

The background of the page is a photograph showing a portion of the Belgian flag (black, yellow, and red vertical stripes) and the ornate stone archway of a building. A light blue semi-transparent box is overlaid on the center of the image, containing the title and subtitle.

Case study on introducing a deposit return system in Belgium

A decade-long discussion
yet to achieve a clear vision

We would like to thank the Brussels Environment Agency and the Flemish Waste Agency for their contribution to this case study.

Erratum: the following changes have been made for the second release of the report:

- Page 12, the sentence "Independently of the above, some municipalities in Flanders introduced classic deposit system on their own initiative." has been changed to "Independently of the above, some municipalities in Flanders implemented limited scale return bonus-type projects that can be considered as precursors to a deposit system". This was done to avoid leading the reader to think that these pilot projects were official deposit systems

- Page 14, the letter D has been added to the following sentence to clarify that we are referring to a Digital system, not a classic system to the sentence: "The timeline for setting up a DDRS system cannot be taken for granted as there are no priors."

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Table of abbreviations and definitions

Blue bag	The standardised bag to collect PMD fraction from the households through kerbside collection in Belgium.
CEAP	Circular Economy Action Plan
Composite Packaging*	Packaging made of two or more layers of different materials which cannot be separated by hand and form a single integral unit, consisting of an inner receptacle and an outer enclosure, that it is filled, stored, transported and emptied as such.
Consumers	Citizens/customers who buy beverages in packaging on which deposit is payable, and receive it back upon return
Comeos	Belgian Trade and Services Association
Deposit Return System	Deposit return schemes charge users an extra fee when they buy a product, which is refunded if the product packaging is returned for recycling or reuse.
DRS	Deposit Return System
DDRS	Digital Deposit Return System
EPR system*	A set of measures taken by Member States to ensure that producers of products bear financial responsibility or financial and organisational responsibility for the management of the waste stage of a product's life cycle.
EUR	Euro
Fevia	Belgian Food Industry Association
ICT	Information and communication technology
LRA	Local and Regional Authority
CIE/IVC	Commission interrégionale de l'Emballage Interregionale Verpakkingscommissie
MS	Member States (EU)
OECD	Organisation of Economic Cooperation and Development
Operators*	In relation to packaging shall mean suppliers of packaging materials, packaging producers and converters, fillers, and users, importers, traders and distributors, authorities and statutory organizations.
OVAM	Flemish Waste Agency
PET	Polyethylene terephthalate
PMD	Paper Metal Drink Cartons fractions
PP	Percentage Point
PPWD	Packaging and Packaging Waste Directive
PPVC	Plan d'action propreté publique et Cadre de vie
PRO	Producer Responsibility Organisation – collective organisation in charge of meeting individual producers' obligations arising from the application of EPR principles.

Producers	Includes beverage manufacturers, breweries, importers and trademark owners. These are enterprises that package, import or sell packaged beverages in the course of their economic or professional activities.
Recycling*	The reprocessing in a production process of the waste materials for the original purpose or for other purposes including organic recycling but excluding energy recovery.
Retailers	Includes stores, shops, supermarkets that sell beverages to consumers and then accept the returned packaging on which deposit is payable, refunding the deposit back to the consumer.
Reverse Vending Machine (RVM)	Automated device which accepts empty beverage containers and issues a refund for deposit amount attached to the container that has been previously paid.
Reusable packaging*	Packaging which has been conceived, designed and placed on the market to accomplish within its lifecycle multiple trips or rotations by being refilled or reused for the same purpose for which it was conceived
Reuse*	Any operation by which packaging, which has been conceived and designed to accomplish within its life cycle a minimum number of trips or rotations, is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products present on the market enabling the packaging to be refilled
rPET	Recycled Polyethylene terephthalate
Single-use beverage packaging	Beverage packaging intended to be used only once by the consumer
SUPD	Single-Use Plastics Directive
USD	United States Dollars
WRAP	The Waste and Resources Action Programme

Definitions marked with * come directly from the EU legislation.

Introductory note

The present document provides an in-depth analysis of the introduction of a deposit return system for single-use beverage packaging in Belgium. It accompanies the report "Deposit Refund Systems in the EU - 2023 Update" published in December 2023.

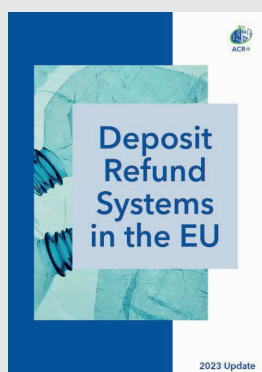
The Belgian case was selected for several reasons. First, it provides a concrete example for discussing the economic, technical, organisational and social aspects of deposit return systems. Second, Belgium is facing similar challenges to all other countries in terms of packaging waste management with some important particularities that distinguishes it from the other MS. The country has a better performance than most other EU countries when it comes to packaging waste management. It has an EPR system for packaging in place since 1994 which is considered relatively successful. Against this background, a deposit system for single use beverage packaging is discussed to further improve the recycling and collection rates as well as addressing an on-going litter problem. However, the process proves complicated, and the on-going discussions do not provide a clear direction.

The document provides a description of the institutional framework across the three regions of Belgium; (namely the Brussels-Capital Region, Flanders and Wallonia), current system performance and targets. An overview of the deposit system

discussions in the three regions' pertinent previous studies on the subject and initiatives to improve the management of packaging waste in the recent years as well as a brief discussion on the stakeholder positions on the deposit system are also provided. We conclude with a critical discussion of the findings.

The core of the issue in Belgium seems to be the current context. In this regard, the case deserves special attention because it is a showcase on the complex relationship between the existing EPR system and the planned deposit system. Another crucial point is the data availability providing a clear picture on the quantities of beverage packaging and litter. Finally, how the costs and benefits of introducing a deposit system are distributed among different stakeholders is very important. Together, these elements underpin the ultimate policy question: does the economic and social cost of introducing a deposit system outweigh the benefits in the particular Belgian context?

The answer remains elusive. The exploration of the Belgian case shows that a more granular understanding of these elements is needed for decisive action. This is essential to anticipate the potential impacts and to fairly distribute the burden of changing (or not) the current system among various stakeholders.



Deposit Refund Systems in the EU - 2023 Update

Five years after a first report, "[Deposit Refund Systems in the EU - 2023 Update](#)" aims to revisit knowledge on the topic of DRS for single-use packaging, understand the new developments and keep up with the ever-changing landscape.

This update builds on its predecessor, emphasising changes at both the Member State and EU levels. By focusing on fourteen countries with existing DRS, ACR+ provides updated data, exploring the effectiveness of deposit systems in reducing littering, and delving into their interaction with Extended Producer Responsibility schemes. The study also incorporates publicly available information on system results.

The report focuses on contributing to the broader discussion surrounding deposit systems, examining their potential and limitations in addressing critical issues like waste reduction and plastic pollution. While deposit systems enhance collection and recycling rates, they may not inherently align with waste hierarchy principles, often favoring recycling over reuse. The report notes that a limited number of deposit systems include reusable packaging in their policies, emphasising a need for a more holistic approach to packaging solutions. Additionally, deposit systems promote recyclable products and purer recycle but do not guarantee packaging circularity.

The report acknowledges these limitations as areas for improvement rather than reasons to dismiss deposit systems as an effective policy tool. It underscores the need for better understanding the relationship between beverage packaging quantities and overall material and waste flows. The report calls for comparative frameworks beyond descriptive analyses to identify replicable structural elements in various deposit systems. Exploring the interaction between Extended Producer Responsibility schemes and deposit systems is deemed crucial for both systems' effectiveness.

Overview: a particular case among others

This chapter provides an in-depth analysis of the on-going discussion in Belgium on introducing a deposit return system for single-use beverage packaging. The Belgian context shares some similarities with other countries: the increasingly stringent EU/ national targets push local authorities to improve their waste management, especially for streams that are less performing, such as plastics. The new calculation method to report data to the European Commission adds an additional challenge, revising the figures downwards, as further explained. And finally, there is increasing pressure from civil society to address the problem of litter, which the existing policies does not seem to be able to solve. As a result, all policy options are explored, including deposit systems, to increase collection and recycling rates while minimising environmental pollution.

The Belgian case has also a number of particularities worth mentioning when it comes to the DRS debate. The country has high cross-border movement to and from France, the Netherlands, Germany, and Luxembourg. Its three regions have full competence on waste management¹, but there is general consensus² that a deposit system, if introduced, must be harmonised across the regions. This is considered indispensable to ensure the effectiveness, and it is currently the case for the EPR system for packaging. However, this might create a challenge. At the time of writing, the regions seem to follow a different approach for introducing a deposit system (see below). Another important aspect of the Belgian context is that the EPR system currently in place is considered relatively successful, both for households and industrial packaging. This is a divergence from the other countries where DRS either predates an EPR system (SE, NO, NL, IS, FI, HR, and DK) or was introduced almost simultaneously (EE). It is also a divergence from the late adopters of DRS (LT, LV, MT, SK) because of its relatively higher recovery and recycling rates. These elements constitute an interesting case because they partially explain the challenges the country is facing in to introduce a deposit system in parallel to an already existing EPR.

Against this background, this document aims at providing an impartial analysis of the Belgian case with the following main guiding questions:

- What is the institutional context?
- What is the current situation in terms of collection and recycling of packaging waste and beverage packaging waste?
- What are the positions of different stakeholders? What are the arguments for and against a deposit system? How can these arguments be explored from a critical perspective?
- What is being done to improve collection and recycling rates and to address litter?

Current system and institutional framework

In Belgium, the prevention and management of packaging waste is a regional competence, but the three regions cooperate within the same framework that serves the whole country. CIE/IVC (Commission interrégionale de l'Emballage/ Interregionale Verpakkingscommissie) is the inter-regional public body ensuring the implementation of the legal framework, for instance the fulfilment of producers' obligations across the country³. The legal system is based on the Cooperation Agreement (L'accord de Coopération/Het Samenwerkingsakkoord)⁴, laying out the responsibilities of each producer, as well as targets. It also accredits the PROs (Producer Responsibility Organisation) (one for municipal and the other for industrial packaging waste) for a 5-year term. The CIE is currently undergoing change, with the aim of integrating the litter dimension into its work based on the Single-Use Plastics (SUP) Directive⁵⁶.

1 Except for nuclear waste, transit waste shipments and product policy

2 Based on interviews conducted and media reports, see for instance: [the RTBF Article 'Quelle Consigne pour Les cannettes et bouteilles plastiques'](#)

3 IVCI, Function of the IRPC <https://www.ivcie.be/en/function-of-the-irpc/>

4 IVCI, [Accord de Coopération](#)

5 Belgium has transposed the SUPD in 2022 but operational details for implementation are not yet finalised.

6 <https://ra22.ivcie.be/>

Fost Plus is the PRO responsible for financing and managing the collection and treatment of packaging waste from households⁷ since 1994⁸. The sorting and recycling of collected materials is carried out in facilities which signed agreements with Fost Plus. The latter remains the owner of the collected waste. Currently, its operations cover the entire territory, financed by material revenues and fees paid by its 4 800 members^{9,10}. It is not mandatory to be a member of Fost Plus as long as the company proves to have fulfilled its obligation with a validation from the CIE¹¹. However, most companies prefer to outsource their EPR obligations to the organisation. As a result, it has a vast market coverage. Its latest request for a new 5-year term was introduced in mid-2023¹². Packaging waste from households (and similar) is collected dominantly via kerbside collection, using specific bags (the blue bag, used to collect plastic and metal packaging and drink cartons). Paper and cardboard is also collected separately through kerbside collection via separate bags. Glass bottles are collected via collection points.

The counterpart of Fost Plus for commercial and industrial packaging is Valipac¹³, established in 1997. Valipac is responsible for making sure that the producer responsibility is fulfilled for industrial packaging. It oversees the quantities put onto the market, collected and recycled by its members, engages in communication activities with its members and beyond, and encourages circular packaging design through various measures¹⁴. It covers approximately 85% of the market¹⁵. Valipac is not included in the rest of the chapter as it is not relevant for the DRS discussion.

Targets and the current performance

Targets

The EU targets mainly come from the PPWD (Packaging and Packaging Waste Directive) and the SUP (Single-Use Plastics Directive). The former covers all packaging types, not only beverage packaging. As a result, the reporting obligations follow the same logic, and do not provide specific data on beverage packaging. The following targets

from the PPWD are relevant, based on weight of materials¹⁶:

- **Recycling rate for all packaging waste: 65% (2025) and 70% (2030)**
- **Recycling rate for plastic packaging: 50% (2025), 55% (2030)**
- **Recycling rate for glass packaging: 70% (2025), 75 % (2030)**
- **Recycling rate for ferrous metals packaging: 70% (2025), 80% (2030)**
- **Recycling rate for aluminium packaging: 50% (2025), 60% (2030)**

The SUP Directive contains a target for separate collection for recycling and minimum recycled content of PET bottles, based on weight. As such it is very relevant for the DRS debate:

- **Minimum recycled plastic content for PET bottles: 25% (2025), 30% (2030)**
- **Single-use PET bottles (up to 3L in volume) collected separately for recycling: 77% (2025), 90% (2030)**

These EU targets are transposed to the national/regional law, but the latter sometimes go further, setting more ambitious targets. The Cooperation Agreement mentioned above is the main document laying out these targets for recycling rates covering the entire Belgian territory, based on weight¹⁷:

- **90% for glass, and ferrous metals (year after the agreement comes into force - 2021)**
- **75% for aluminium (same as above - 2021)**
- **50% for plastic packaging (same as above - 2021)**
- **The agreement also sets a target for plastic packaging from households: 65% for 2023, going up to 70% in 2030**

7 Municipal waste covers also small businesses and other sources which have similar waste to households (déchets assimilés).

8 Fost Plus: [Chiffres Clés](#)

9 Fost Plus: [Chiffres Clés](#)

10 Fost Plus, [À propos de Fost Plus | Fost Plus](#)

11 IVCI, [Vos emballages, vous en êtes responsables](#)

12 IVCI, 2023, [Rapport d'activités 2022](#)

13 Valipac, [Webpage for 2022 Activity Report](#)

14 Valipac, [A Propos](#)

15 Valipac, 2023, [Position paper on PPWD](#)

16 At the time of writing, PPWD is undergoing revision but the process is on-going. We therefore take the existing PPWD as the reference point.

17 Wallex, 2020, [Accord de coopération portant modification de l'Accord de coopération du 4 Novembre 2008 concernant la prévention et à la gestion des déchets d'emballages](#)

Further, it contains a specific target for the producers (EPR system):

- **90% of all beverage packaging collected and recycled (2022)**
- **95% of all household packaging collected and recycled (2025)**

Results reported by Eurostat

The figures reported by Eurostat stem from the PPWD and the targets laid out in the directive. As mentioned in the introduction, Belgium is considered relatively successful when it comes to managing its packaging waste. Eurostat figures shown below are extrapolated from the EPR system (covering both industrial and household packaging waste). Using weight-based calculations, 99% of all packaging materials put on the market is recovered, and 80% is recycled¹⁸.

Both figures are the highest in the EU. As such, Belgium is already meeting the 2025 targets, except for plastic packaging, as shown in the graph below. Based on the current performance, it is expected that the 2030 targets will also be met, albeit for the plastics, it might present a challenge.

Results reported by Fost Plus and based on the EPR system only

The numbers available from Fost Plus are based on the activities of its members, therefore only covers the EPR system only. Figures are calculated based on weight, and what is put on the market by the PRO members and collected through different channels (mostly the blue bag). According to Fost Plus' figures, 766 kilotonnes of packaging was put onto the market by its members in 2022, of which 95% was recycled. Table 1 provides an overview of recycling rates per material, for all types of packaging.

Figure 1 Recovery and recycling rates for packaging waste, EU27 average and Belgium compared for selected packaging materials¹⁹, year 2021. Source: Eurostat²⁰²¹

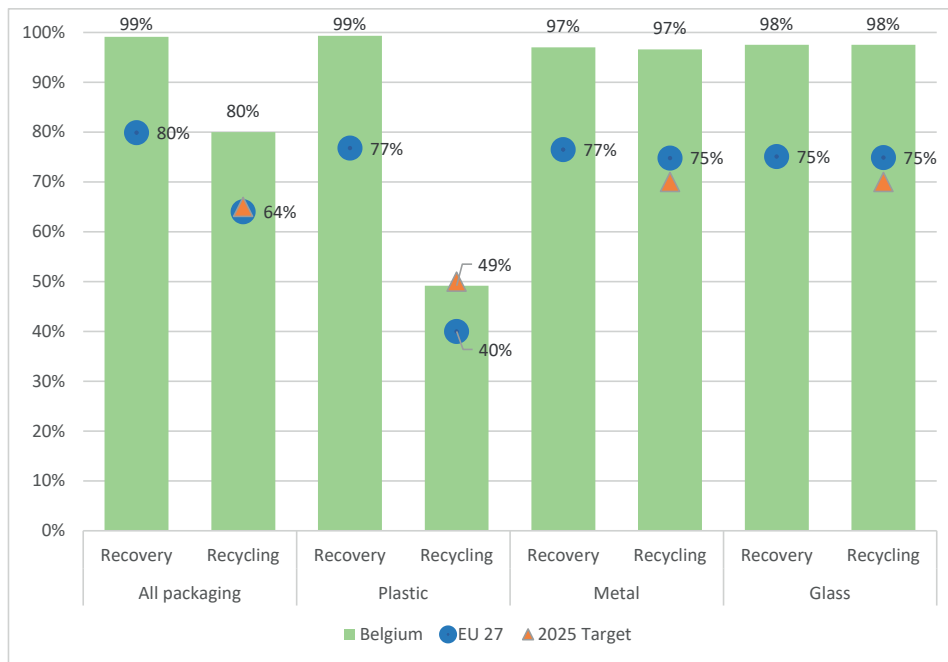


Table 1 Recycling rates for different packaging materials. Source: Fost Plus²²

	Recycling rate (2022)	Recycling per cap. (2022)	Total tonnes recycled (2022)
Glass	123%	30,1 kg	349 kT
Plastic	61%	10,7 kg	124 kT
Aluminium	94%	2,9 kg (including aluminium packaging recovered from residual waste)	33,4 kT
Ferrous metals	105%	2,9 kg (including aluminium packaging recovered from residual waste)	33,2 kT

18 Based on Eurostat figures, for all types of packaging (including households and industrial processes). An overview can be seen [at this link](#).
 19 Metal packaging includes aluminium and steel packaging.
 20 Packaging waste by waste management operations (env_waspc), only materials that are relevant for DRS is included: Glass, Aluminium and Plastic.
 21 Separate data on Aluminium packaging is not available for the EU 27.
 22 Fost Plus, 2022, [Material Fiches](#)

Data focusing on beverage packaging

The only data available specifically focusing on beverage packaging is from the EPR system, based on Fost Plus figures. Fost Plus, in its annual report, only mention that 90% of the PET bottles put on the market by its members were collected and recycled in 2022²³. The annual report from CIE also provides some figures, but for 2021: 84% of PET bottles, 89% of HDPE bottles and 91% of metallic beverage packaging (70% when metal scraps from recycling process are not taken into account) was recycled²⁴. Recycling rate for glass bottles is 100%²⁵.

All the results are based on weight (tonnes) and capped at 100% in case the quantities collected are greater than those put on the market by the PRO members. Therefore, they cover most of the beverage packaging in circulation but not all. Further, Fost Plus indicated in 2021 that 54% of the recycled PET is used in the production of a new bottle, largely exceeding the EU target of 30% for 2030²⁶.

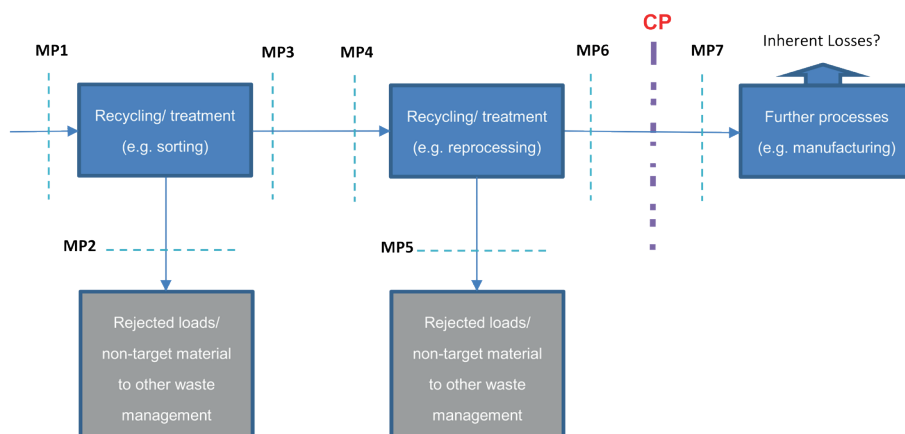
However, the numbers on beverage packaging are based on the EPR system focusing on the members only. They are communicated sporadically and without any further explanation as to how they are calculated. This makes it difficult to put them in context and to see their relation to the other figures mentioned above.

Calculation methods and their evaluation throughout time and impact on the results

The figures mentioned above need to be put in context. The Eurostat numbers on packaging waste are mainly to monitor compliance with the EU regulation, particularly the PPWD²⁷. They are based on weight and cover all processes including households, retails or industries. For Belgium, it is reported to Eurostat based on EPR system (both Fost Plus and Valipac) however it is extrapolated to reflect the entire market (all packaging put on the market) and other losses as explained below²⁸.

Since 2020, only one calculation method is used for reporting the recycled quantities of packaging across the EU. The article 6(a) of the PPWD stipulates that the basis of the measurement for recycling is the weight of waste entering the recycling operation²⁹. This aims at accounting for the losses that occur between the collection and recycling stage and only takes into account the quantities that do not undergo further processing before being transformed into a final product³⁰. Thus, it provides a more rigorous and comparable framework for the MS. The latter could, in the past, select one of four methods, for instance based on what comes out of the sorting centre. This led to higher percentages as losses occur throughout the process from the collection to final recycling. Further, the new EU method accounts for things that fall outside the EPR system: free-riders, parallel imports, reusable packaging put on and collected from the market. This method is used to calculate overall results for Belgium since 2021. The results communicated above are based on the new method.

Figure 2 Multi-stage recycling value chain, measuring points (MP) and calculation points (CP) as explained by the European Commission³¹



23 Fost Plus, 2022, [Material Fiches](#)

24 IVCI, 2023, [Rapport d'activités 2022](#)

25 Ibid.

26 Fost Plus, 2021, ['Belgium exceeds European plastic recycling requirements'](#)

27 European Commission, 2023, [Guidance for the compilation and reporting of data on packaging and packaging waste according to Decision 2005/270/EC](#)

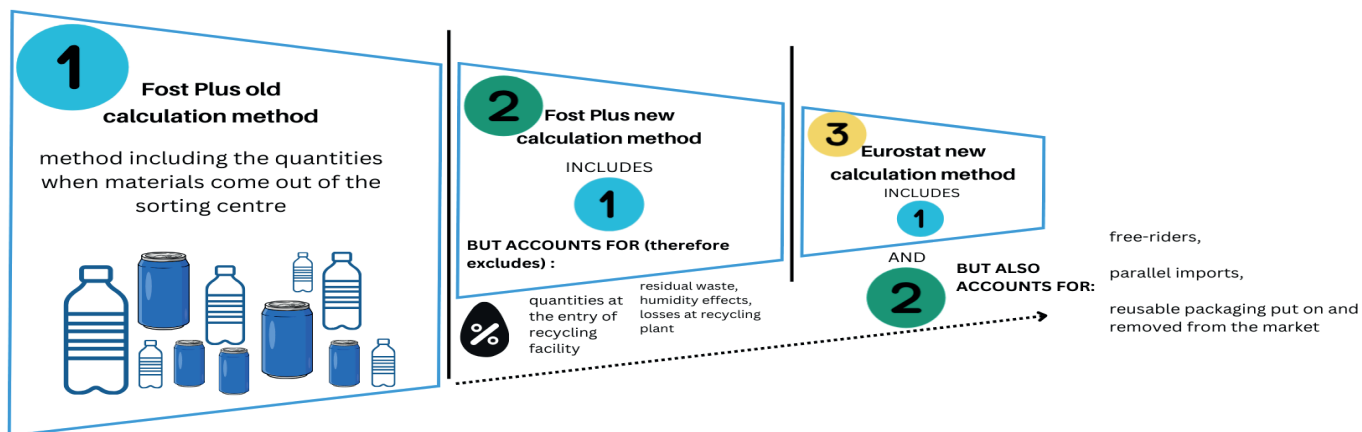
28 European Commission, 2022, [Country-specific notes referring to data on Packaging and Packaging Waste](#)

29 European Commission, 2023, [Guidance for the compilation and reporting of data on packaging and packaging waste according to Decision 2005/270/EC](#)

30 Ibid.

31 Ibid.

Figure 3 Relationship between different calculation methods, in terms of coverage of quantities and different processes



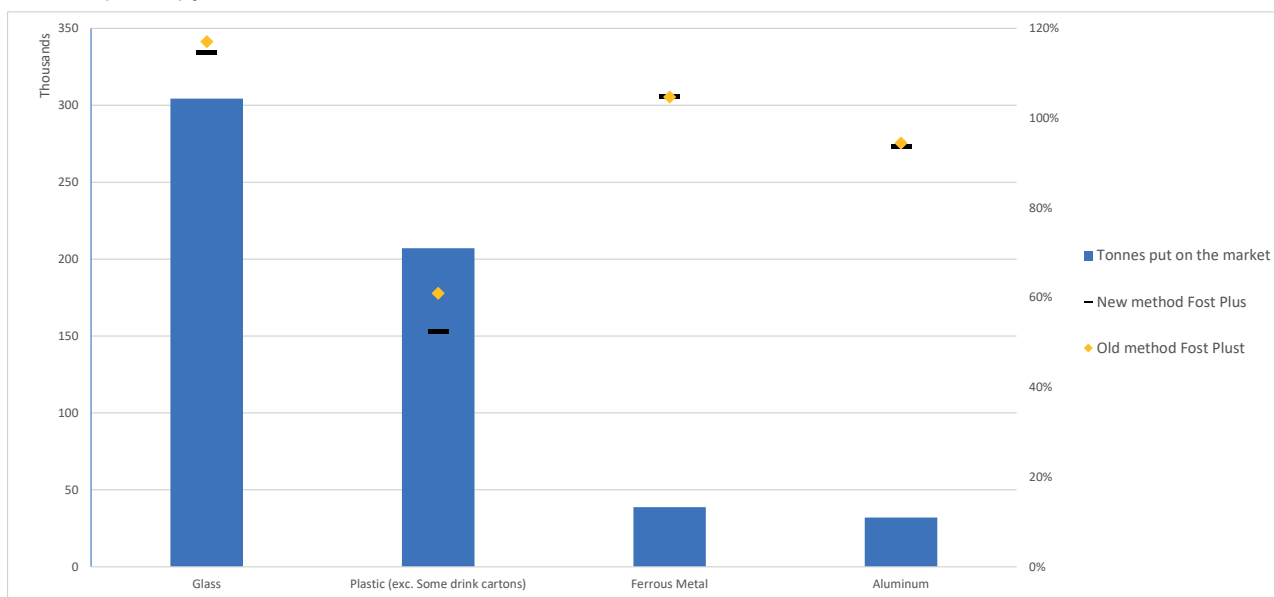
Fost Plus' calculation method is for monitoring the system results for the EPR system (therefore obligations and collective performance of its members). It was updated recently, incorporating some elements of the new Eurostat method. These are mainly related to losses during the sorting/recycling processes. The old method did not account for these. However, compared to the Eurostat method, it does not cover other losses stemming from free-riders, non-members or parallel imports as these are not relevant for its purposes. According to CIE, these methods will continue to co-exist in the future, as they have different objectives, and they should not be compared to each other³².

The graphic below presents the difference between the old and the new calculation method based on the EPR system. Only the materials that are of relevance for this study are included: glass, aluminium, ferrous metals, and plastic.

The results are for all packaging materials, as above, so the data do not provide specific information on bottles or cans.

The method used impacts results for each material differently. For aluminium and ferrous metals, the difference is negligible, less than 1 percentage points (pp). For plastics however, recycling rate goes from 61% to 52%. This 9 pps difference is important when it is considered within the debate of targets and conditional measures (for instance to introduce a deposit system based on current performance). These differences are mainly due to the different nature of materials and processes: for instance, humidity might impact cardboard more than aluminium, or losses at the recycling process might be more important for plastic than for other materials.

Figure 4 Fost Plus recycling rates for different materials, based on the old and new calculation method on the right axis, amounts (tonnes) put on the market on the left axis. Source: IVCIE



32 IVCIE, 2023, [Rapport d'activités 2022](#)

Discussion on a potential DRS in Belgium: three regional paths that need to converge

The discussion on a deposit system on single use beverage packaging in the country is not new, however had a different development trajectory in each region.

In Flanders, an impact study on a deposit system for single-use beverage packaging was conducted in 2015³³, analysing five different scenarios compared to a business-as-usual scenario (no-DRS). The study looked at economic and social costs for a DRS system as well as its potential to reach its objectives³⁴. It led to mixed outcomes, stating that introducing a DRS system would offer a partial solution to the littering issue and varying results for better collection and recycling rates. A number of potential drawbacks such as potentially high and unpredictable costs and limited understanding of quantifiable impacts on litter were nevertheless mentioned³⁵. The results of this study still shape the basis of debate on DRS in Flanders.

More recently, the government set a target of 20% in litter reduction between 2018 and 2020, which was not met³⁶. This re-triggered the debate on DRS. Finally in December 2022, it was announced that a DRS would be launched by 2025³⁷. Following this, preparatory works have started.

Digital DRS (DDRS) is a new, untried system combining elements of kerbside collection with deposit systems using digital technology. The DDRS functions with QR-codes placed on the beverage item and the disposal bins. The consumer scans the item as well as the bin/bag to claim the deposit.

Since June 2023, several pilot projects in collaboration with Fost Plus were launched to test a digital DRS (DDRS) in semi-open and controlled test environments. These places include a technology hub, a bank³⁸, a theme park (a holiday village), and selected streets in a coastal resort town³⁹. The pilot projects explored the necessary conditions for a well-functioning digital system⁴⁰. The results were published late December 2023⁴¹. Although these pilots provide some insights and finds that 'there are no unsolvable problems', the overall conclusions regarding various aspects of the system are unclear. Most importantly, due to their scale and nature, the pilots were not able to provide conclusive results on the effectiveness of the system to reduce littering⁴². Further, the report states that many unknowns remain, such as the costs for a full roll-out of the system, how much acceptability it has for the larger public, and how it would work in open situations with a much larger of elements interacting in complex ways⁴³. The digital DRS is further discussed in detail in the section below.

Independently of the above, some municipalities in Flanders implemented limited scale return bonus-type projects that can be considered as precursors to a deposit system. For instance, Bredene⁴⁴, a coastal town in Flanders, has put in place a system where consumers get EUR 0.20 when they bring back their cans and bottles to the beach bars.

The latest information from Flanders came in January 2024, while this case study is being finalised. The Environment Minister announced that they would wait for the results of the Walloon study to make their final decision⁴⁵.

In Wallonia, a study was conducted exploring the impacts of a deposit system for aluminium cans already in 2011⁴⁶. The study constituted an important 'state of the art' review of the available research up to 2011, focusing on cans. Similar to the OVAM study, it led to mixed outcomes in terms of social, economic, and environmental costs. While the social and environmental impact of introducing a deposit on cans was overall positive, the economic outlook

33 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

34 Ibid.

35 Ibid.

36 Recycling Netwerk Benelux, [Analysing the Digital Deposit Return System proposition of the Belgian industry](#)

37 VRT, 2022, [La Flandre veut introduire une consigne sur les canettes et bouteilles en plastique](#)

38 Ensemble pour une consigne digitale, 2023, [Le projet est sur de bons rails](#)

39 Comeos, [La consigne digitale testée au Coq et à Bobbejaanland](#)

40 Ensemble pour une consigne digitale, 2023, [Le projet est sur de bons rails](#)

41 OVAM, 2023, [The Evaluation Report for the Digital Deposit](#)

42 Ibid.

43 Ibid.

44 VRT, 2023, [Bredene réitère son projet pilote de consigne sur les bouteilles en plastique et les canettes](#)

45 RTL, 2024, [Demir attend l'étude wallonne pour mettre la consigne sur la table du gouvernement flamand](#)

46 Office Wallon des Déchets, 2011, [RDC Study on a potential deposit on Cans in Belgium](#)

was considered negative with the overall impact marginally beneficial⁴⁷. However, these results are said to be highly dependent on an important factor which could not be established: namely the cost of production/logistics of cans in Belgium⁴⁸.

Further, Wallonia put in place several pilot projects, which tested a *'prime de retour'* (a return bonus) of EUR 0.05 for aluminium cans. However, we were told that these are not considered precursors to a deposit system due to major differences in their structure⁴⁹. More recently, in parallel to the steps taken in the other two regions, a new feasibility and impact study is carried out to explore a deposit system and its implementation on the regions' own initiative⁵⁰. The study is assessing four different scenarios: a digital DRS, a classic DRS, a hybrid system (blue bag with digital DRS), and a digital system where the scanning takes places in the sorting centre whereas the items are collected as in the current system. It considers social, economic, and environmental impacts, trying to identify the most optimal option. In June 2023, the Wallon Minister of Environment had indicated a preference towards a traditional system, citing preliminary results of the study and consultations with stakeholders⁵¹. However, the final results arrived in January 2024 as this report is being finalised, suggesting a different conclusion: a hybrid system combining classical and digital deposit is mentioned as the best option⁵². This would entail adding bring-back points to ensure inclusiveness (further discussed below), which is a debated aspect of digital DRS. Based on their initial reaction, this mixed approach is contested by the industry⁵³.

In Brussels, DRS was tested in 2019-2020, through a pilot project with four bring-back points installed across the city. This project was abandoned as it did not lead to anticipated reduction in litter. In 2023⁵⁴, Brussels Environment published a document discussing the impacts of a deposit system for single-use beverage packaging in the Region. The main conclusion was that the impact of a deposit system would largely depend on what the policy wants to achieve as the main goal. While it would contribute to both public cleanliness and improving recycling rates, its impact on the former

would be more important⁵⁵. Further, following the renewal of the interest in the system, Brussels Region is not conducting a separate study but is participating in the steering committee of the Walloon study as well as the sounding board of the DDRS study in Flanders⁵⁶.

Additionally, and for all three regions, Fost Plus has been working on a feasibility study for a DDRS in collaboration with other business stakeholders Comeos (Belgian Trade and Services Association) and Fevia (Belgian Food Industry Association)⁵⁷. Conducted by PwC, a private consultancy, the study is detailing a roadmap for technical, legal, and operational aspects of a digital system for the entire territory.

Digital DRS: an innovative middle way or a false solution?

Facing the risk of having to redesign the entire EPR system and to lose their investments into sorting centres⁵⁸, Fost Plus proposed a Digital DRS (DDRS). DDRS is considered less disruptive since it is built on the existing system. It will complement the kerbside collection without the need of introducing reverse vending machines (RVMs). The latter have been and still are the main way of returning bottles and cans in other countries with DRS.

DDRS is a new approach: currently without prior examples elsewhere, apart from some pilot projects conducted in a limited number of countries, for instance the UK⁵⁹ and Ireland⁶⁰. It functions with unique QR codes placed on the beverage packaging and the disposal bins (in the case of Belgium, either blue bags and/or specific bins in the public space). The consumer scans the QR code on the packaging as well as the QR code on the bin bag to claim the deposit. The system necessitates a device to scan the codes, either a smartphone or a digital scanner (at home) and a European bank account.

47 Ibid.

48 Office Wallon des Déchets, 2011, [RDC Study on a potential deposit on Cans in Belgium](#)

49 ECOCONSO, 2017, ['À quand une consigne sur les canettes et les bouteilles PET ?'](#)

50 Tellier, C. (Minister of Environment for Wallonia), 2022, [Une Analyse De La Faisabilité Pour La Consigne En Wallonie](#)

51 Tellier, C. (Minister of Environment for Wallonia), 2023, [Consigne sur les canettes et bouteilles en plastique : le Gouvernement s'oriente à ce stade vers le système manuel](#)

52 We could not see the original report but newspapers reported on the results, see for instance [this article](#)

53 Ensemble pour la consigne digitale, 2024, [Ensemble pour une consigne intelligente : Etude wallonne privilégie la consigne digitale](#)

54 The summary does not specify when the study was conducted, but its publication date is 2023.

55 Brussels Environment Agency, 2023, Summary of the Study ['L'impact de l'instauration d'un système de consigne en Région de Bruxelles-Capitale](#)

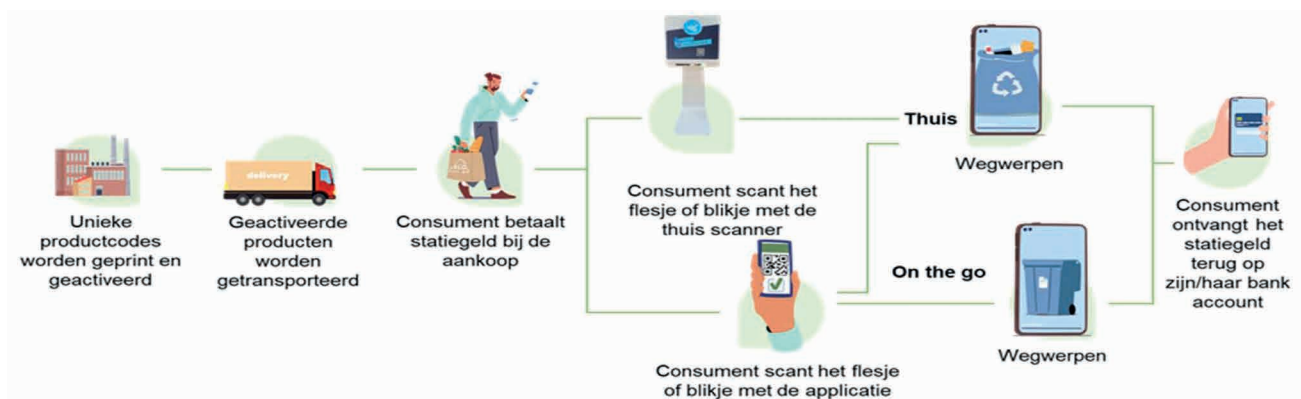
56 OVAM, 2023, [The Evaluation Report for the Digital Deposit](#)

57 Fevia, [The Belgian Food Industry Association](#)

58 Le Vif, 2024, ['Classic deposit would annihilate our investments in sorting centres'](#)

59 Polytag Blog, [Digital Deposit Return Schemes](#) and RE-Universe, [Digital DRS](#)

60 RE-Universe, 2021, [World-First Digital Deposit and Return Pilot](#)

Figure 5 The process of Digital DRS. Source: OVAM⁶¹

Fost Plus, Fevia, and Comeos have been developing the system in the last year based on a 'blueprint' study about implementation conducted by the consultancy firm PwC⁶². There has been a period of stakeholder consultation and introductory webinars for the local authorities to familiarise them with the elements of the digital DRS.

Since DDRS is a new concept, there is not much research about it in the literature or elsewhere. The blueprint study mentioned above concluded that it can be implemented in a cost-effective manner without disrupting the existing system⁶³. Arguments for and against a deposit system (both classic and digital) in Belgium are discussed below. Other, generally applicable advantages of a digital system put forward by its advocates are the following⁶⁴:

- Less costly to implement than the traditional deposit system, mainly due to not necessitating reverse vending machines (RVMs), the main collection method of a traditional DRS.
- No need for physical space for RVMs therefore less backlash from retailers who need to find space for the machines, adopt labelling and invoicing processes, and deal with cleanliness of the space as well as storage for the returned items.
- More convenient for consumers who can return the items and claim the deposit from their homes without the additional effort of having to go to a RVM.
- Better tracking of materials and flow of items due to digital technology.
- Flexibility in setting up deposit fees because each QR code can contain unique information.

- Easier for managing issues related to cross-border flows of people and products where this is a real concern, especially for border regions.
- DDRS has the advantage of also targeting drinks consumed on-the-go which can be returned to the above-mentioned 'digital bins', therefore addressing a 'high-risk' element of the litter issue.

On the other hand, DDRS is not without criticism. A vocal opponent, Recycling Network Benelux (RNB), announced that they commissioned their own study to scrutinise the assumptions of the PwC study mentioned above⁶⁵. Furthermore, they mention number of reservations⁶⁶:

- The cost-effectiveness of a deposit system can be observed in many cases, especially when it is financed 100% by the producers, avoiding costs for the public. This cannot be said for the digital version.
- The timeline for setting up a DDRS system cannot be taken for granted as there are no priors.
- A DDRS cannot assume it will be as effective as the traditional one without evidence and with all the unknowns/uncertainties of a new system.
- The proposed system is vulnerable to fraud, for instance one can scan the QR code and the bin/blue bag in the house without actually properly discarding the items.
- Since households will continue to use the blue bag, there will not be a separate collection of PET bottles and aluminium at the source, the DDRS will not reach the same closed-loop purity as the traditional one.

61 OVAM, 2023, [The Evaluation Report for the Digital Deposit](#)

62 PwC, 2022, [Every Packaging Counts DDRS Blueprint - Consolidated report](#)

63 Fost Plus, 2023, [Together for a smart deposit scheme: first pilot projects start in Flanders](#)

64 These positive points have been gathered by a number of websites, all of which are advocates and/or technology providers for DDRS. These include: [PolyTag](#), [SENSONEO](#), [Fost Plus](#), [Re-Universe](#) and [Fevia](#).

65 Recycling Network Benelux, 2023, [Une étude pour faire le point sur la consigne numérique](#)

66 The arguments are summarised from the website of Recycling Network Benelux.

Other arguments can be added to those gathered from various sources:

- Digital system will necessitate rearrangement of bins in public places with more cleaning/collection costs for the municipalities and/or managing the home collection through scanners (for instance when they malfunction), even though these will be mostly covered by the industry (Fost Plus), hidden costs might still be an issue.
- Further; the OVAM study exploring the DDRS states that it might not be possible to roll out all the necessary public bins in time for 2025, which would take around three years⁶⁷.
- A digital system raises questions of accessibility and inclusivity for groups who lack digital skills or simply do not have a smartphone, a bank account or a fixed residence, this is considered an important point in Brussels⁶⁸.
- There are questions about data privacy since a digital system necessitate personal data and a bank account. For instance, it is stated in the aforementioned OVAM report that based on the sensitivity level of the information, the system will need to adopt extensive protection measures, which are not fully defined yet⁶⁹. A particular point of attention is the issue of geolocation. To counter the most obvious fraud risk associated with DDRS (namely scanning the items but not discarding them), use of geolocation is suggested. In home use, scanner will have to be tied to an address and person, working only at the registered location⁷⁰. Outside their home, the user would need to activate their geolocation data- which is needed to verify that the user is near a disposal bin (against fraud). This raises questions about privacy and anonymity, even though the system does store geolocation data.
- The use of geolocation has other issues: for instance, if the public bins change place, their location settings will have to be reset.
- Further, the pilot projects carried out in Flanders suggest that the geolocation might have issues in remote/forest areas where bins or places due to limited connection coverage. This seems to undermine the argument that the DDRS is an

effective solution to the littering related to on-the-go consumption. It suggests that DDRS will not be a magic solution to the litter in such areas, where there is less social control and littering has higher impact on the environment.

- The same report states that there might be a 'tension' between ensuring privacy and combatting fraud⁷¹. Further, given the number of beverage packaging units in circulation annually (EUR 4.3 billion), around EUR 1 billion in deposits will be circulating in the system, which necessitates strong measures against cyber-attacks⁷².

Potential impacts of a deposit system on different stakeholders

It is beyond the limits of this study to provide an exhaustive impact analysis on the stakeholders in the case of introduction of a deposit system. There will be positive and negative outcomes for all groups, and these will vary. The majority of these impacts were already explored in the previous studies carried out by Flanders⁷³ and Wallonia⁷⁴. Therefore, in this section we only briefly outline the arguments for and against DRS put forward by different stakeholder groups. The arguments are compiled from a number of resources, including the interviews conducted and referenced in the text. As the digital DRS was discussed in the section above, we only focus on classical DRS and refer to the digital DRS only where it is directly relevant for the stakeholder's position.

The common argument against a DRS, mainly put forward by the beverage producers (therefore members of the EPR system), is that the current system is successful and needs minor improvements to reach the targets (see below). A deposit system in parallel is considered severely disruptive for the current one, while only offering marginal benefits⁷⁵. Another argument is that such a parallel system will create confusion and inconvenience for the citizens. Some opponents even state that the citizens will stop sorting and separating the packaging items not subject to DRS⁷⁶.

67 OVAM, 2023, [The Evaluation Report for the Digital Deposit](#)

68 Based on the interview with Brussels Environment.

69 Ibid.

70 Ibid.

71 Ibid.

72 Ibid.

73 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

74 Wallon Waste Office, [Réalisation d'une étude préparatoire à la mise en œuvre d'un système de consigne sur les canettes de boissons en Belgique](#)

75 Eunomia, 2023, [PET Market in Europe: state of play 2022](#)

76 See for instance: <https://detic.be/fr/consigne>

On the other hand, advocates of DRS argue that it will provide a solution to the growing littering problem and significantly improve recycling rates. The most vocal among them is Recycling Network Benelux and its initiative 'Alliance pour la Consigne' (Alliance for Deposit), a network of different actors advocating for the introduction of DRS. Its members include municipalities in all three Belgian regions, environmental services, and NGOs but also private actors like brasseries, banks, small retailers, or concert halls⁷⁷. Alliance pour la Consigne claims that the collection and recycling figures put forward by Fost Plus are 'too optimistic'⁷⁸, therefore an overestimation (these claims are discussed in the section below). This was repeated by others as well, for instance independent journalists who investigated the issue, who found that Fost Plus numbers were not transparent enough to be verified by third parties⁷⁹.

Recycling Network Benelux also argues that introducing DRS will save public authorities up to EUR 80M annual on cleaning costs by reducing the amount of litter in the environment. They state there is a strong public support for a deposit system, reaching 80%⁸⁰. A similar number, 76% is mentioned in the Brussels Environment Study mentioned earlier⁸¹. These results, however, are not stemming from representative surveys covering the entire population in question.

Private stakeholders, including beverage producers and retailers

In terms of the positions of different stakeholders, the actors currently involved in the financing and organisation of the EPR system for packaging waste through Fost Plus have been against the introduction of a deposit system⁸². This includes the private companies that Fost Plus is representing as well as Comeos and Fevia. They mainly focus on the economic impacts. Their main argument is the one mentioned above: that a traditional deposit system will not be a 'miracle' solution while being expensive to put in place and disruptive to the existing one⁸³. Very recently, Fost Plus stated that a classic DRS would 'cannibalise' the blue bag, taking out all the beverage packaging and thus severely undermining

the *raison d'être* of the sorting centres in which the industry has heavily invested⁸⁴. On the other hand, the latest developments seem to push these stakeholders to provide an alternative, namely the digital DRS. This is considered an effective 'middle way', keeping the current system intact while still targeting beverage packaging.

A traditional deposit system might imply additional costs and operational burden for retailers. Like the beverage producers, the arguments focus on the economic impact. These are mainly related to bring-back operations (e.g. space for RVMs, adjusting invoices and labelling, storage of returned items). The retailers might need to invest in the RVMs, readjust the human resources for additional tasks that the returns might entail, and lose space in the stores to stock the returned items. Most of these expenses are covered by the producers through administrative fees (handling fees)⁸⁵ but the worry of additional hidden costs and burden is nevertheless mentioned⁸⁶. Since a DDRS removes most of these aspects, it is reported that some might be supportive of the latter. However, their ultimate position will be determined by the final structure of the system and how much they will be compensated for these additional efforts and what exemptions can be put in place for small surface businesses⁸⁷.

Sorting and recycling centres

Sorting and recycling facilities might be impacted in a limited manner, depending on various factors. Overall, it is expected that the amount of sorted and recycled material will increase but how they are collected and through which source they arrive to the centres might change. In a traditional system, the deposited items will go to return points. This means the blue bag will have reduced quantities and will lose valuable material such as aluminium and PET. However, items returned to the take-back points will still have to be collected and sorted in sub-groups. Further, recycling centres might have higher quality recyclate as a result of DRS which would be an additional revenue for the actors that own the material. On the other hand, it was also argued that sorting and recycling centres might need to be adapted

77 For a full list of members, see here: <https://statiegeldalliantie.org/fr/qui/>

78 Alliance pour la consigne, [In Belgium](#)

79 Medor, 2021, Vallet, Cedric, '[Faut-il jeter Fost Plus à la poubelle ?](#)'

80 Recycling Network Benelux, [Consigne](#)

81 Brussels Environment Agency, 2023, Summary of the Study '[L'impact de l'instauration d'un système de consigne en Région de Bruxelles-Capitale](#)'

82 See for instance: Le Soir Newspaper, [Fost Plus n'est pas favorable à une consigne sur les canettes et les bouteilles en plastique](#)

83 See for instance the website of [Buurtsuper](#), an organisation of retail stores

84 Le Vif, 2024, '[Classic deposit would annihilate our investments in sorting centres](#)'

85 As reported by the interviewees.

86 As reported by the interviewees.

87 Brussels Environment Agency, 2023, Summary of the Study '[L'impact de l'instauration d'un système de consigne en Région de Bruxelles-Capitale](#)'

to the new streams which might lead to additional costs⁸⁸. It is important to note that considerable investments have been made recently in Belgium for additional recycling facilities, based on the current system⁸⁹. Depending on how a system change will impact these facilities, stakeholders might face new challenges or economic losses on these recent investments. The arguments of Fost Plus about the classic DRS and sorting centres stem from these aspects. However, the overall picture remains unclear since all will depend on the final structure of the system.

Technology providers

Technology providers is another stakeholder group impacted by the changes in the system. A traditional deposit system necessitates infrastructure for returning the beverage containers. The current experience in the countries with DRS shows that RVMs are the main method of returning the items. Thus, for RVM providers, a deposit system introduced in Belgium will lead to new business opportunities. In the case of a digital DRS, other technology providers will be called upon, from digital scanners to the ICT infrastructures, therefore creating business for another set of operators.

Local authorities

A considerable number of local authorities in all three regions are in favour of a traditional deposit system, but they do not want the system to provoke additional costs for them. Currently, the operations for the kerbside collection of the blue bag are organised by the local authorities, which are in return compensated by the producers (members of the EPR system) based on the volumes collected⁹⁰. Further, the SUP Directive will make the producers responsible for costs associated with cleaning up the litter since some of their products end up in the environment. However, neither of these cost categories are straightforward. In 2015, OVAM estimated that 15% of the costs of kerbside collection was covered by public authorities⁹¹. When it comes to litter, it is not clear how such costs will be calculated or agreed upon. The figures included in the Cooperation Agreement proposal for the implementation of the SUP Directive to determine how much the produ-

cers should pay is around EUR 114 million, around EUR 10 per capita⁹². This is highly contested by Fost Plus⁹³. As a result, public authorities remain vigilant as they do not want to shoulder more costs with ever-shrinking public budgets. For instance, in the case of a digital DRS, there are worries that the municipalities and waste operators will have to be involved in the operational aspect. Examples include maintenance and emptying of additional public bins or being the 'contact point' for the citizens when a digital scanner malfunctions⁹⁴. Such worries were recently voiced through a joint position letter signed by 55 municipalities across the three regions, opposing a digital system⁹⁵. A traditional system is less contested since municipalities have much less role in organising the returns. In both systems, they will benefit from a cleaner environment (less litter), however they will still be responsible for cleaning the remaining litter from the public spaces. Further, it is expected that the kerbside collection will be retained, therefore costs related to the existing system will not change considerably or go up, especially if collection frequencies remain the same, increasing costs per unit. In the same vein, the awareness raising costs for the public might also stay the same, as the litter issue will not be resolved completely⁹⁶.

Citizens

Finally, the citizens will also be highly impacted by a system change. Ultimately, it will be their cooperation that will determine the success of the system. They will have to adopt new behaviour: they will have to pay an additional deposit fee while buying an item, which they will lose if they do not return it. Depending on the system, they will either have to bring the containers back to a return point or scan the barcodes at home before putting them in the blue bag. If they consume beverages outside, they will either have to find a return point allowing them to reclaim the deposit or to bring the item back home with them. A qualitative study conducted by Brussels Environment revealed that most people think it is unlikely that they would bring the item back with them to their residence⁹⁷. A digital system might create barriers for some as it necessitates a smart phone (a scanner), an internet connection, and a bank account so that the deposit amount can be claimed. In a classical system, they might

88 OVAM, 2015, [Addendum to the impact analysis of a deposit system in Flanders](#)

89 See for instance: [FILAO : la première usine de recyclage intégrée de PET « bottle- to-bottle » en Belgique ouvre ses portes](#)

90 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

91 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

92 Fost Plus, 2023, [Directive SUP : ACI soumise au Conseil d'Etat](#)

93 Ibid.

94 Based on the interviews.

95 Le Soir, 2023, ['55 villes et communes s'opposent au projet de consigne numérique'](#)

96 Based on the interviews.

97 Brussels Environment Agency, 2023, Summary of the Study [' L'impact de l'instauration d'un système de consigne en Région de Bruxelles-Capitale](#)

find it difficult to store the items (which should be intact/uncrushed) and to bring them back to the return point. If the kerbside collection is retained, they will have to keep a blue bag at home for the non-deposited items (traditional DRS) or for all items (DDRS)⁹⁸.

On the other hand, if the litter quantities are reduced (whether through DDRS or a traditional one), less environmental pollution will be a common benefit and improvement of living standards. Thus, it is not clear at the moment, how a deposit system will be received. Research from the Brussels Region points out that while citizens are generally supportive of the idea of a deposit system, qualitative research draws a more complicated picture. The citizens are not clear about the added value of a deposit system compared to the current one (blue bag). Some feel that they are asked to do more effort without a clear understanding of the impact on recycling or litter. The report also states that there are some worries about the accessibility of bring back points, especially among the consumers without cars and those who do not shop at big supermarkets⁹⁹. As discussed above, the privacy implication of a digital system, perceived or real, might be a barrier for some users. Some other might struggle with the digital system for other reasons also discussed in the previous chapter.

Improvements to the existing system in the recent years

One of the main arguments against DRS is that other, less disruptive options are available to increase the collection and recycling rates and to reach targets set out by national and European legislation. As mentioned above, Belgium has a 90% target for separate collection of beverage packaging, all materials mixed. This complements the recycling rates set out by the EU legislation as well as the 90% separate collection target for plastic bottles. Although there are different timelines to achieve these targets, the overall direction is firmly set towards a constant improvement of packaging waste management.

In addition, the transposition of the SUP Directive leads to an extended responsibility of packaging producers in fighting against litter and contributing to

cleaning costs. This provides an additional impetus for new initiatives. Producers are already putting in place several new initiatives and will continue to do so in the short term.

The following initiatives target better separate collection of all packaging materials; including beverage packaging and also address the issue of litter; either directly or indirectly.

A bigger blue bag for PMC

The most important recent change in terms of impact is the expansion of the blue bag, introduced in successive steps between 2019 and 2021. It widened the types of packaging and material collected from the households across the country. The first comprehensive results of this change are available for year 2022. According to Fost Plus, it led to a 15% increase in plastic packaging collected, reaching a total quantity of 23 kg per habitant¹⁰⁰, corresponding to an additional 90 kt of material¹⁰¹. The types of packaging collected have further expanded in 2023 and now includes coffee capsules. It is expected to collect an additional 4 500 tonnes. This and other additional adjustments are expected to continue to improve the selective kerbside collection. However, since PET bottles were already collected with the blue bag, it is safe to assume that the additional quantities collected will mostly be other types of plastic packaging.

Moreover, there seems to be room for further increase only by raising awareness of the citizens: for instance, in Brussels the latest analysis of the residual bag reveals that 10% of the content is recyclable plastic materials as well as another 10% for glass, textile and metal¹⁰². In Flanders, the latest analysis show that 12% of the residual waste is plastic packaging¹⁰³. In theory, some or all of these can be diverted to the blue bag with additional efforts. For instance, in Brussels, in-depth studies were conducted with citizens to better understand the reasons behind lack of proper sorting and how these can be addressed¹⁰⁴.

98 Recycling Network Benelux, [Analyse de la proposition de 'Consigne numérique' Belge](#).

99 Brussels Environment Agency, 2023, Summary of the Study ['L'impact de l'instauration d'un système de consigne en Région de Bruxelles-Capitale'](#)

100 Fost Plus: [Chiffres Clés](#)

101 Fost Plus, [le nouveau sac bleu](#)

102 Brussels Environment Agency, 2022, [Déchets et ressources : état des lieux](#)

103 OVAM, 2023, [Local Resources Plan 2023-2030](#)

104 See for instance, [Citizen Waste](#).

Better sorting for PMC at small business and other assimilated sources

Fost Plus is also working on increasing the quantities separately collected from small businesses which are included in the municipal waste. Even though separate collection from businesses/offices is a legal obligation, the implementation is lagging behind. This is considered as an important venue for improvement. The objective was to double the amounts collected between 2018-2023, from 14 kt to 26 kt¹⁰⁵. In 2021, despite the Coronavirus measures and teleworking, 22 kt was collected¹⁰⁶. Further, awareness raising campaigns targeting businesses were put in place to achieve these targets. There is also a 'welcome bonus' for companies who sign a contract with collectors to encourage participation.

Better sorting in public spaces

Better sorting in public spaces is another aspect which currently offers an important margin for improvement. Recently, separate collection through color-coded bins (same colours used in households for kerbside collection) was introduced in public spaces (e.g parks, metro stations) and where it already existed, was extended to new areas. Further, all three regions are working on awareness raising campaigns targeting citizens to better address 'on-the-go' consumption.

Addressing litter through citizen engagement

There is a strong link between citizen engagement for better sorting and littering issue. All three regions have put in place several initiatives to address littering. An important change in this regard is the SUP Directive. It made the packaging producers responsible for covering clean-up and awareness raising costs related to littering of certain products, including plastic bottles. Although the Directive has been transposed to Belgian law¹⁰⁷, an operational framework remains incomplete, which also necessitates cooperation of the three regions¹⁰⁸. It is however already influencing policy choices as well as initiatives from the industry. For instance, BeWapp in Wallonia is a non-profit organisation, created by Fost Plus in cooperation with Comeos

and Fevia, working exclusively on the topic of littering¹⁰⁹. Through diverse actions and tools targeting local authorities, citizens, schools and private actors, BeWapp is contributing to cleanliness in the public spaces. One example is the pilot project with 19 municipalities in Wallonia, where a 'return bonus' of EUR 0.05 were paid to the consumers who brought back beverage cans. It collected almost three million cans over two years. This was the result of 2 158 citizens participating to the project, 1% of the total population of the municipalities¹¹⁰.

Its equivalent in Flanders, Mooimakers is also working for a 'litter-free' environment¹¹¹. It is a joint initiative between Fost Plus, OVAM (Flemish Waste Agency) and VVSG (the Association of Flemish Cities and Municipalities - *De Vereniging van Vlaamse Steden en Gemeenten*)¹¹². It aims at raising awareness and encouraging citizens to organise clean-up campaigns and/or to participate in others' initiatives and to clean the front of their own homes.

A similar initiative has seen the day in Brussels with the agreement of PPVC (*Accord pour la Propreté Publique et Cadre de vie*) between Fost Plus, Fevia, Comeos, and the public authorities¹¹³. This agreement has the same objectives as in other regions and will implement pilot projects in specific locations to contribute to litter reduction¹¹⁴.

Fost Plus is working on other initiatives as well. The Click¹¹⁵ project, in partnership with several cities in the three regions, is aiming at rewarding 'good behaviour' in the fight against litter. It offers Circular UCoins to the citizens when they take a picture of litter they found in the environment or their own waste before putting it in the right bin. It functions with an app downloaded on a smartphone and covers bottles, cans, posters, paper, cigarette butts, and others. The collected UCoins can be used as vouchers in stores and shops participating in the system. The Click website reports that 92 702 people are using the app and 1.6 million units of litter items were collected¹¹⁶.

105 Fost Plus, [PMC Entreprises](#)

106 Ibid.

107 Belgian Association of Entreprises, 2022, [België zet de Europese SUP-richtlijn om: start van een circulair gebruik van kunststofverpakkingen?](#)

108 Fost Plus, 2023, [Directive SUP : ACI soumise au Conseil d'Etat](#)

109 BeWapp, [Origine et mission](#)

110 BeWapp, 2021, Prime-retour des canettes abandonnées dans la nature: [Synthèse du rapport final d'évaluation](#)

111 [Mooimakers Website](#)

112 Mooimakers, [About Us](#)

113 City of Brussels, 2022, [Agreement on the Pilot Projects](#)

114 Ibid.

115 [Website of the Click Project](#)

116 Ibid.

Limited information on the impacts on beverage packaging

As can be seen from these examples, there are numerous initiatives which will contribute to the better sorting and recycling rates. However, the targeted impact of these measures on beverage packaging is not known. For instance, the enlargement of the blue bag is collecting more plastic and aluminium packaging. However, since PET bottles and drink cans were already collected prior to this change, it is not clear to what extent the blue bag will contribute to increase the collection and recycling of these specific fractions.

The same can be said for the litter. The initiatives described above only partially fulfil the producers' responsibilities (e.g awareness raising measures) and have a limited impact, at least for the time being.

An alternative approach would be to 'wait and see' as the real impacts of these policy initiatives will take time to emerge. However, this runs the risk of failing to reach the targets and to lose precious time to address these pressing issues.

A deep dive into the performance data: how much do we know?

In order to establish the potential impact of a deposit system on the current performance, it is imperative to have a clear understanding of the current situation. This is especially important for Belgium since the current performance is considered to be good enough to achieve high collection and recycling targets without major changes to the system.

To do this, several pieces of information are needed:

- Share of single-use beverage packaging within the total packaging amounts put on the market and collected/recycled (to determine the impact of a deposit system which will target the relevant fractions within the PMD blue bag);
- Share of different types of single-use beverage packaging within the total (to fine-tune/optimize the deposit system in terms of size and packaging types);

- Share of single-use beverage packaging found in litter (to determine the impact of deposit system on reducing litter).

However, finding these data proves to be difficult due to several limitations, which are presented below.

Eurostat Data alone does not provide the whole picture about beverage packaging

Data reported to Eurostat based on EPR system include a much wider range of materials than beverage packaging, therefore cannot be used to justify or refuse a deposit system. A detailed overview of the share of single-use beverage packaging within the total quantities put on the market and collected is not available. As mentioned above, Eurostat data remains limited in a discussion about DRS because it includes all packaging materials. It is based on and extrapolated¹¹⁷ from the EPR system, for both household and industrial processes. Thus, it is not possible to establish the impact of a deposit system by relying on this data only.

Limited data is available from the EPR system

The EPR system data has more granularity but still with limitations: it includes 16 fractions including PET bottles of different colours, big and small aluminium packaging among all others such as PE films, beverage cartons, polyolefins and others¹¹⁸. It seems there might be data available for each of these fractions, but this is not communicated publicly. In addition, while the data on the quantities put on the market might be based on units and/or weight, the collected amounts are only expressed by weight. This makes it very difficult to directly establish collection and recycling rates of single-use PET bottles, cans and glass beverage containers. Some estimations have been made, but they are based on multiple assumptions and calculation steps, which undermines their exactitude and verifiability¹¹⁹. They are discussed below.

117 The extrapolation and the new calculation method for Eurostat aims to revise the figures to reflect losses, whatever the EPR system does not cover, including free riders, parallel imports, reusable packaging put on and removed from the market.

118 The calculation method for Fost Plus and Valipac figures (EPR system) were updated recently, incorporating some elements of the new European calculation method but they retain some differences.

119 The Wallon Parliament Registry, [Written Question to the Minister on PETs and cans](#)

The EPR system does not cover the entire market

Another limitation is linked to the EPR system coverage. In Belgium, producers/importers are obliged to report quantities put on the market if they deal with 300 kg or more packaging annually¹²⁰. This exemption, called '*de minimis threshold*' leaves part of the packaging in circulation outside of the EPR system, thus the data does not cover those.

Further, even for those producers/important beyond the 300 kg threshold, it is not mandatory to become a Fost Plus member: some operators will be fulfilling the obligations themselves (however still sharing data for the EPR system). In 2021, 81 companies reported doing so¹²¹. Some others will be free riders, a phenomenon exacerbated by online sales (they will be putting packaging on the market without participating to collective action, nor organising it individually). Additionally, the quantities put on the market might be under-reported within the EPR system, since membership fees are determined by weight¹²². These are shortcomings undermining the robustness of the data based on the EPR system.

Scattered information based on rough estimations

When it comes to the share of beverage packaging within all packaging, an exhaustive overview is not available. The most detailed overview we could identify is from the 2015 OVAM study on the impacts of deposit system¹²³. It includes a flow analysis for beverage packaging in Flanders¹²⁴.

The figures are based on Fost Plus and year 2013. They include the total estimated amount of beverage containers by different material put on the Flemish market with a differentiation between small bottles (<0.5 litre) and the rest¹²⁵. The information is provided both in units and weight. Based on unit count, this suggests that 43% of the packaging is PET beverage containers and around 35% of this amount is small bottles. This changes dramatically when weight-based calculation is used: 64% of the beverage packaging is glass. Table 2 below recapitulates the information.

We found similar information in the Walloon Parliament Registry, in response to a question directed to Walloon Minister of Environment. It is from 2020 and based on EPR numbers, therefore contains more up-to-date information. It states that PET bottles make up 86% of the PET packaging material put on the market in Belgium. The ratio for aluminium and steel cans is 45% for those materials. Since the total tonnage of materials put on the market and collected via the blue bag is also available, using an estimation of unit weight for each PET bottle (24 g) and can (16 g), the document estimates the units of PET bottles and cans recycled via the blue bag system as 2 billion and 1.5 billion respectively¹²⁶.

There are multiple issues with these calculations. The conversion from weight to units is using an average weight for unit, whose source is not indicated. More importantly, the calculation estimates that the beverage packaging is represented in the same way within the quantities put on the market and those collected via the blue bag. These simplifications undermine the reliability of these figures. They also clearly demonstrate that data is not publicly available.

Table 2 The quantities of beverage packaging put on the market in Flanders, by type and shared within total, 2013. Source: OVAM¹²⁷

Beverage packaging type put on the market in 2013 in Flanders (all single-use)	Small bottles (<50cl) (tonnes)	Total (tonnes)	Total (units)	% Share within total (units)	% Share within total (tonnes)
PET	11789	32035	1 200 M	43%	19%
Aluminium can	4947	4965	375 M	14%	3%
Steel can	14152	11496	540 M	19%	7%
HDPE	1076	3471	112 M	4%	2%
Glass	4179	110160	176 M	6%	64%
Beverage cartons	1391	10747	370 M	13%	6%
Total	37534	172874	2 773 M	100%	100%

120 European Commission, 2022, [Country-specific notes referring to data on Packaging and Packaging Waste](#)

121 IVCIÉ, 2023, [Rapport d'activités 2022](#)

122 European Commission, 2023, [Guidance for the compilation and reporting of data on packaging and packaging waste according to Decision 2005/270/EC](#)

123 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

124 The report states that the numbers are based on Belgian market totals, simply extrapolated to FL based on population distribution.

125 Since the data per Region is not available, the volumes put on the market in each Region is likely to be an estimation based on the population.

126 The Walloon Parliament Registry, [Written Question to the Minister on PETs and cans](#)

127 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#) based on Fost Plus 2013 numbers. The units are expressed as seen in the table.

Collection and recycling rates based on weight do not provide an accurate picture for overall performance

Beyond data availability, another core issue is how the collection and recycling rates are calculated. This is one of the reasons why Fost Plus is criticised for being ‘too optimistic’ with its calculations. The main issue is that the overall performance is calculated based on an aggregation of different materials. This is especially problematic when glass is included in the weight-based calculations. Since it is a much heavier material than the rest, when included in the totals, it considerably skews the results. For instance, for year 2021, glass constitutes 37% of all materials put onto the market by weight. Furthermore, its collection rates are consistently high in Belgium, with more glass

packaging recycled than put on the market every year, due to parallel imports. For 2021, the recycling rate was 115%¹²⁸. That means, glass constituted 46% of all materials recycled in the same year. Thus, it has a double effect, it skews the results due to its weight but also due to its very high collection and recycling rates. Figure 6 below shows recycling rate for packaging materials with and without the excess packaging (exceeding 100%) that is collected. It is only relevant for glass and ferrous metals but due to the weight issue, this is enough to create a difference of 5pps for the totals (91% compared to 85% overall recycling rate).

The impact of including or excluding glass from the calculations can be clearly seen in figure 7 below. The overall recycling rate reaches 91% by weight, when glass is included in the calculations as opposed to 76% when it is excluded. This difference is really important, especially when set targets do not make a distinction between the materials such as in the case of Flanders, only stating a 90% target overall for beverage packaging.

Figure 6 Total amount put on the market and recycled, for selected materials with and without the excess, year 2021. Source: IVCIE, ACR+ calculations

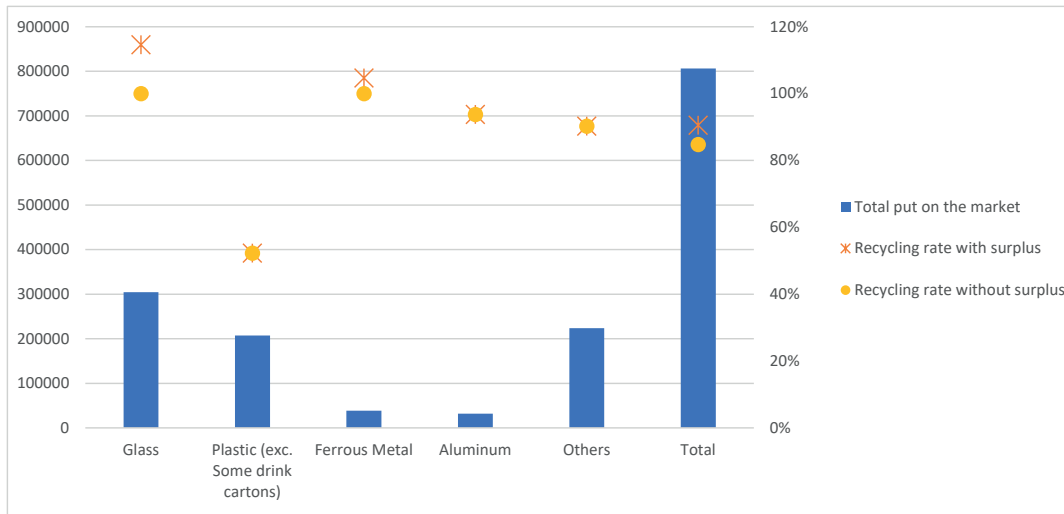
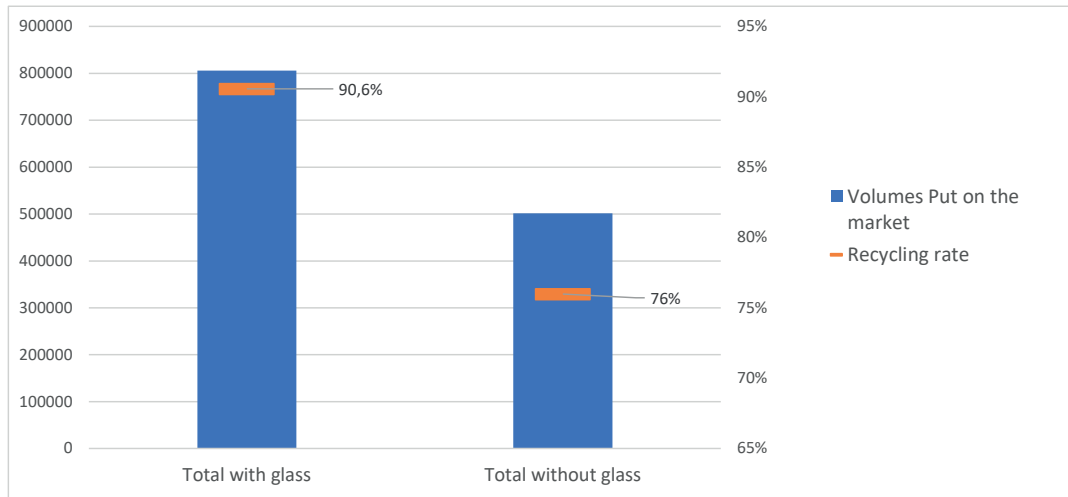


Figure 7 Total amount put on the market and recycled, with and without glass included in the calculations. Source: IVCIE, ACR+ calculations



Limited information is available on litter

The second important dimension is the impact on litter. Experience suggests that deposit systems reduce the amount of litter by targeting some of the beverage packaging found in the environment. However, to quantify its impacts in a specific context (e.g in a country or a given area) requires field data collected first-hand. In Belgium, there have been several studies looking into the issue of litter, some of them directly using first-hand data and some others based on approximations from other cases. Most of them are quite dated, and we could identify two recent ones, from Flanders and Wallonia. In Brussels, the 'Clean Brussels' strategy emphasises the importance of having 'objective measurement' of litter. The idea is to allow the identification of problematic areas as well as litter types and allow long-term observations¹²⁹. However, this is at the moment in the making, with no results/indicators available yet.

In Flanders, the most important and recent work is the litter count conducted in 6 500 representative sampling points. The sampling points are differentiated between high and low risk within urban and rural areas and further detailed by type (e.g beach, highway, shopping street). The resulting report indicates that the findings have a 95% confidence level when extrapolated to the entire Flemish territory. The only directly applicable fraction for this study is the category 'plastic bottles up to 3L'. They make up 1.2% by number (unit count), 4.7% by weight, and 13% by volume of the total amounts. Differences between sampling points and risk zones is also available, which provides further insights¹³⁰. It is not clear whether this is a study to be repeated or a one-off survey.

In Wallonia, a similar one-off field survey was conducted in 2019-2020. 330 sampling points were monitored, representing 28 different typologies. Within the categories of litter surveyed, the following is relevant for this study: glass packaging (main component being beverage bottles), beverage cans, and plastic beverage containers normally meant for the blue bag. The table below recapitulates the extrapolation results for Wallonia, based on units and weight¹³¹.

Table 3 Share of beverage packaging within litter quantities, based on the Walloon Litter Analysis. Source: Walloon Ministry of Environment

Item	Share within total
Share of glass food packaging (including bottles)	14% based on weight <1% based on unit count
Share of beverage cans within litter	7% based on weight 2% based on unit count
Share of plastic beverage containers normally meant for the blue bag	12% based on weight 2% based on units count

It is difficult to compare the results of these surveys since they do not use the same methodology and typologies. Further, while providing very valuable information, they represent the tip of the iceberg. Litter is a pathway to much larger environmental stressors such as microplastic pollution and biodiversity impacts on land and marine environments. Such impacts are hardly explored, therefore not accounted for in cost and benefit studies. For instance, the study for Flanders, despite being very detailed on cost-benefit analysis, does not include biodiversity impacts¹³². This creates a lack of understanding when discussing the benefits of reducing litter that goes beyond saving cleaning up costs.

Finally, it is worth remembering that a deposit system will not address legacy pollution but will only impact the beverage packaging units that will be put on the market after its introduction. Nevertheless, as the quantities of beverage packaging is constantly growing, it will still have a positive impact; at least by addressing the future litter.

129 Clean Brussels, [Section 2 of the Strategy](#)

130 OVAM, 2022, [Fractietelling Zwerfvuil 2019-2021](#)

131 RDC Study for the Wallonian Public Service, 2020, [Préparation, encadrement, suivi et traitement statistique de l'analyse des déchets sauvages en Wallonie](#)

132 OVAM, 2015, [Impactanalyse invoering statiegeld op eenmalige drankverpakkingen](#)

Discussion and conclusions

The complications regarding the introduction of a deposit system in Belgium offers important insights for the other Member States, and an opportunity to discuss various aspects of this policy tool. First of all, the country seems to be a case in point when it comes to demonstrate the difficulties of introducing a deposit system where there is a firmly established EPR system. The current framework, roles and responsibilities of different actors determine their level of support for a system change.

The relative success of the current system seems to be another determinant. Even though specific numbers can be disputed, Belgium is doing better than the EU average, especially compared to other countries without a deposit system. This point is crucial: in a country where collection and recycling rates are low, introducing a deposit system offers an effective way of addressing the problem. On the other hand, in a context where there is already a running system with considerable investments, the outlook might be different. This is mainly because the investment costs for implementing a DRS will be the same, with less important improvements delivered as an outcome. In such a context, every percentage point counts and the potential improvement is compared against the costs of changing the running system. The term 'costs' should not be understood as only cost to the producers or retailers, but also considered in terms of burden on the citizens who will have to adopt their habits and the efforts that went into consolidating the current system.

Against this background, robust and transparent data becomes essential to support the political decision-making process. However, as demonstrated above, the data is either scattered, incomplete or is built on rough estimations. The data provided by the EPR system, particularly when it comes to beverage packaging does not allow detailed scrutiny. It is possible that more data is available, but it is not communicated to the public in a systematic way that provides a clear understanding of how some of the figures are calculated.

When it comes to impacts and costs, there are simply few studies conducted and they rely on estimations with high error margins. This issue is not limited to Belgium but underlines a general problem. Cost-benefit studies are challenging to conduct and limited in their assumptions. Some of these limitations are unavoidable: it is easier to calculate the costs of setting up reverse vending machines than to account for the benefits of a cleaner marine environment due to less plastic pollution. For instance, the aforementioned Flanders cost-benefit study from 2015 does not include biodiversity impacts or general environmental benefits of introducing a deposit system (less litter). Therefore, it omits an important part of the picture. Furthermore, these cost and benefits are not distributed evenly across different stakeholders under different policy options. They might benefit one group more than the other while the costs might be distributed disproportionately to these benefits.

These complexities and the lack of robust evidence for or against the introduction of a deposit system seem to drive the on-going discussion in Belgium, undermining decisive political action. At the time of writing, it is not clear whether the political promise for a DRS will be fulfilled by 2025. Introducing a deposit system always entails substantial preparation and coordination of many actors. It is not certain whether such work can be undertaken before the federal elections that will take place in June 2024.

Annexes

Overview of targets and current results in Belgium

Table 4 EU/national targets compared to current performance, as reported by Eurostat or the EPR system

	Target (value/year)	BE Result (value/year)	Remarks (+ if target is met)
Packaging and Packaging Waste Directive (in force)¹³³			
Recycling rate for all packaging waste	65% (2025) 70% (2030)	80% (2021)	Reported by Eurostat (+)
Recycling rate for plastic packaging	50% (2025) 55% (2030)	49% (2021)	Reported by Eurostat (+)
Recycling rate for glass	70% (2025) 75% (2030)	98% (2021)	Reported by Eurostat (+)
Recycling rate for ferrous metals	70% (2025) 80% (2025)	97% (2021)	Reported by Eurostat (aluminium + ferrous metals combined) (+)
		99% (2021)	Reported by EPR system (global numbers for Belgium) _ Ferrous metals (+)
Recycling rate for aluminium	50% (2025) 60% (2030)	97% (2021)	Reported by Eurostat (aluminium + ferrous metals combined) (+)
		90% (2021)	Reported by EPR system (global numbers for Belgium) _ Ferrous metals (+)
National targets¹³⁴¹³⁵			
	Target	Result	Remarks
Recycling rate for glass packaging	90% (2021)	115% (2021) ¹³⁶	Based on EPR system (+) Calculated for BE overall, using the new Eurostat calculation method
Recycling rate for plastic packaging (without drink cartons)	50% (2021) 65% (2023) 70% (2030)	52% (2021)	Based on EPR system (+)
Recycling rate for aluminium packaging	75% (2021)	94% (2021)	Based on EPR system (+)
Recycling rate for ferrous metals packaging	90% (2021)	105% (2021)	Based on EPR system (+)
Overall recycling rate (all materials)¹³⁷	80% (2021)	91% (2021)	Based on EPR system (+)
Overall valorisation rate (all materials)¹³⁸	90% (2021)	94% (2021)	Based on EPR system (+)
Single Use Plastics Directive¹³⁹			
	Target	Result	Remarks
Minimum recycled plastic content for PET bottles	25% (2025) 30% (2030)	54%	Based on EPR System (+)
Single-use PET bottles collected separately	77% (2025) 90% (2030)	84% (2021)	Reported by Fost Plus – only for Fost Plus Members (EPR)

133 European Parliament, EPRS, 2023, [Revision of the Packaging and Packaging Waste Directive](#)

134 Walloon Environment Ministry, [Accord de coopération concernant la prévention et la gestion des déchets d'emballages \(M.B. 29.12.2008\)](#).

135 All the results in this section come from the IVCIE annual report: [Rapport d'activités 2022 de la CIE \(ivcie.be\)](#)

136 When the figures exceed 100%, this means quantities collected/recycled exceeds the quantities declared by the EPR members as put on the market.

137 IVCIE, 2023, [Rapport d'activités 2022](#)

138 IVCIE, 2023, [Rapport d'activités 2022](#)

139 European Commn, [Single-use plastics](#)

National Targets			
Recycled beverage packaging (Overall)	90%	96% (2021)	Based on EPR system (+)
Recycling rate for glass beverage packaging	NA	100% (21)	Based on EPR system
Recycling rate for PET bottles	90% (2029)	84% (2021)	Based on EPR system
Recycling rate for HDPE bottles	NA	89% (2021)	Based on EPR system

Interviews and email exchanges

We conducted two interviews, one with Brussels Environment Agency and one with OVAM, the Flemish Waste Agency. We had email correspondence with the Walloon authorities but due to the situation of uncertainty regarding the issue in the region and the on-going study, an interview was not considered useful at this point.

We enquired about the detailed background information on the figures focusing on PET bottles reported by Fost Plus but we did not get a reply that helps us to understand how Fost Plus calculates the recycling rates for PET bottles only.

