



White paper

Lessons from five years of packaging recycling

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Introduction

There can be no doubt that climate change is the biggest challenge we face this century. The World Health Organization has predicted that extreme weather events will be responsible for some 250,000 extra deaths every year. Never has there been a greater need to protect our natural resources, to handle waste responsibly so that it doesn't end up in the 'plastic soup' and to build sustainable societies.

Raw materials are not available in infinite quantities. Trees have to be cut down for paper, and oil has to be extracted – often in dubious conditions at remote locations – for plastic. Recycling is therefore high on every sustainability agenda, as it turns waste into a secondary raw material that can be used to make new products or packaging. For producer responsibility organisations like Fost Plus, recycling is our *raison d'être*, and this responsibility we take on with enormous enthusiasm: Belgium is one of the leading European countries when it comes to collection and recycling of household packaging.

Between 2019 and 2023, more packaging waste per inhabitant was selectively collected, the recycling rate for plastic packaging materials continued to rise and the share of non-recyclable packaging on the market fell. What we want to do today is take a look back in order to single out exportable expertise and skills and draw conclusions based on figures. At the same time, this will allow us to identify opportunities for the future. Because it is no longer enough for waste to become a secondary raw material. The most important thing is to protect those primary raw materials: to avoid cutting down trees and extracting oil. Valuable lessons can therefore be drawn from the past five years that will enable the role of organisations like Fost Plus to continue evolving within the context of society as a whole.

Enjoy your reading.



The circular economy reflected in accreditation

In 2019, the circular economy was higher on the agenda than ever before. It was during the World Economic Forum in Davos that year that Greta Thunberg uttered the now legendary words “our house is on fire”. Citizens, governments and businesses were aware of their responsibilities, of what was at stake. Everyone agreed on the importance of reducing the impact of packaging on the environment, resulting in ambitious targets enshrined in a legislative framework. 2019 was also the year in which the European Directive on Single-Use Plastics saw the light of day.

To provide an effective response to these changing needs, Fost Plus then developed a new strategy to guide packaging management over the next five years, between 2019 and 2023. The idea was to work with all partners in the chain to contribute actively to the circular economy in Belgium by proposing a sustainable and efficient recycling solution for every item of packaging that is put on the market, and to provide citizens with a convenient packaging sorting solution at every location. This strategy was translated into a three-pillar approach, which has been implemented over the past five years.

1. Sort more at home
2. Increase out-of-home collection
3. Increase the recyclability of packaging

In what follows, we take a look back at the past accreditation period. Between 2019 and 2023, packaging management in Belgium underwent significant development. The following chapters emphasise the main objectives and how we achieved them. We draw lessons from the results. These form the cornerstones of our approach in the new accreditation period, that started beginning of 2024, in which we want to respond to the challenges we face as a society.

Producer responsibility organisations: a collective solution to a collective challenge

Companies marketing packaged products are financially and operationally responsible for the end-of-life phase of their packaging. They can meet this responsibility either individually or as part of a collective system: the producer responsibility organisation (PRO). In Belgium, an estimation of almost 90% of all relevant companies are members of Fost Plus, which manages their household packaging. Fost Plus was created by the business community in 1994. Not long after, the first blue PMD bag appeared on the streets.



What is PMD?

PMD stands for plastic packaging, metal packaging and drinks cartons. In Belgium, these are collected together in the blue bag. The packaging is separated into 16 material flows at dedicated sorting centres, for recycling.

Packaging management is a regional competence in Belgium. To avoid regional differences in how PMD, paper/cardboard or glass are collected and processed, the Interregional Packaging Commission (IRPC)¹ provides an overarching framework. It accredits the organisation responsible for these activities every five years. This clearly defined approach enables it to set ambitious targets each time and to monitor their achievement. The previous accreditation ran from 2019 to 2023; the current accreditation spans the period 2024 to 2028.

Valipac, the sister organisation of Fost Plus, assists companies in managing their corporate packaging. There are also producer responsibility organisations for electrical and electronic appliances (Recupel), batteries (Bebat), mattresses (Valumat), car tyres (Recyctyre) and so on.

¹ - <https://www.ivcie.be/>

Dealing with freeriders: towards a level playing field

Freeriders are companies that knowingly or unknowingly evade their take-back obligation. As soon as companies put more than 300 kg of packaging on the market per year, they must comply annually with:

- the take-back obligation: achieving a recycling percentage set every year for the packaging they put on the market
- the information obligation: informing the IRPC every year about the nature of their packaging and their recycling rates

You can of course meet these obligations individually, but it is usually easier to become part of a collective system for this purpose – in other words, to join Fost Plus. Although enforcement of these take-back and information obligations is a matter for the authorities, Fost Plus actively tracks down companies that evade their obligations. This is necessary because the collective is now saddled with the collection, sorting and recycling of their packaging.

European recycling targets

As PRO for household packaging, Fost Plus is required to report annually on the recycling results it achieves on behalf of industry, which is keen to achieve ambitious targets. There are the targets imposed from outside, such as at European level, but the companies themselves often go a step further.

	2025	2030
Glass	70%	75%
Paper-cardboard	75%	85%
Ferrous metals	70%	80%
Aluminium	50%	60%
Plastic	50%	55%
General – household packaging	65%	70%

European recycling targets for packaging by material type, as set out in the Packaging and Packaging Waste Directive (2018)²



² - https://environment.ec.europa.eu/topics/waste-and-recycling/packaging-waste_en



A new measurement methodology for calculating recycling rates

Since 2020, the recycling rate is calculated using a specific methodology imposed by Europe with a view to consolidation at European level. The recycling rate is now measured later in the chain, so that process losses or the presence of unsuitable materials (such as moisture or product residues) are deducted from the recycling rate. This new measurement methodology allows all European countries to be measured against the targets in the same way.

Lesson 1

A central point of contact ensures clarity. For our partners (intermunicipal companies, waste operators, sorting centres) we create a clear data and materials flow so that we have a 360° view of incoming and outgoing packaging. We play a pivotal role in the recycling chain, combining the advantages of scale with a service to our members that is tailored to evolving needs and requirements. But our central positioning is also good for our main group of stakeholders, citizens, who can sort in the same way any time, anywhere, from the coast to the Ardennes.



Expanded PMD collection

Objective: 65% plastic recycling

A phased approach

1. Collecting more

The blue bag plays a vital role in the packaging recycling chain. Since its introduction, it has offered a standardised solution to collecting and sorting packaging and putting it out for collection. Since 2019, more types of packaging have been allowed in the blue bag. Besides plastic bottles and flasks, almost all plastic packaging has been allowed in it since then. The objective was to collect an additional 8 kg per inhabitant annually in this way, increasing PMD collection from 15 to 23 kg per person per year. This collection proceeded in phases, in parallel with the construction of new high-tech sorting centres to be able to sort all the additional material. In 2022, the first full year that every Belgian resident had access to the new blue bag, that target was met and we collected a total of some 90,000 tonnes of extra (mainly) plastic packaging material that had previously been incinerated as residual waste.

To sort that extra (plastic) packaging, six new sorting centres were built that not only had the required capacity but were also equipped with the latest technologies for detailed sorting by material type. In addition, the sorting centres are built for flexibility, so that they can respond to changes in the packaging market or in collection.

Sorting centre

Location

Valtris	Couillet (Charleroi)
Val'Up	Glin (Mons)
Sitel	Engis (Liège)
Indaver	Willebroek
Prezero	Evergem
Vanheede	Rumbeke

Six high-tech sorting centres sort the contents of the PMD bags according to the same specifications into 16 material types, and in future perhaps even more.

2. New recycling markets

The goal was to further increase the plastic recycling rate from 42% in 2019 to 65% in 2023, an objective that was a lot more ambitious than that imposed by Europe. To achieve this, new recycling markets needed to be accessed, because different types of plastics were now being collected for which recycling was not yet mainstream. We ended 2023 on 68%, the highest figure in Europe.





Bottle-to-bottle recycling

In 2020, only 9% of plastic packaging waste was recycled in Belgium – a significantly lower figure than for paper and cardboard, glass or metals. But because a circular economy only makes sense when it is as local as possible, Fost Plus contracted with recycling partners to bring plastic recycling to Belgium as much as possible. One of these partners is FILAO, a collaboration between waste processor Veolia and bottled water producer Sources Alma. In Charleroi, FILAO recycles clear and blue PET drinks bottles collected through the PMD system into granulate, which the Sources Alma production site in northern France uses to make new drinks bottles. These flow back to the Belgian market through Sources Alma's various brands as part of the collaboration.

FILAO has a recycling capacity of 40,000 tonnes of PET per year. About 70% of the clear transparent and blue transparent PET bottles collected in Belgium through the blue bag are processed there. These new bottles contain more recycled material than the percentage imposed by Europe (25% by 2025, 30% by 2030).

This recycling for food-safe applications is made possible by FILAO's high-tech processes, but also by the consistent quality of the PET flow from the sorting centres.

3. Recycling close to home

Meanwhile, contracts were also awarded to bring the recycling of these plastic materials to Belgium.

Packaging type	Partner	Location	Operational	Investment
PET bottle-to-bottle recycling	FILAO	Charleroi	December 2022	€40 million
Mixed polyolefin (PO) and mixed films	ECOO	Houthalen-Helchteren	2020	€10.5 million
PE film-to-film recycling	ECOO	Beringen	September 2022	€47 million
PET trays and bottles	MOPET Belgium	Neufchâteau	2024	€30 million
PP and HDPE packaging	Morssinkhof Plastics Belgium	Lommel	2024	€30 million
PS and PO packaging	Plastics2Chemicals	Antwerp	2024	€130 million

Thanks to the new recycling contracts, 78% of all household packaging and 43% of all plastic packaging materials were recycled on Belgian territory in 2023. These figures will rise further as all the new plants become operational, mainly due to additional local plastic recycling.

Investments in the sorting and recycling centres and annual revenue from the sale of recyclate represent an injection of around 1 billion euros into the local circular economy between 2019 and 2025, when all the new plants will be operational.



Rising recycling rates

Belgium is already meeting all recycling targets for 2030 today. As a result, we are among the top European countries in terms of packaging collection and recycling. In addition to plastics, there has also been good progress in drinks carton recycling, where the expansion of sorting has had a marked effect on their activities. For the other packaging materials, the already high figures remain stable.

Material	2019	2020	2021	2022	2023
Glass	110%	113%	115%	123%	120%
Paper-cardboard	103%	101%	93%	92%	94%
Ferrous metals	102%	104%	105%	105%	105%
Aluminium	91%	93%	94%	94%	94%
Plastics	42%	46%	52%	61%	68%
Drinks cartons	58%	58%	71%	70%	72%
Recycling rate share of packaging put on the market by Fost Plus members	88%	89%	91%	95%	97%

The new measurement methodology (see earlier) has applied since 2020. In this table, the 2019 recycling figures have been recalculated using the same method for the sake of comparison over the past 5 years. The new point of measurement has had little impact on the Belgian results, given the high purity of the bales leaving the sorting centres.

Fost Plus calculates the recycling results in relation to the members, as it can only see what its members put on the market. The IRPC reports the figures for the entire market to Eurostat for consolidation at European level, including corporate packaging and material types not monitored by Fost Plus.

More than 100%?

Fost Plus calculates the recycling figures using the legally defined calculation method (see above). The denominator reflects the reported packaging put on the Belgian market by our members. The numerator, indicating the recycled quantities, also includes collected packaging materials put on the market by non-members or purchased by consumers abroad, over which there is no oversight. Especially for glass, this gives a distorted picture, due to these cross-border purchases.

Lesson 2

Ease of use increases the participation rate, as citizens play a key role. Sorting has become even easier for citizens. Plastic packaging that might previously have caused doubts can now simply go into the blue bag. This means that the sorting message has been able to move towards what is allowed (a positive message), rather than what isn't allowed as previously (a negative message). Not only is the amount of packaging collected for recycling increasing, but the proportion of sorting errors is also continuing to fall, which benefits quality.



Lesson 3

Local economies shape local communities. By recycling materials close to home, we reduce our dependence on volatile foreign markets, shrink our carbon footprint and make high-quality recycled materials available to the local manufacturing industry.



Sorting wherever packaging is disposed of

Objective: Collect 26,000 tonnes of PMD out of home

Citizens are increasingly consuming outside their home and on the go. Marketing and analytics firm Kantar³ calculated that 36% of spending on snacks and drinks takes place outside the home, the largest share (10%) in bars, cafés and coffee shops. Although a lot of these are probably not packaged, it is fair to say that a significant amount of packaging is discarded either at the point of consumption or at other locations outside the home. We are also spending more and more time at work, at school or at the sports club – where more packaging is also being thrown away as a result.

The objective was to increase the volume of out-of-home PMD collected from 14,000 tonnes in 2018 to 26,000 tonnes in 2023 – a target that was actually achieved.

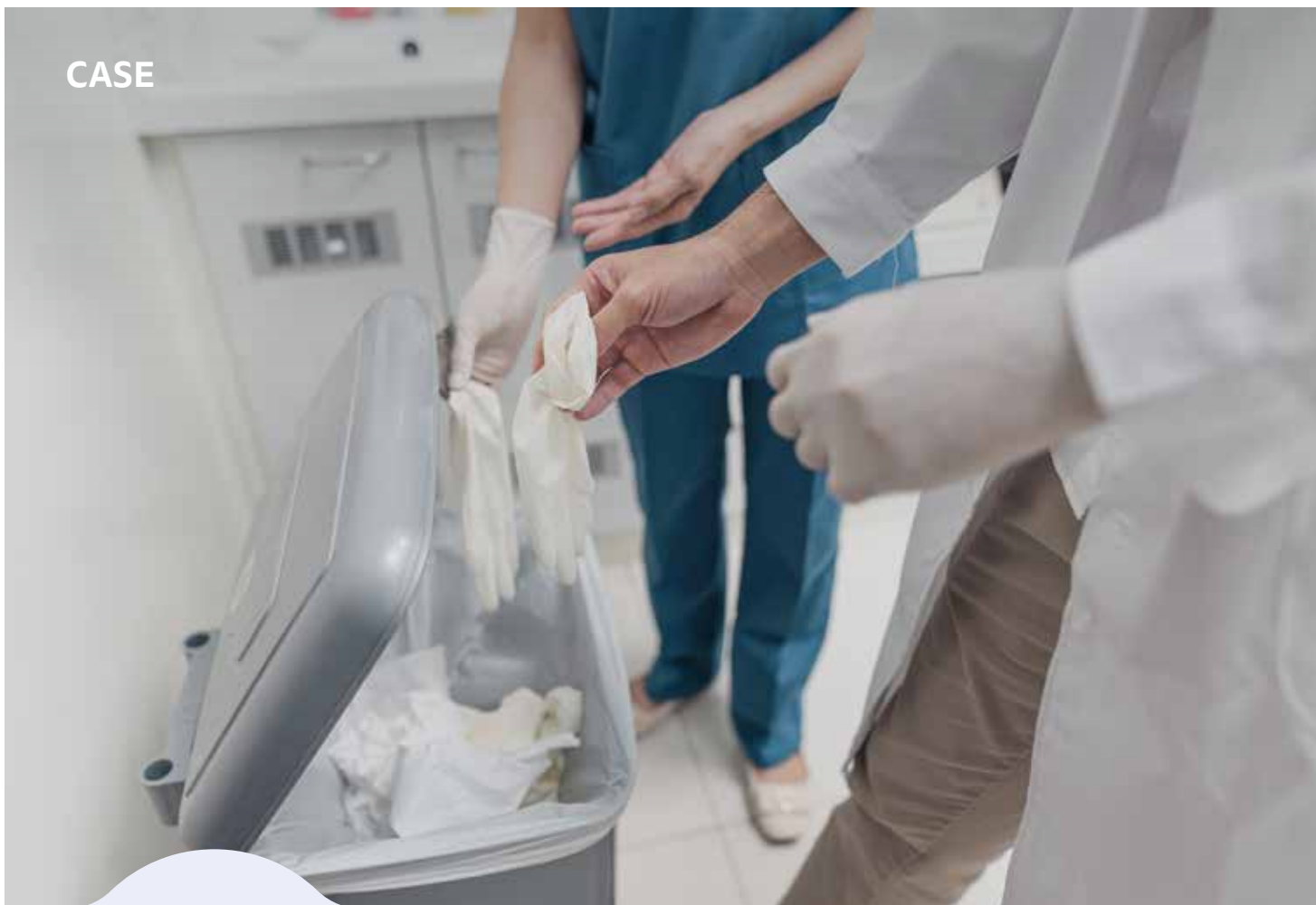
In its policy, Fost Plus focused in the last period firstly on packaging management in the workplace and secondly on specific target sites.

- a) Despite the sorting obligation, the residual waste of more than half of the companies we checked still contains PMD. Fost Plus is working with Valipac, government agencies (OVAM, Bruxelles-Propreté/Net Brussel and the Département du Sol et des Déchets) and private waste operators on a targeted action plan to encourage companies to collect PMD separately or optimise collection. A welcome bonus is awarded for this purpose, for example. Between 2019 and 2022, some 6,700 companies were eligible for this welcome bonus. Targeted communication actions further boost sorting quality, which again often leaves much to be desired.
- b) In its approach to target sites, Fost Plus is increasingly seeking economies of scale through the smart combination of information, communication and infrastructure. This sector-based approach allows specific problems to be tackled together with the bodies involved, which increases the chances of success. It also takes account of the changing legislative framework. For example, Fost Plus and the events sector have been working together in connection with sorting for many years. Talks have now been initiated with a view to reconciling the obligations on reuse with the reality on the ground.

³ - Kantar, 2022.

<https://www.kantar.com/inspiration/fmcg/out-of-home-snacks-and-drinks-spend-is-still-8-lower-than-2019>

CASE



Sorting at hospital

A lot of packaging waste is generated in a hospital or healthcare facility: regular PMD packaging like what we discard at home, but also specific medical packaging. Much of this needs to be disposed of safely, but there is also quite a lot of medical packaging that is similar to household packaging, which could actually be included in that waste flow. However, this means potential confusion over sorting.

Fost Plus therefore worked on adapted sorting rules for hospitals and healthcare facilities. These were drawn up together with the medical sector and private waste operators, based on needs on the ground. An assessment was conducted to establish what medical packaging is similar enough to household packaging to be included in the flow and the specific sorting errors likely to arise in this setting. This enabled us to organise targeted communication actions to encourage the proper sorting of more traditional PMD, and the sorting rules to be extended. The new sorting rules were validated by Domus Medica, the industry federation.

The fight against litter

Unfortunately, consumption of food and drink outside the home is synonymous with litter. Any packaging that ends up as litter is not only an ecological disaster but is also lost to the circular economy. For companies, this means both the loss of recycled materials from which their packaging can be made and damage to their image. Through Fost Plus, industry has made a strong commitment to fighting litter in recent years. Cooperation agreements have been signed with the three regions to tackle the problem together. Through the anti-litter groups Mooimakers in Flanders and Be WaPP in Wallonia, we have mobilised as many people and organisations as possible in a broad social movement for cleaner public spaces. Fost Plus earmarks 17 million euros a year for this purpose.

Both Flanders and Wallonia had a target of reducing litter by 20% between 2016 and 2022. OVAM's latest litter survey⁴ was conducted in 2021 and recorded an 11% decrease compared to the baseline year, 2015. In 2022 Flemish environment minister Zuhal Demir therefore announced her intention of stepping up the fight against litter by introducing a deposit system for plastic drinks bottles and cans.

By contrast, Be WaPP had litter counts carried out on specific pieces of land in different settings (rural, urban, schools, car parks, etc.) during the same period and observed an overall decrease of 37% between 2016 and 2021. The decrease was greatest in semi-urban settings (47%). Rural municipalities experienced the lowest decrease (11%) but were actually tidier to begin with – and remained so. Environments where community spirit is more of a factor, such as shopping streets and schools, also experienced a greater decrease in the number of pieces of litter counted than impersonal locations where a lot of people pass through, such as petrol stations.

Lesson 4:

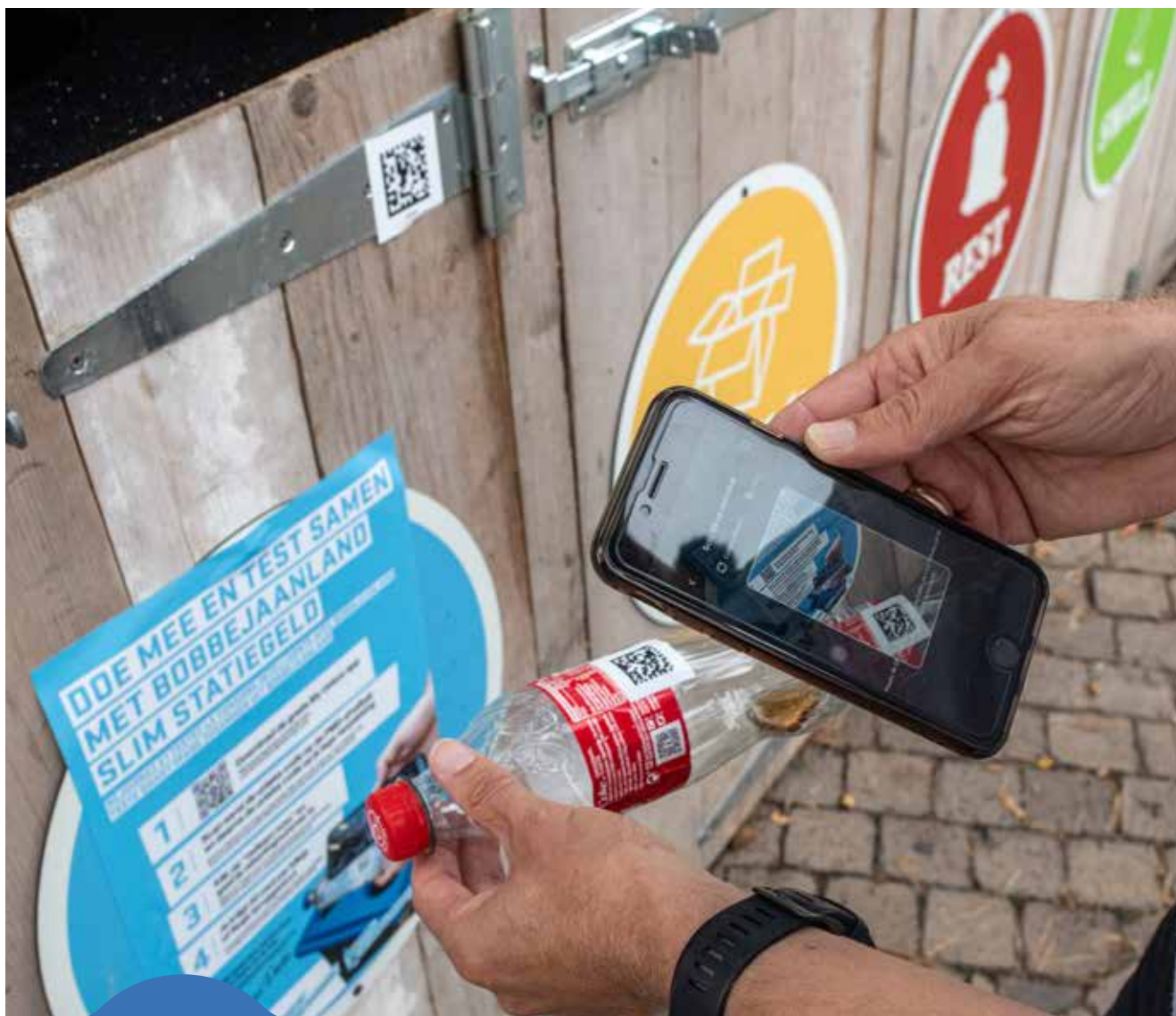
'Working together' is at the heart of any effective litter approach: too many parties are involved for any one actor to bring about the necessary behavioural change on its own. The answer lies at the intersection between public education, infrastructure, environment, participation and enforcement. A consolidated and coordinated approach on the ground produces economies of scale and is thus the key to success.

What is the key to success of the Walloon litter approach?

Public cleanliness is a social challenge that brings together all sectors of society, both public and private. Be WaPP has filled the gap that existed in Wallonia by taking on a pivotal role in this respect. The organisation has succeeded in ensuring consistency in actions at regional level and creating a genuine centre of expertise on public cleanliness, serving as a point of reference for local public administrations. By addressing the sustainability of society's behaviour in the broad sense, Be WaPP focuses not on a single type of waste but on the wider problem. It has raised awareness, mobilised and supported stakeholders, and encouraged and facilitated collaboration with up-to-date, high-performance tools.



4 - <https://www.vlaanderen.be/publicaties/fractietelling-zwerfvuil-2019-2021-eindrapport>



A smart digital deposit return system

Deposit return systems are often depicted as a miracle solution to the problem of litter. This view definitely needs some nuance. First, Belgium already has a well-functioning system for collecting packaging: the blue bag. Unlike other countries where deposit return systems were often introduced with collection as the primary objective, in Belgium a deposit return system will have to complement the blue bags. A smart system with digital validation ensures that citizens don't end up dropping the sorting habit and has the added advantage that every blue bag and blue bin (in the public domain) becomes a collection point, ensuring a proper solution at the place and time of consumption⁵.

Second, litter is not limited to plastic drinks bottles and drinks cans: there are also cigarette butts, plastic bags, dog waste and so on. An efficient litter approach therefore needs to be designed holistically, involving adapted infrastructure, public education about the impact of littering, designing packaging so that it is less likely to end up as litter and effective enforcement. The revised European Single-Use Plastics Directive⁶ (SUP) states that producers of plastic products and packaging must bear the costs of cleaning up and raising awareness about litter generated by their products and packaging. The transposition of that directive into Belgian law is expected to give them the opportunity to work more closely with local authorities to shape the approach to litter in practice, with Fost Plus in a facilitating role.

5 - <https://www.slimstatiegeld.be/>

6 - https://environment.ec.europa.eu/topics/plastics/single-use-plastics_en



BETTER RECYCLABLE PACKAGING

Objective:
100% recyclable packaging

Packaging is sustainable only when it is conceived that way right from the design phase. Packaging companies have committed to eliminating all non-recyclable packaging from their ranges by 2025. Between 2019 and 2022, some 2,500 tonnes of non-recyclable packaging effectively disappeared from shop shelves.

Fost Plus is working with the industry on operational solutions to integrate certain types of packaging into the existing systems. For example, opaque PET bottles were integrated into the recycling flow in 2023. Following modifications at the sorting centres, they are now sorted as a separate type of material, using optical separators. Contracts have also been signed with specialised partners for the recycling of this packaging. From 2024, opaque PET bottles will be recycled in Belgium, at the brand-new plant being built for the purpose in Neufchâteau. In the meantime, this material flow goes to a partner in the Netherlands. This totals some 2,300 tonnes a year.

Fost Plus also offers advice and support to businesses on structurally modifying packaging that is impossible or difficult to recycle, in order to make it more recyclable. This may involve obstructive packaging⁷ or the optimisation of packaging that is theoretically recyclable but presents challenges in practice.

⁷ - Obstructive packaging is identified as a category by the IRPC.

<https://www.fostplus.be/nl/blog/hinderlijke-verpakkingen-update-december-2023>

Pack It Better, the Belgian hub for eco-design

What with greenwashing, plastic bashing and increasingly critical end consumers, making informed choices about types of material or packaging is no easy matter for companies. Fost Plus and Valipac therefore created the Pack It Better platform, where experts and companies can talk to each other.

<https://packitbetter.be>



CASE



New recyclable packaging for Senseo coffee pads

Previously, the packaging for Senseo coffee pads consisted of a multi-layered material made of plastic and aluminium that could not be separated. Such packaging cannot be recycled and is classified as obstructive, which means that it is subject to a specific, high Green Dot rate⁸.

Careful research was carried out to work out how the aluminium layer could be left out while maintaining sufficient packaging quality to keep the coffee pads in good condition. This resulted in recyclable packaging made of polypropylene (PP) mono-material. The new packaging has now been extended to the group's other coffee brands: Jacqmotte and Douwe Egberts.

⁸ - Companies finance the recycling chain for their packaging through a specific Green Dot rate per material type.
<https://www.fostplus.be/en/blog/green-dot-rates-what-why-and-how>

CASE



Danone optimises recycling potential of Actimel bottles

Actimel bottles were already recyclable if sorted correctly in the blue PMD bag. However, the label around the bottles prevented them from being detected accurately. By leaving off these labels, Actimel has improved the products' recycling potential. Furthermore, less plastic is used: the quantity of plastic entering the market in Belgium alone has been reduced by 22 tonnes per year.

CASE

The iconic Pringles tube becomes recyclable

After five years on the drawing board, a new Pringles tube was launched in spring 2023 that is 90% paper fibre and no longer has a metal base. This metal base on the old tubes meant that they could be classified neither as paper-cardboard waste nor as aluminium, and were therefore completely unrecyclable. The metal base has been replaced by a paper base, so the entire tube – except for the plastic lid – can now be sorted with paper and cardboard for recycling. This represents some 300 tonnes of packaging per year.

Meanwhile, several competitors and private labels have also started marketing similar packaging, for crisps and other products.

Lesson 5

Packaging and product go hand in hand. An integrated approach is needed to achieve the most sustainable packaging system. Recyclability and the use of recycled materials are the bare minimum in this respect, in terms of both what citizens expect and what the law requires. New business models without packaging or with reusable packaging will rightly become increasingly important.



conclusion

These encouraging results do not diminish the challenges we face as a society. The realisation that things can and should be done differently has now got through to all parts of society. In the future, companies will play an even more decisive role in making the value chain more sustainable. The impact of their packaging on the environment must be reduced, meaning companies will need to make their packaging systems more sustainable and commit to reusable packaging or packaging-free business models. Recycling alone is no longer enough.

However, prevention should not be an end in itself. Fost Plus stands for an integral approach to the product with its packaging to arrive at the most sustainable solution. For example, in some cases food waste due to unsuitable packaging has a larger ecological footprint than single-use packaging that is recycled. The best, most sustainable packaging solution – measured by the criterion of user convenience – must be sought for each product and each application.

The past five years of packaging management in Belgium have yielded valuable insights. The 360° view that Fost Plus has pieced together of the materials cycle and the profound understanding of the value chain that has been achieved mean that smart collaboration with all partners is both necessary and possible. Decisions are made on the basis of knowledge and data. Local ecosystems are more efficient and are redefining sustainability by benefiting local communities. This is reflected in our results, which represent a good basis on which to build in the years ahead. In this way, the role of a PRO can evolve further towards a more social role, locally rooted and citizen-centred.

The new accreditation translates these ambitions into concrete actions for the next five years, in close cooperation with the whole chain. Some of the points on which we will focus are as follows:

- a. Fost Plus wants to reinforce the basic scenarios, for instance by further developing the blue bag system, but also by testing alternative collection scenarios for specific contexts (such as underground collection for high-rise buildings).
- b. Fost Plus aims to play a key role in the transition to more reusable packaging and packaging prevention.
- c. Fost Plus wants to be the facilitator of an effective litter approach on the ground, in line with the extension of Extended Producer Responsibility of packaging companies and in close cooperation with local councils and intermunicipal organisations.
- d. Fost Plus wants to invest in innovation, including a smart digital deposit return system that makes it as easy as possible for citizens to collect more drinks containers and reduce their share of litter.
- e. Fost Plus wants to achieve sustainable behavioural change when it comes to how citizens deal with waste and packaging.

We have got interesting times ahead of us. Waste management is moving decisively towards materials and resources management, with a view to a clean living environment and a sustainable society for all. Fost Plus is ready to take on the new challenges.

asbl Fost Plus vzw

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