 million kg of containers; 12.5 million l of anti-freeze
	Collection and treatment results	Collection rates: 110% of used oil; 92% of filters; 81% of containers; 85% of used anti-freeze. (From the oil estimated to be available for collection, collect 110% is collected, 10% comes from oil that was assumed non recoverable). From collected volumes: <u>used oil</u> : 32% recycled and 68% reused; <u>oil filters</u> : 98% recycled, 2% energy recovery; <u>containers</u> : 100% recycled, <u>used antifreeze</u> : 100% recycled
	Regime (individual or collective)	Both: one collective scheme in place, however producers may organise their own recycling program.
	Competition	Between schemes: British Columbia Used Oil Management Association (BCUOMA) covers the collection and recycling of used oil, used antifreeze, oil filters and related containers throughout British Columbia. BCUOMA is one of 6 EPR schemes for used oil in Canada (the others are Alberta Recycling, MARRC, SOGHU, SAARC and UOMA). Each scheme covers one province and there is no geographical crossover between them.
		Between treatment operators: yes
Scheme	Responsibility	Financial and operational
	Number of employees	9 in board of directors
	Number of producers	250 members
	Market share	100%
	Cost coverage	100% coverage of collection (producers must have and operate collection facilities for their used products), sorting and treatment of the products, awareness campaigns (inform consumers of deposit schemes), report to authorities quantities of waste produced/collected. Producers must set up free of charge collection facilities for consumers, and must be located within 4km of the retailers' premises, or, if retailer is located outside a municipality with a population greater than 25,000, within 10 km.
	Value of recovered material retained by?	Processors registered with BCUOMA process materials and which can then be reused or sold as raw material inputs.
	Transparency and surveillance	Producers contravening obligations under BC Recycling Regulation are liable for fine of up to \$200,000. BCUOMA is required to produce an annual report on the performance of its program, including how the recovered product was managed in accordance with the Pollution Prevention Hierarchy (British Colombia environmental regulation).
Operations	Profit	PRO is not-for-profit. Turnover: \$14.4 million (2019)

Operations	Operational costs	<p>The PRO covers collection and processing: Processors and collectors register with BCUOMA. BCUOMA pays registered processors who pay the collectors to pick up used oil and antifreeze materials either from the 4,000 registered generators, commercial facilities (e.g. service stations) or from small consumers that deposit their oil in Return Collection Facilities (RCFs). BCUOMA covers the rest of the costs enumerated in the "cost coverage" section (consumer awareness, education, auditing and reporting etc)- Extra costs: BCUOMA provides an infrastructure grant program to ensure there are sufficient return collection facilities (RCFs) across BC for consumers to take back their used oil at no charge. Grants are offered to RCF municipalities, private businesses, non-profit organisations and other sectors that require additional infrastructure for their facility ex. 39 infrastructure grants in 2019 to help ensure there were consumer drop off locations available in under-served communities around the province. BCUOMA also provides support (\$1,500 per event) community collection events operated by Regional Districts, municipalities and community groups: supported 12 in 2019.</p> <p>BCUOMA (2019) [in Canadian Dollars]: Return Incentives: 13.8 million, Communications: 520,000; Return Collection Facility Operations: 115,000; Technology support and investment: 135,000; Compliance Audits: 58,000.</p>
	Environmental benefits achieved (communication perspective)	Recovery rate increases from 2003 vs 2019: for used oil from 64% to 110%, for filters from 82% to 92%, for containers from 40% to 92%, for antifreeze from 40% (in 2011) to 85%.
	Factors driving collection & recycling rate	Extensive geographical coverage of RCFs (99% of British Columbia residents have 'reasonable' access to RCFs), free collection/take-back for consumers, widespread consumer awareness activities
	Collection points	Return Collection Facilities (RCFs): there are 274 in 2019. These RCFs are often located in high traffic retail locations but can also be located at industrial sites, multi-material private depots (bottle depots) and local government recycling/landfill sites) – 99% of British Colombians have "reasonable" access to an RCF. The scheme also collects from over 4,000 generators in BC.
	Treatment operators	32 registered processors
	Communication activities	Has an online map to find location. Social media and online advertising, television spots, community engagement street activities.
Organization	Eco-modulation criteria in place?	No. EHC paid based on sales volumes- for lubricating oil \$0.05 per litre; for containers: %0.10 per litre of container size; for filters \$0.55 - \$1.25 (depending on size); for antifreeze \$0.20 per litre
	Deposits schemes in place?	Producers must set up free of charge collection facilities for consumers, and must be located within 4km of the retailers' premises, or, if retailer is located outside a municipality with a population greater than 25,000, within 10 km.



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