REDUCING PLASTIC WASTE IN CANADA

Funded by the European Union

Applying Extended Producer Responsibility to the ICI Sector

Case Studies and Lessons from the European Union

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Introduction

As part of the European Union's (EU) "*Reducing Plastic Waste in Canada*" project, the EU is collaborating with leading organizations in Canada to share best practices and create networking opportunities to reduce plastic waste. The two-year project launched in 2021 as part of the Circular Plastics in the Americas Program contributes to the EU's commitment to the United Nations Sustainable Development Goals. The project focuses its activities in areas of interest to Canada to enhance knowledge and build collaborations to accelerate the transition to a circular plastics economy in support of Canada's National Strategy and Action Plan on Zero Plastic Waste.

Canada has well over 10 years of experience with Extended Producer Responsibility (EPR) with varying approaches, successes, and lessons from its implementation in provincial jurisdictions. The evolution and growing acceptance of EPR as a policy approach continues to challenge practitioners and industry's thinking on the most efficient ways to implement EPR across a range of product categories. Beyond increase the efficacy of existing programs, there are many policy discussions about how EPR schemes can influence product design, reuse and expand material collection and recovery. There are good examples of successful EPR programs in Europe that increase available materials for recycling by capturing those generated by the industrial, commercial and institutional sector (ICI). In fact, proposed new European policy requirements and recycling targets[1] will certainly push more countries to expand the range of materials being collected through the EPR schemes.

As some provinces in Canada are, or intend to, move forward with EPR schemes for the ICI sector, information on diverse approaches for capturing ICI material can benefit the development of suitable approaches to expanding the recovery of materials, including plastics, from this sector. Lessons and experiences from European counterparts and discussions among peer stakeholders can enlighten and eventually strengthen existing systems in Canada.

This report focused its attention on three cases studies of EPR for the ICI sector: Italy, Belgium and Austria. These countries were selected based on their different approaches and the sufficient maturity of their programs to provide useful lessons for Canadian stakeholders. Using literature and key informant interviews, the report reviewed the legal basis and framework of the schemes, producers' obligations, various system elements and performance of the selected EPR schemes. From this review, general conclusions and lessons useful to the Canadian context are highlighted in the following sections.

[1] European Union. 2022. Proposal for a revision of EU legislation on Packaging and Packaging Waste. Available at : https://environment.ec.europa.eu/publications/proposal-packaging-and-packaging-waste_en

Legal framework and producers' obligations

Clear and definite legislation

Legislating the management of ICI packaging waste is the first step to enable effective collection and recycling of all packaging from this sector. In all case studies, a regulatory measure clearly directed the recovery of these materials: either the regulation specifically targets ICI packaging (e.g., Austria), or targets all packaging (without excluding generating sources), thus including the ICI sector (e.g., Italy). In other European jurisdictions (e.g., France, Spain, Germany), EPR or waste management legislation is unclear about ICI generators, and the packaging waste management systems centered around the household (HH) sector with less centralized efforts for the ICI sector.

One important parameter when it comes to ICI packaging waste regulation is how some very specific materials are considered, giving they usually enter in a grey zone of the legislation. For this report, closer examination of two packaging types--reusable packaging and packaging of hazardous products—was conducted.

Reusable packaging

In various industries in Canada, reusable packaging has grown, especially when the value chain remains regional or even national. For instance, barrels and totes in the agricultural sector, pallets in transportation, plastic trays in bakeries. Encouraging reusability in EPR schemes through regulatory requirements can help overcome some barriers faced by the industry, including logistics coordination, costs, and lack of standardization.

In the cases studied, reusable packaging was specifically included (e.g.,Austria, Italy) or excluded (e.g., Belgium) from the producers' obligations. Whether included or excluded, PROs can decide to request fees or not, to promote the reusability. They generally request reporting of the quantity of reusable packaging put on the market to be shared for compliance purposes.

Packaging of hazardous products

Some packaging containing hazardous products are already being targeted in various jurisdictions across Canada (i.e. used oil containers, pesticides containers). However, it is not the case for all packaging, and it could lead to some municipal programs accepting contaminating containers. Whether recyclable or not, processing packaging containing hazardous substances require a specific process to prevent harm to the environment.

In the cases studied, hazardous waste packaging are generally included in the scope of the regulations, but exemptions could be granted, or specific management rules required (e.g., Belgium). Even if targeted in legislation, there can remain some uncertainty regarding who is responsible for managing a broad range of packaging that contained hazardous. Nevertheless, PROs tend to consider those packaging separately and decide to have specific program(s) for their separate collection and recycling.

Flexible implementation

How legislative requirements are implemented in different jurisdictions varies considerably taking into account infrastructure, market opportunities and existing systems for managing waste in ICI facilities or businesses. For some (e.g., Belgium, Austria), a specific set of rules for ICI packaging are

established which differs from household ones. The regulations identify targeted packaging using two main criteria: point of generation, and size. Usually, materials generated at small ICI or that are similar to household packaging (e.g., bottles) are managed through HH schemes, while larger packaging (e.g., pallet wrap, barrels) or generated in the industrial sector will be captured by the ICI scheme. This approach allows collection of specific data on the ICI packaging waste (e.g., supplied and collected quantities) and appropriate setting of fees for the ICI stream different from the household stream.

In contrast, Italy established the same rules for ICI and HH which limits the ability to publicly report on specifically on the sector's performance, although the Producer Responsibility Organization (PRO) managing the scheme may have more granular information by sectors and subsectors.

Regardless of the regulatory approach, the system for collecting and recycling for the ICI sector is generally more flexible and adapted to the needs of generator than it is in for the households (see section "PROs role and responsibilities).

Producer Responsibility Organizations role and responsibilities

The roles of the PROs in facilitating the implementation of EPR schemes for the ICI sector are very different than those of PROs dedicated to household schemes. The former usually act as a facilitator/broker between waste generator and waste service providers and data manager, while the latter focus on managing a centralized system seeking scale and efficiencies.

The method used in each case studies is based on financial incentives and/or logistical support:

- In Belgium, a series of incentives and education tools are offered for businesses to add recyclable bins in their facilities and to contract with waste service providers;
- In Italy, the main PRO (CONAI) offers a network of 580 platforms (e.g. consolidation and/or sorting facilities) that is accessible for ICI packaging waste free of charge;
- In Austria, Regional Transfer Center (like Italian platforms) can be used by ICI waste generators, and some businesses can act as major point of accumulation for other smaller entities.

All PROs stressed the reliance on collaboration with market actors in order to fulfil their roles of helping producers meeting their obligation regardless of their operation model. They intervene on a very limited basis in what is already being collected successfully such as cardboard or metal, but instead, help businesses and organizations overcome barriers to expand collection and recycling to other materials such as plastics: costs and storage capacity for waste generators, lack of economy of scale for service providers.

As a result, the free-market remains the basis for contractual agreements between generators and service providers, except for some uniquely challenging packaging that benefit from dedicated programs. In Belgium for instance, Valipac has implemented a collection program for plastic film generated in the construction sector. In Italy and Austria, where the legislation allows for multiple models to be developed, PROs have been created for the collection and processing of packaging such as plastic film or vegetables crates and pallets. Those programs are usually managed by specific producers, or even by recyclers (e.g., plastic film collection program managed by a plastic film recycler).

By doing so, PROs can overcome a key barrier in implementing recycling programs: lack of data. This is a main challenge to implementing ICI dedicated programs noted by industry. The data gap also limits the ability of governments to introduce ambitious yet realistic targets.

Finally, most of the cases studied show how they respond to national circumstances and are tailor-made, either by the market or by the specific programs. Even for out-of-home generators (e.g., stadium, train station, etc.), programs take into consideration multiple factors such as transportation, consumer habits and type of material generated. The only exception is for small ICI generators. They are for the most part allowed to use the HH collection and recycling infrastructure, even if it means a great deal of coordination when there are many generators and PROs involved. By allowing small ICI generators to be included in the HH system, it prevents free-riders and ensure PROs for those materials pay for their share in the HH system even if it's not a legal obligation.

Take-away of the analysis for Canadian stakeholders

While no EPR system is perfect and there is not one-size fits all approach, the case studies from Europe highlight how schemes are effectively collecting and recovering ICI waste plastics from the ICI sector and working to overcome many common challenges: lack of data, costs of collection and processing for waste generators, lack of economy of scale for service providers, and co-existence with household EPR programs.

Five (5) lessons can be drawn from the analysis

1. It is essential to **clearly target ICI packaging waste in EPR regulations** to ensure the collection and processing of all packaging, and not only those with high market value.

2. **Packaging waste generated in the ICI sector varies significantly** and cannot be seen as a homogeneous waste stream:
    - Some are similar to household packaging waste, but are generated in workplaces, commercial, recreational facilities and institutions; they can be collected through household programs or take advantage of similar infrastructure;
    - Some are very industry- specific and can best take advantage of a dedicated program, including those for reusable
    - Some are larger packaging or are generated in large quantities requiring independent management.

3. Experience has shown that EPR in the ICI sector does not necessarily mean a take-over of producers' current role or centralization of waste management systems**. PROs do not need to intervene in established relationships between generators and service providers** but are needed to provide tracking and reporting services and support for more challenging materials (e.g., plastics) and/or smaller businesses.

4. **The market is an important driver** that drives the management of some packaging (e.g., cardboard, metal) but incentive programs are needed for plastics where markets may be less established or volatile.

5. **Logistical support and incentives to overcome barriers and find solutions are a value-added role** in addition to information sharing and reporting services on quantity collected and recycled from the industry.

Appendix - Case Studies:

1. Italy
2. Belgium
3. Austria

Case Study 1: Italy

6 Take-aways from the Italian case study

1. By-law, all packaging waste, including from ICI, must be managed according to the first legal framework adopted in late 1990's. Specific and ambitious targets by material must also be reached.
2. There is one umbrella organization, CONAI, in charge of implementing the EPR system and responsible for the costs of collection, sorting and recycling.
3. The whole EPR system is operated on a material-basis: Material consortia (one for each material, including one for plastics) is in charge of overseeing the collection, sorting and recycling operation provided by external service providers.
4. Autonomous systems for very specific product, such as plastic film or plastic crates co-exist with the CONAI system.
5. For the ICI sector, the CONAI EPR system guarantees free-market conditions for the collection and processing services. CONAI and its consortia are only involved when cost-effectiveness makes it impossible to operate a market-driven recycling system.
6. A network of facilities (MRFs, transfer stations, recycling plants) are available for the ICI generators and collectors, and their services are paid by CONAI. This helps keeping materials in Italy for recycling.

Legal framework and producers' obligations

In Italy, the legal framework has changed in 2020 in response to the European Union's new Packaging Directive. The Legislative Decree 152 was revised into the Decree 116/2020 that introduced new and more ambitious targets and the revision of the governance packaging waste management model[2].

This Decree recognized CONAI (*Consorzio Nazionale Emballaggi*), a private non-for-profit consortium, as the implementation agent of the extended producer responsibility system. This includes, among others, the following responsibilities:

- Define and set the environmental contribution for the producers (i.e. fees)
- Elaborate the General Programme for the Prevention and Management of Packaging and Packaging waste (i.e. Stewardship Plan)
- Act as the accountable organisation to the competent authorities and report on recycling and recovery rates.

[2] CONAI. 2021. General prevention and management programme for packaging and packaging waste. Available at: https://www.conai.org/en/about-conai/

To fulfil its obligation, CONAI has established a system based on "Material consortia", private and non-profit organizations offering a market support role to the waste collection and recycling operations. There are seven material consortia, each overseeing the management of a specific material[3] based on the plans and performance criteria established:

- RICREA: Steel
- CIAL: Aluminum
- BIOREPACK: Bioplastic
- COMIECO: Paper and cardboard
- RELIGNO: Wood
- COREVE: Glass
- COREPLA: Plastic

While CONAI represents mainly producers and users of packaging products (e.g., converters and brand owners), their board also includes government representatives[4]. Material consortia like COREPLA represents a broader part of the value chain[5] reflecting its complexity:

- Companies producing plastic material for the production of packaging (e.g., petrochemicals companies).
- Companies producing plastic packaging (e.g., converters).
- Companies using plastic packaging (ie.g., brand owners).
- Companies that recycle or recover plastic packaging waste after use (e.g., MRFs and recyclers).

The Decree also provides packaging producers with alternatives to joining the material consortia established under CONAI. In fact, they can autonomously organise the management of their own packaging waste throughout the national territory. To date, there are three autonomous systems, all involved in the plastic packaging value chain:

- Aliplast, dedicated to the PET and PE films generated mainly in the commercial and industrial sector.
- CONIP, dedicated to a reuse system for plastic crates and pallets used in the food retail sector.
- CORIPET, dedicated to PET beverage bottles.

In accordance with current legislation, CONAI and the autonomous systems implement a framework programme agreement on a national basis with the National Association of Italian Municipalities (ANCI), with the Union of Italian Provinces (UPI) or with the management bodies of the Optimal Territorial Ambit. The agreement guarantees the coverage of the costs deriving from the services of separate collection, transport, sorting and other preliminary operations of packaging waste, as well as the methods of collection of the same waste for recycling and recovery activities. The programme agreement is made up of a general part and the relative technical annexes for each packaging material and is also signed by the Material Consortia and the managers of the sorting platforms. The figure below illustrates the relations between all stakeholders involved.

[3] The rest of the document will focus only on the plastic stream, therefore will analyze only the COREPLA structure
[4] CONAI. 2022. Governance. Available at : https://www.conai.org/en/about-conai/governance/
[5] COREPLA. 2022. Company Profile. Available at : https://www.corepla.it/en/company-profile

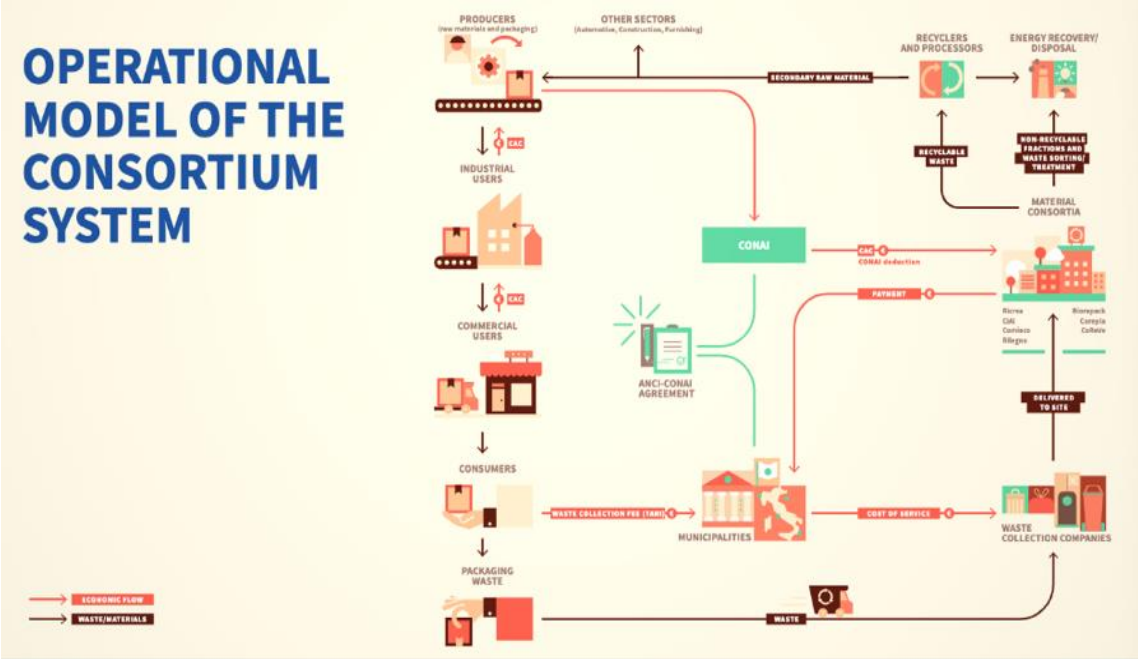

Figure 1 – Operational model of the Consortium System (Source: CONAI)

According to the law, all packaging is targeted and producers shall meet their obligations[6], whether primary, secondary or tertiary. The definition even includes reusable packaging and packaging that has contained hazardous products. However, recycling targets do not distinguish whether a packaging is from the household or the ICI sector, as shown in the table below[7], therefore lacking an analyse of the ICI specific performance.

Material	2025 Recycling rate target	2030 Recycling rate target
Steel	70 %	80 %
Aluminum	50 %	60 %
Paper	75 %	85 %
Wood	25 %	30 %
Plastics and Bioplastics	50 %	55 %
Glass	70 %	75 %
TOTAL	65 %	70 %

Table 1 – Recycling rates as set by the regulation (Source: CONAI)

PROs role and responsibilities

CONAI/COREPLA vs independent operators

Italy has developed its EPR system based on a material-approach with one organization, CONAI, responsible for implementing the legislated EPR requirements across the country and accountable

[6] CONAI. 2022. What's is not Packaging. Available at : https://www.conai.org/en/businesses/what-is-not-packaging/
[7] CONAI. 2022. General Programme for the Prevention and Management of Packaging and Packaging Waste. Available at : https://www.conai.org/wp-content/uploads/2022/10/PGP_CONAI_2022_ABSTRACT_EN.pdf

of reaching recovery and recycling targets. It oversees Material Consortia which role is to "organise a network of transport, sorting and processing centres throughout Italy"[8].

The approach, however, allows for complementary systems (e.g., independent operators, autonomous systems) to operate where the free market cannot effectively do so (e.g., on a product basis). For example, for ICI waste packaging, the system guarantees free-market competition, and an organisation like COREPLA acts as a support to the market where there is a lack of cost-effectiveness structure. Otherwise, independent operators manage collection and recycling, and provide data to CONAI to fulfil its accountability role.

Independent operators manage 48 % of waste sent to recycling, while the Material Consortia collects and process 50 % [9]. The remaining 2 % is managed by autonomous system. As illustrated below, the management approach varies from one material to another. While paper or aluminium are mainly managed by the market, COREPLA manages most of plastic packaging waste.

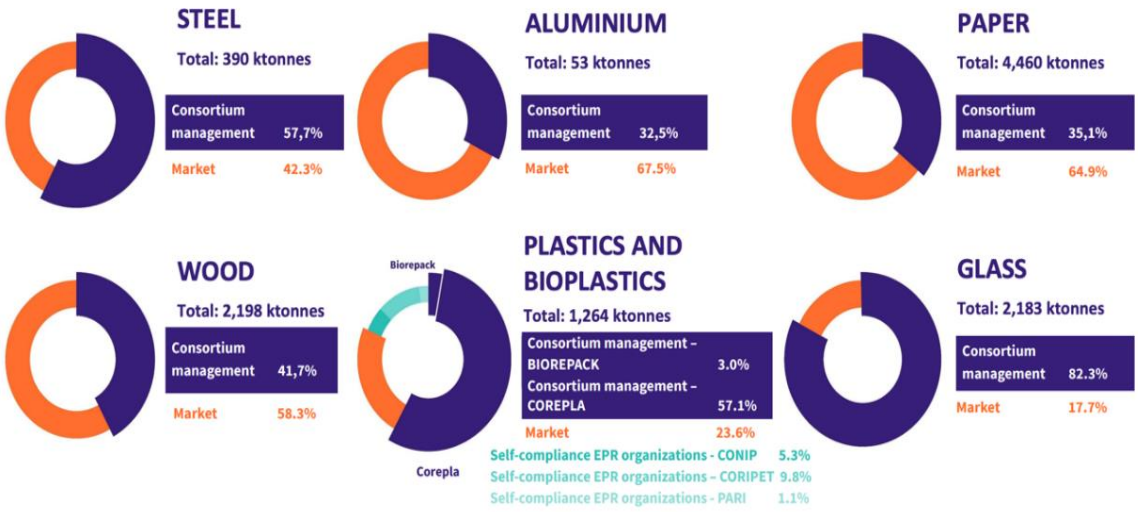

Figure 2 – Contribution to total material management by material, according to the system (Source: CONAI)

To ensure the management of ICI packaging waste, material consortia like COREPLA have created a network of 580 platforms throughout the country, capable of receiving packaging waste from industrial, commercial, craft and service companies free of charge, since CONAI bear the costs of sorting and recycling activities.

A platform is defined as a material recycling facility (MRF), a recycling plant, or an intermediate station (i.e. transfer station). Some plants can be dedicated to refurbishment (e.g. drums and tanks washing), to sorting materials, or to direct recycling of specific materials (e.g. plants dedicated to EPS recycling). In every platform, a strict characterization process allows, among others, to measure the quantity of materials from household and ICI.

[8] COREPLA. COREPLA's Activities. Available at : https://www.corepla.it/en/coreplas-activities

[9] CONAI. 2022. General Programme for the Prevention and Management of Packaging and Packaging Waste. Available at : https://www.conai.org/wp-content/uploads/2022/10/PGP_CONAI_2022_ABSTRACT_EN.pdf

Autonomous systems

The material-based approach for collection and further processing is also what guides the autonomous systems operations, specifically for those dedicated to the ICI sector.

Thus, Aliplast, a plastic film recycler and manufacturer has organized a system in which it collects films directly to the end-user (either itself or through independent collectors) and recycle it into new films application[10]. CONIP organize the collection, refurbishment and recycling of pallets and crates use in the fruit and vegetable industry. It works directly with collectors and recyclers[11]. Finally, CORIPET is a PET bottle-to-bottle recycling system, which organizes the collection of PET bottles, including out-of-home areas such as at work, retail places or schools[12]. It should be noted there is no deposit scheme for beverage containers in Italy.

Recycling performance

According to CONAI, the overall recycling rate, calculated on the quantity of material supplied by producers, is established at 73,3 % for 202013. The system already outperformed the overall recycling rate target, and, in the case of plastic waste, is close to reaching the 2025 target with a recycling performance of 48,7 %. Of all the 10,5 M tons of materials sent for recycling, 90 % was processed in Italy.

Unfortunately, there is no specific information on ICI performance. The table below provides information gathered through the reporting of independent systems for plastic.

Managed by	Quantity managed for recycled (2020-2021)
COREPLA	165 000 tonnes[14]
Independent	298 304 tonnes[15]
CONIP	60 000 tonnes[16]
Aliplast	80 000 tonnes[17]

Table 2 – Quantity of ICI plastic material managed for recycling in Italy

Economic performance

In 2021, CONAI's turnover was established at 1,686 M€, with 28 % coming from material sale and 70 % from EPR fees[18]. 57 % of expenditures comes from for collection and 34 % from recycling and energy recovery operations, but not information on specific to the ICI is publicly available.

[10] Aliplast. 2022. The PARI System. Available at : https://www.aliplastspa.com/pari-system/the-system
[11] CONIP. 2022. Service. Available at : https://www.conip.org/en/service/
[12] CORIPET. 2022. Bottle-to-bottle. Available at : https://coripet.it/contributo-di-riciclo-coripet/
[13] CONAI. 2022. General Programme for the Prevention and Management of Packaging and Packaging Waste. Available at : https://www.conai.org/wp-content/uploads/2022/10/PGP_CONAI_2022_ABSTRACT_EN.pdf
[14] Idem. Page 47
[15] Idem
[16] https://www.conip.org/en/
[17] https://www.aliplastspa.com/integrated-cycle
[18] CONAI. 2022. General Programme for the Prevention and Management of Packaging and Packaging Waste. Available at : https://www.conai.org/wp-content/uploads/2022/10/PGP_CONAI_2022_ABSTRACT_EN.pdf

Fees are set up by CONAI based on the ease of recyclability. The table below provides information for plastic packaging[19]. It can be noted that packaging generated from the ICI sector generally has lower fees.

Category	Fee
Plastic Group A1 - Rigid and flexible packaging with a well-established and effective industrial sorting and recycling chain, mainly managed in ICI circuits.	134 €/T
Plastic Group A2 - Flexible packaging with an effective and consolidated industrial selection and recycling chain, mainly from ICI but significantly present in urban separate collection.	168 €/T
Plastic Group B1 - Packaging with a well-established and effective industrial sorting and recycling chain, mainly from the "Household" circuit	192 €/T
Plastic Group B2 - Other packaging that can be sorted/recycled from the "Household" and/or "ICI" circuit	533 €/T
Plastic Group C Packaging with experimental sorting/recycling activities in progress or not selectable/recyclable at the state of current technology	642 €/T

Table 3 – Plastic Environmental Contribution set by CONAI

There is no detailed information on the cost of operations from autonomous systems Aliplast, CONIP or CORIPET.

[19] Idem

Case Study 2: Belgium

6 Take-aways from the Belgium case study

1. All packaging waste, by-law, must be collected and managed by the producers of the packaging whether generated in households, out-of-home contexts or by ICI sector generators.
2. Two PROs organisations are accredited and collaborate to provide coverage of all generating sources – relying on two different business models adapted to the needs of the waste producers and where the waste is generated and to be collected.
3. Physical characteristics (e.g. format, material) is what differentiates which PRO will be responsible for coordinating the management of the packaging. As a result, non-household packaging is either managed through two streams: ICI or out-of-home programs.
4. For both ICI packaging and out-of-home, PROs rely on the free-market selection of collection and recycling services between waste generators and waste service providers.
5. An intricate set of economic incentives have been put in place by the PROs to promote increased collection and processing for service providers in ICI sector.
6. The programs are constantly evolving and are tailor-made to specific sub-sectors (e.g., construction, retail, etc.); there is no one-size fits all.

Legal framework and producers' obligations

If Belgium has a long experience with ICI waste packaging, it is, among other things, because of its legal framework. While the waste management is a regional competence, all packaging and printed paper must be collected and recycled under the Cooperation Agreement between the 3 regions, the legal framework for the prevention and management of all types of packaging waste in Belgium[20]. Moreover, producers are responsible to meet and report annually and individually on recycling and recovery targets (Table 1). However, to manage the obligations from the Cooperation Agreement, two Compliance Organisations (Producer Responsibility Organisation or PRO) are accredited:

- Fost-Plus for households (HH) packaging, including out-of-home
- Valipac for commercial and industrial (ICI) packaging

Producers can[21] belong to those PROs, which gather information from both producers and service providers in order to report their members' obligations to the Belgian authority: The Interregional Packaging Commission (Figure 3).

[20] CIE. 2022. The Cooperation Agreement. Available at: https://www.ivcie.be/en/the-cooperation-agreement/
[21] They can also chose to report individually to the authorities, but very few take advantage of it

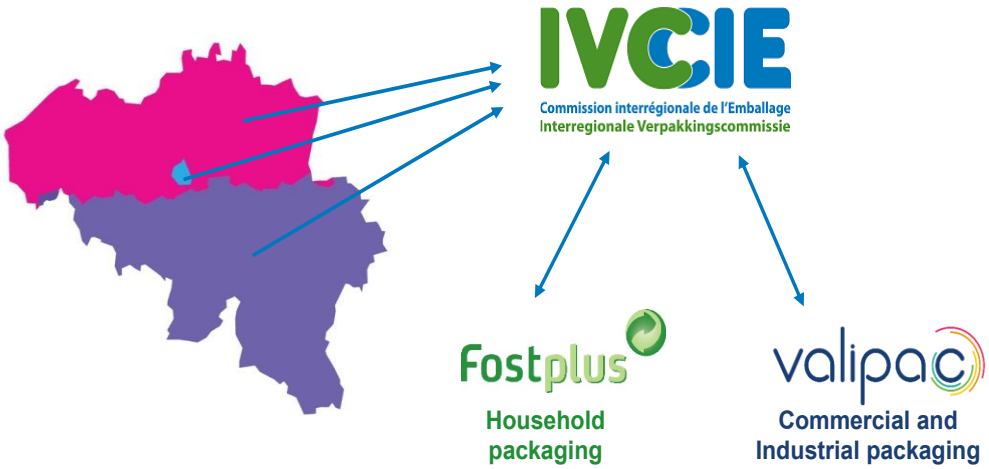

Figure 3 – Cooperation Agreement structure in Belgium (Source: Valipac)

Materials	Recycling targets	
Glass	90 %	
Fiber	90 %	
Ferrous metal	90 %	
Aluminum	75 %	
Plastic	HH: 65 %	ICI: 55 %[22]
Wood	80 %	

Table 4 – Recycling targets set by the Cooperation Agreement

In order to report to the authorities, Fost-Plus and Valipac have a different approach to gather and manage the information:

- Fost-Plus (HH) works under agreements with municipalities and are involved in collection and processing through service agreements. Therefore, they access all necessary data to report on recycling rates. However, their specific approach for out-of-home is a hybrid model between its household program and the Valipac's facilitation model for CI: waste generators (aka businesses) are free to select waste haulers. Fost-Plus is only contracting haulers for reporting information.
- Valipac (CI) acts primarily as a centralizer of recycling system performance data, and a facilitator between waste service providers and waste packaging generators; they do not operate infrastructure or implement collection and processing agreements. Instead, through financial agreements, they access information on collection and recycling with service providers and traders and incentivize the selective collection at source (Figure 4).

[22] By 2030, the target is established at 65 %

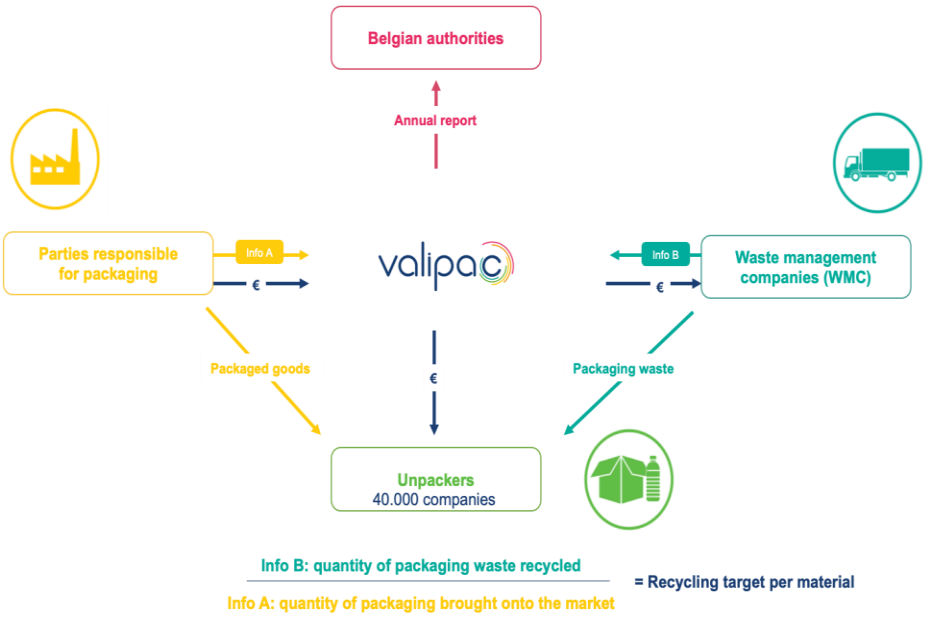

Figure 4 - Valipac system (Source: Valipac)

Given that all packaging waste must be collected, and recycling targets are mandatory in Belgium, the importance of a well-coordinated system of entities working to collect packaging outside of households is important for producers and users. Recognizing that there is sometimes a thin line in defining whether packaging should be considered CI or HH, Fost-Plus and Valipac have produced a guideline for producers[23] (Figure 5).

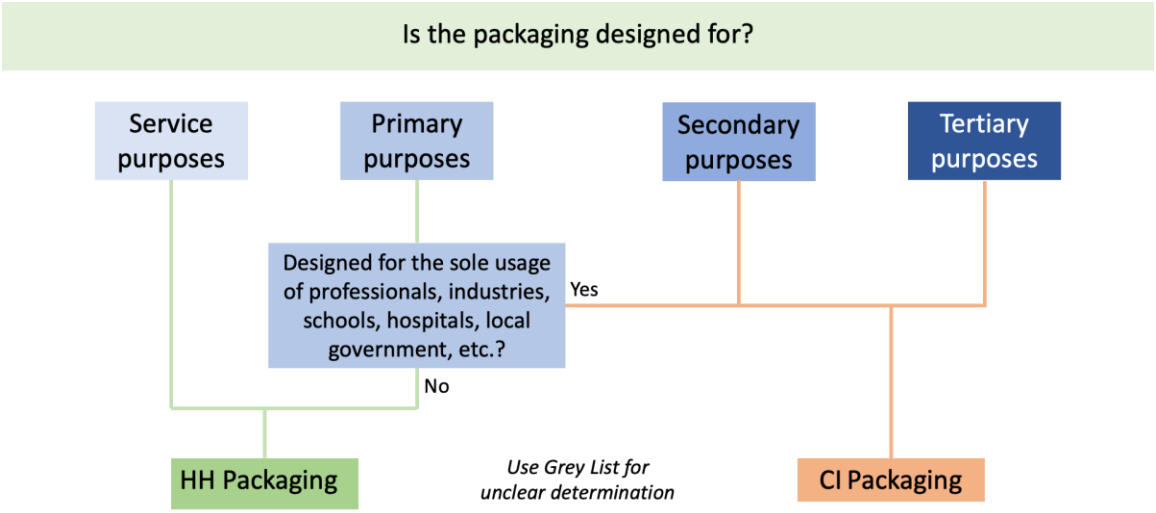

Figure 5 – Guidelines to determine the type of packaging

For remaining uncertain packaging, the "Grey List" serves as a guide and is mainly based on format, as illustrated in Table 5.

[23] Valipac. 2022. *Principes de base pour la distinction entre les produits ménagers et industriels*. Available at : https://www.valipac.be/wp-content/uploads/2021/08/Principes-de-base-pour-la-distinction-entre-produits-menagers-et-industriels-liste-grise-FR-03-2019.pdf

Packaging product	Size	Classification
Grease	<2,5 kg >2,5 kg	HH CI
Cooking oil	<3 L >3 L	HH CI
Cleaning product	< 10 L/kg > 10 L/kg	HH CI

Table 5 – Examples from the « Grey List » that allow producer to differentiate CI and HH packaging

Finally, recognizing the institutional, commercial and industrial sector have specific needs, the tailor-made approach is also taken into consideration for some type of packaging. For instance:

> Reusable packaging: producers are only required to submit supplied information, but there is no mandatory target to achieve. To determine whether a product is reusable or not, Valipac has published a decision tree[24].
>
> Hazardous products packaging: Those packaging are included in the Cooperation Agreement and fall under the industrial scheme, but exemptions could be granted, for example, the obligation to achieve specific targets. Another organisation than Valipac could take care of the collection and recycling system.

PROs role and responsibilities

Fost-Plus – Out-of-home (OOH) scheme

Fost-Plus's mandate is focused on household packaging whether they are generated in the home or away from home. Their OOH program was more recently launched in 2018 and has required Fost-Plus to conduct behavioral studies to help design and target their diverse collection strategies.
The OOH approach put forward is tailor-made to the generating sites and facilities or activity. Those include workspaces, schools, public spaces such as stadium, transport areas, parks, and one-off events such as festivals, community events, etc.

Fost-Plus offers a range of services according to the classification of the site and out-of-home activity for out-of-home area (Figure 6) such as:

- Skills & services: training and information to businesses to promote collection
- Solutions & materials: access to transfer station to service providers that collect from businesses, and allow some small companies to use the PMD Bag (Plastic, Metal and Drink carton packaging) used in the residential sector
- Financing: incentives for collection through a dedicated programs financing collection equipment (bins) and education at schools[25]. For other sub-sector, Fost-Plus provide an incentive for collection of 75 €/TM[26].

It is worth noting that, in contrast to Valipac, Fost-Plus enters in direct contracts with recyclers in Belgium[27], for all materials that they managed regardless of their source.

[24] Valipac. 2022. Decision tree reusable Packaging. Available at: https://www.valipac.be/wp-content/uploads/2022/07/arbre-decisionnel-emballages-reutilisables-en-06-2022-final.pdf
[25] Fost Plus. 2022. Sorting at School. Available at: https://www.fostplus.be/en/sorting/sorting-school
[26] Fost Plus. 2022. Sorting at Work. Available at: https://www.fostplus.be/en/sorting/sorting-work
[27] Fost Plus. 2022. Dossier de presse. Available at: https://www.fostplus.be/fr/a-propos-de-Fost-Plus (in French)

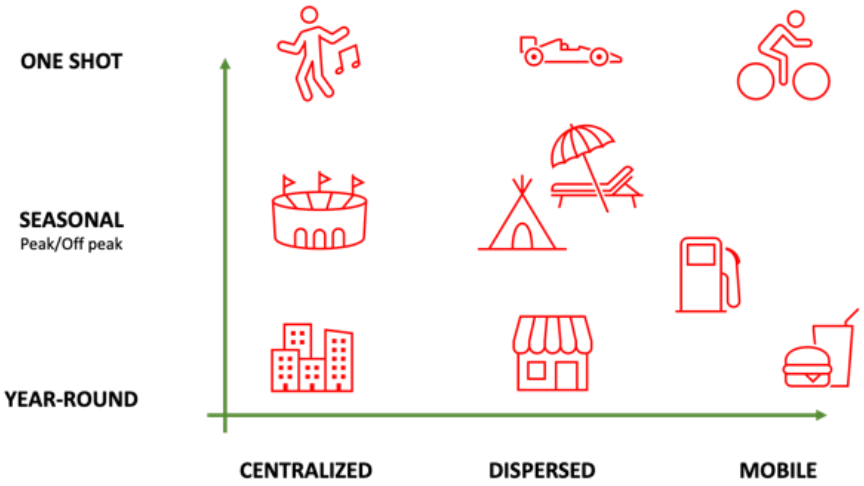

Figure 6 – Classification of Out-of-home subsectors (source: Fost-Plus)

Valipac – Commercial and Industrial scheme

The ICI sector operates on the basis of the free market selection of service providers by the waste generators and waste collectors. Valipac provide performance tracking and financial accountability services to producers and as part of this mandate, collects and remits fees. This has enables them to develop a set of financial incentives that impact the cost of selective collection at source in order to drive additional collection and recycling. For example:

- Starter incentive: 150 € for a new collection contract
- Container incentive: a fixed rate by selective container type by year to compensate the cost of renting the equipment (range from 60 to 80 €/container/year)
- Recycling incentives: a rate per ton to encourage source separation of given materials (e.g. 30 €/ton for plastic film, bags, EPS, drums, plastic strapping)
- Bin bag incentive: to promote the use of a bag for a given plastic to allow the collection of small quantities (based on volume or number of bags)

Valipac enters into agreements with recognized service providers and material brokers to have access to the data required to meet reporting obligations with regards to traceability[28]. As for the hauling services, there is no feedstock guarantee agreements with recyclers. Nevertheless, audits are regularly performed at recycling facilities, to make sure they are compliant to EU rules, and a bonus of up to 35€/ton is offered to collectors/brokers that send materials to local recycling (in the Eu or within 300 km around Brussels) or to EuCertPlast certified recyclers.

Valipac also offers specific operational support and conducts educational projects to increase the participation of more complex sectors and increase the collection of harder to recycle materials. For instance, the Clean Site System is dedicated to film collection on C&D sites. Entrepreneurs can buy specific bags (25 € for a roll of 5 bags) to allow the collection of pallet covers, stretch films, packaging films and plastic bags of materials[29]. Extension of the Clean Site to polyurethane or buckets is being considered.

[28] Valipac. 2021. Valipac in a nutshell. Non available publicly
[29] Clean Site System. 2022. Available at: https://www.cleansitesystem.be/en/

Recycling performance

Both Valipac and Fost-Plus reported meeting the recycling targets set by the Cooperation Agreement. In 2021, Valipac reported that 91,5 % of all industrial packaging supplied had been recycled. For plastics, the recycling performance reached 61,7 %, which represent 62 948 tons[30]. From that tonnage, 40% are recycled in Europe (Belgium, France and Netherlands) while 40% are shipped to Asia and 20% Turkey[31].

Fost Plus reported that 90% of all material supplied on the household market is recycled in Belgium[32] totalling 722 000 tonnes; almost a quarter is from PMD bags. For out-of-home, in 2021, Fost Plus collected 22 000 tonnes of material and is working to achieve 26 000 tonnes by 2023.

Economic performance

Valipac annual turnover is reported at 17 M€[33]. Fost-Plus annual turnover is reported at 253 M€, but specific data for out-of-home are not disclosed[34]. The respective turnovers is mainly driven by producers' fees. Because the approach is different for HH and CI packaging, fees are also established differently. For Valipac, fees are established according to the product recyclability (Table 6).

Packaging type	2022 Fees (€/Ton)[35]
Recyclable packaging (excl. plastic)	17
Recyclable plastic packaging	53
Non-recyclable packaging	80
Reusable packaging	0

Table 6 – 2022 producers' fees established by Valipac

Fost-Plus establish fees according to the cost of collection and recycling, and recyclability. Fees are the same for OOH and HH packaging and shown in Table 7.

Packaging type	2022 Fees €/Ton [36]
PET bottles (clear)	103,9
PET bottles (clear light blue)	417,2
PET bottles (clear other light colors)	595,7
PET bottles (opaque)	1 737,9
Other rigid PET (clear)	778,4
PP containers	617,6
PS & XPS Rigid containers (except EPS)	667,6
PE containers	438,0
PE films	1158,8
Other films	1448,3
Hazardous household	932,1
Detrimental packaging	2896,5

Table 7 - 2022 producers' fees established by Valipac

[30] Valipac. 2021. Valipac in a nutshell. Non available publicly
[31] Valipac. 2022. Facilitating the circular economy. Available at: https://www.valipac.be/en/facilitating-circular-economy/
[32] Fost Plus. 2021. Rapport d'activité 2021. Available at: https://com.fostplus.be/activityreport2021fr/chiffres-cls-2021 (in French)
[33] Valipac. 2022. Rapport annuel. Available at : https://www.valipac.be/flipbook/fr/ra2021/index.php (in French)
[34] Fost Plus. 2021. Rapport d'activité 2021. Available at: https://com.fostplus.be/activityreport2021fr/chiffres-cls-2021 (in French)
[35] Valipac. 2022. Rapport annuel 2021. Available at: https://www.valipac.be/flipbook/fr/ra2021/index.php (in French)
[36] Fost Plus. 2022. The Green Dot Rates. Available at: https://www.fostplus.be/en/members/green-dot-rates

Case Study 3: Austria

5 Take-aways from the Austrian case study

1. All packaging waste, by-law, whether generated from household or from commercial activities, must be managed and data shared with the governmental authority.

2. While a competition model is in place between PROs, there is also a possibility for producers to self-fulfil their obligations.

3. Recycling targets are different for household and commercial packaging. Size and point of generation are the main criteria to determine whether a packaging is classified as household or as ICI.

4. While competitive, the model is based on a bring system where waste materials are brought by generators (themselves or through service providers) to a Regional Transfer Center where materials are sorted, and audits performed.

5. Recycling and economic performance of the various sector PROs is not transparent likely because of the competition model and PROs are not required to publish performance data.

Legal framework and producers' obligations

ICI packaging waste are specifically included in Austrian legislation through the Waste Management Act and the Austrian Packaging Ordinance[37]. There is an obligation to take back packaging and declare the quantity, provided that no participation in an approved collection and recycling system takes place[38]. The Ordinance also makes the distinction between household and commercial (ICI) packaging.

For ICI, commercial packaging is a packaging that has not met the criteria to be a household packaging[39]. A step-by-step approach is used to classify packaging either as household or ICI. It involves classification in one of 47 products group of packaging determined by a market study, and packaging size[40]. Large packaging and packaging to which the special rule applies are classified as commercial packaging. The definition includes packaging containing hazardous products (e.g., used oil, pesticides). Reusable packaging is excluded but has its own set of rules: annual reporting is not

[37] European Commission. 2019. Development of guidance on Extended Producer Responsibility (EPR) – Case Study on packaging in Austria. Available at: https://ec.europa.eu/environment/archives/waste/eu_guidance/documents.html

[38] Austrian Ministry of Agriculture, Forestry, Environment and Water Management. Verpackungsverordnung 2014. Available at: https://www.bmk.gv.at/themen/klima_umwelt/abfall/Kreislaufwirtschaft/verpackungen/recht/verpackungsvo.html

[39] WKO. 2022. Information on the Austrian Packaging Ordinance. Available at: https://www.wko.at/site/mehrsprachige_info/Information-on-the-Austrian-Packaging-Ordinance-2014.html

[40] ARA. 2022. A practical guide on how to classify packaging and determine the license amount by tariff category. Available at: https://www.ara.at/uploads/Dokumente/Info-Merkbl%C3%A4tter/ARA-IB-Vorgehensweise-VerpEinstufung-2022-Englisch.pdf

required, but packaging must be reused on a multiple basis. Moreover, labels and fasteners cannot compose more than 5% by mass of the reusable container[41].

The legislation also makes a well-defined difference between household and ICI packaging because the obligations for producers are different, starting with, collection and recycling targets, as outlined in Table 8 below.

Material	HH Packaging		IC&I Packaging	
	Collected target	Collected material recycling target	Collected target	Collected material recycling target
Plastic	60%	50%	85%	75%
Glass	80%	100%	90%	100%
Paper/carboard	80%	95%	90%	95%
Metal	50%	100%	60%	100%
Cartons	50%	60%	N.A.	N.A.
Wood	N.A.	15%	25%	60%
Other composites	40%	40%	40%	40%

Table 8 – Collection and recycling targets in place in Austria

Other obligations for ICI packaging producer include:

- Obligation to take back packaging free of charge;
- Obligation to return the packaging to the upstream entity obligated to take back packaging;
- Obligation, for suppliers of major accumulation points[42], to report the delivered packaging quantities;
- Obligation to report commercial packaging put into circulation.

A total of seven (7) PROs represents companies in their obligations, while five (5) of them are dedicated to ICI packaging only[43]. Because producers are not mandatory to join a PRO, they can fulfil to their obligations themselves, which 400 of them do. Alstoff Recycling Austria (ARA) is by far the larger PRO with over 70 % of the market share[44]. According to a report commissioned by the European Union, "the definition of household and ICI packaging are interpreted differently by the PROs […] resulting in market distortion"[45]. Therefore, it seems that possible cross-financing between household and commercial systems can take-place.

[41] WKO. 2022. Information on the Austrian Packaging Ordinance. Available at: https://www.wko.at/site/mehrsprachige_info/Information-on-the-Austrian-Packaging-Ordinance-2014.html

[42] A major point of accumulation is a commercial building where minimal quantities are generated and can serve as a centralization area for commercial packaging waste, before send to recycling facilities (source: Ministry of Agriculture, Forestry, Environment and Water Management)

[43] VKS. 2022. Sammel- und Verwertungssysteme . Available at: https://www.vks-gmbh.at/metamenu/wissenswertes/sammel-und-verwertungssysteme.html

[44] ARA. 2021. Transparency report. Available at : https://transparenzbericht.ara.at/

[45] European Commission. 2019. Development of guidance on Extended Producer Responsibility (EPR) – Case Study on packaging in Austria. Available at: https://ec.europa.eu/environment/archives/waste/eu_guidance/documents.html

The competitive model in place in Austria require a compliance body: The Austrian Ministry of Agriculture, Forestry, Environment and Water Management and its subsidiary, the packaging coordinating bureau (Verpackungskoordinierungsstelle, or VKS)[46]. VKS receive reports from PROs and individual companies with self-fulfilment scheme, including materials put on the market, collected and recycling rates, as well as information on reusable performance[47].

PROs role and responsibilities

There are 5 PROS dedicated to ICI waste packaging (some also service the residential sector).

1. ARA: A non-for profit joint stock company; includes AGR Austria Glas-Recycling: a subsidiary from ARA dedicated to the glass stream
2. Bonus Holsystem: a private company held by a plastic-film recycler
3. Interseroh Austria: a waste service provider company
4. Reclay UFH: part of the Reclay Group that provides packaging and waste treatment services
5. European Recycling Platform (ERP) / Group Landbell: a dedicated environmental compliance company

Anther PRO, GUT, a consulting company for environmental analysis is also delivering services but is outside of the VKS scope.

The respective market shares for the ICI packaging are illustrated in Table 9 below:

PRO	Fibre	Metal	Plastique	Expanded PS
ARA	72 %	72 %	66 %	64 %
Bonus Holsystem	6 %	10 %	17 %	9 %
ERP	3 %	1 %	2 %	5 %
Interseroh	10 %	10 %	9 %	8 %
Reclay	8 %	7 %	6 %	15 %

Table 9 – Market shares of the different PROs for ICI packaging waste (source: ARA[48])

The system for ICI packaging is currently organized as “bring system”: waste generators hand over the packaging to Regional Transfer Centers, the PROs pay the operations of the Regional Transfer Center and for the downstream processing (Figure 8).

A regional transfer center takes over packaging from waste generators and does basic sorting according to output specifications defined by the PROs, which takes over the material for further processing (PROs are owner of material)

[46] VKS. 2022. Über uns. Available at: https://www.vks-gmbh.at/ueber-uns.html
[47] Rechtsinformationssystem Des Bundes (RIS). 2022. Bundesrecht konsolidiert: Gesamte Rechtsvorschrift für Verpackungsverordnung 2014, Fassung vom 01.01.2023 (Packaging Ordinance 2024, January 1st 20-20-2023 version) https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008902&FassungVom=2023-01-01

[48] ARA. 2021. Transparency report. Available at : https://transparenzbericht.ara.at/

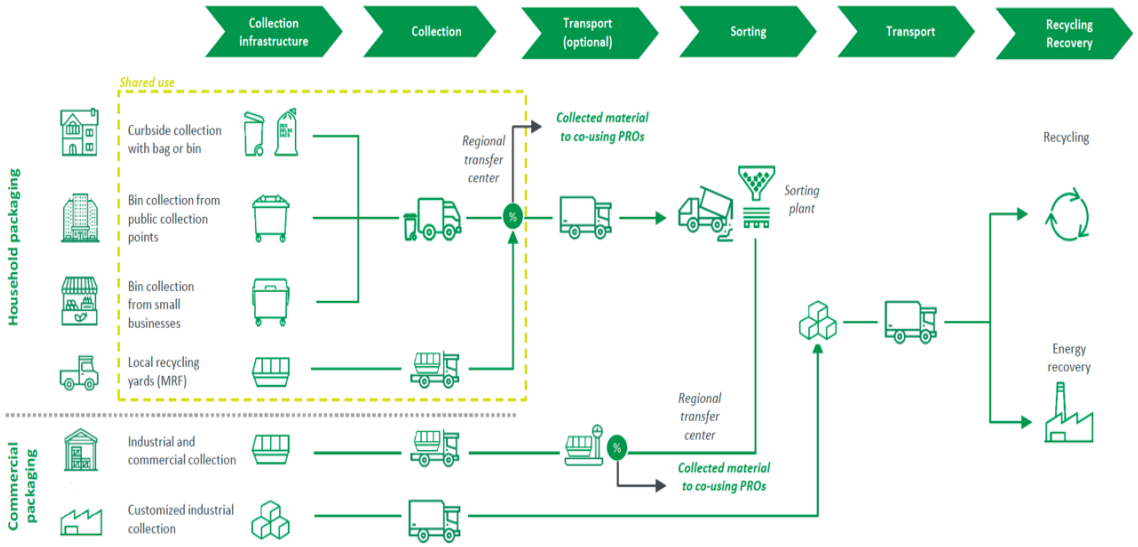

Figure 8 – Value chain of packaging collection for lightweight packaging (source: ARA)

The mode of collection for packaging generated in the ICI sector depends on the volume of packaging waste produced:

- Companies generating less than 2 640 liters of packaging waste annually could have their packaging collected by residential services;
- Companies generating up to 14 300 liters of packaging waste annually could be benefit from the collection service of the "waste service partner" of their region;
- Companies generating more than 14 300 liters can enter into agreement with waste collectors but invoices and reporting of waste collected must be sent to the waste producer's designated PRO[49].

Collection and sorting are organized by waste generators with waste service providers of their choice, while recycling/valorisation are organized by PROs through contracts with collectors, processors and recyclers.

Recycling and economic performance

Likely due to the competition type EPR model, very little information on the recycling and economic performance of the system is available publicly. VKS, the compliance body, as well as the Ministry of Environment do not publish recycling results.

[49] European Commission. 2019. Development of guidance on Extended Producer Responsibility (EPR) – Case Study on packaging in Austria. Available at: https://ec.europa.eu/environment/archives/waste/eu_guidance/documents.html

According to ARA, 111 kg/inhabitant of packaging is collected each year; 90% is recycled in Austria or nearby[50]. Other PROs do not disclose any metrics related to their respective performance.

[50] ARA. 2021. Transparency report. Available at : https://transparenzbericht.ara.at/