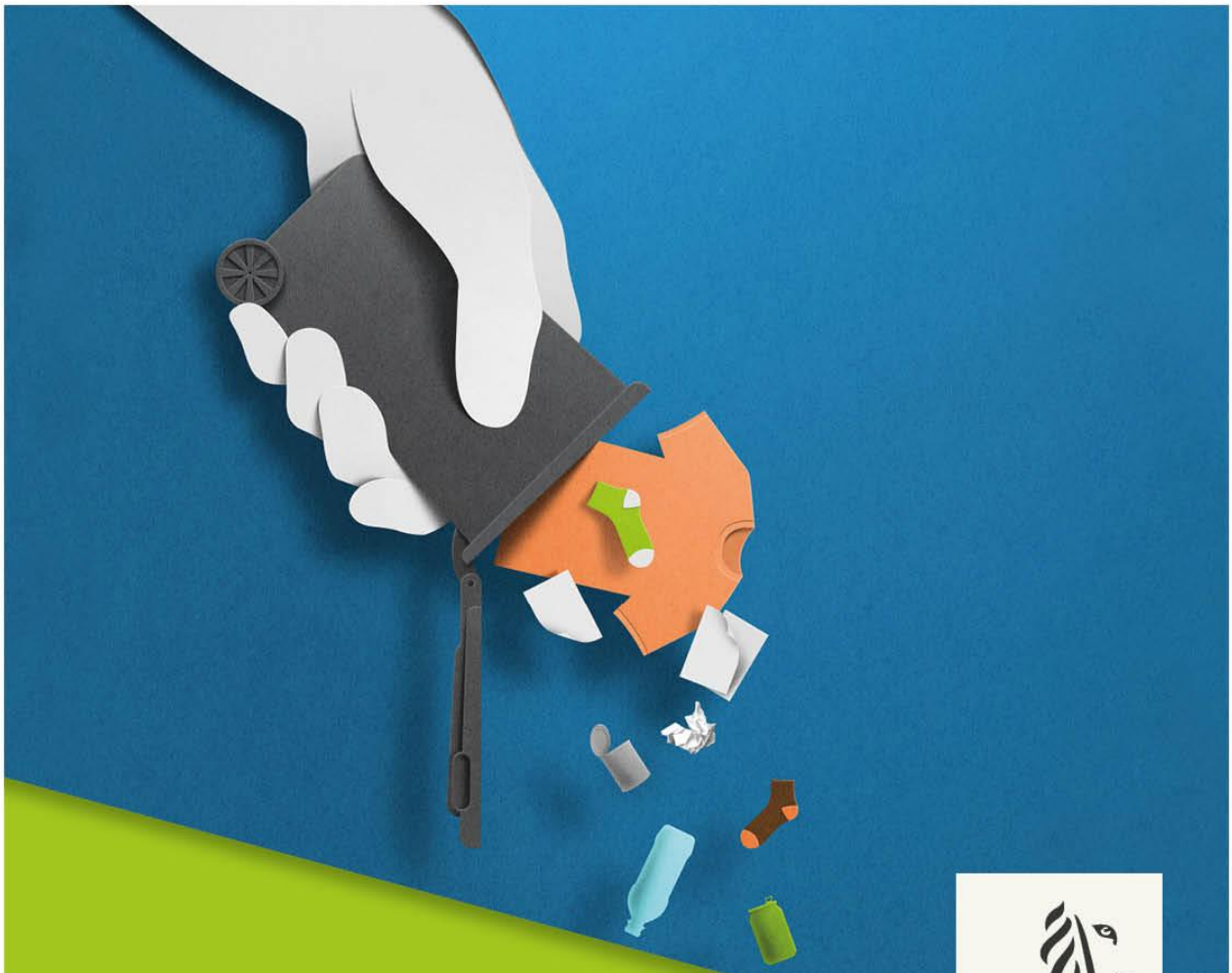

Flanders
State of the Art

PLASTICS IMPLEMENTATION PLAN

2020-2025

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PLASTICS IMPLEMENTATION PLAN 2020-2025

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Abstract:
Both nationally and internationally, there has been increased attention to various (nuisance) aspects of plastics and plastic waste, and solutions are being looked for. In general terms, Europe stresses the importance of a chain approach in its Circular Economy Package and the European Commission published its Plastics Strategy in 2018.
Flanders used this strategy to draw up the present 'Plastics Implementation Plan'. The key principles of this approach are less and efficient use of plastics, the creation of a sustainable plastic recycling market, the promotion of plastic recyclate as a fully-fledged raw material, a focus on knowledge gathering and data collection, and the exemplary role of public administrations in a circular procurement policy.

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CONTENTS

Plastics are under attack.

The amount of plastic waste just seems to be growing. We try to sort waste as much as we can, but we still dispose of 14kg of residual waste per year on average. In addition, much plastic waste is still released into the environment worldwide, polluting both land and sea. The ever-growing 'plastic soup' is sparking strong indignation. Public opinion on plastics has taken a beating,

but at the same time, plastics are indispensable in our society. They are our modern raw materials for many high-tech products and in many ways help us reduce our ecological footprint. After all, we use plastics to build wind turbines to generate renewable energy, or make our cars safer and lighter so they use less fuel and emit less CO_2. Plastics are a key material for our (global) economy, but our current system of consumption and production has serious drawbacks, causing harm to our environment (and our health).

The challenges we are faced with therefore require a fundamental change. We need to handle plastics differently today to secure our raw materials, but also our own future.

Although a myriad of initiatives are already pursuing a systems change, there is still a long way to go. After all, such a transition does not take place overnight.

Collaboration between public authorities, knowledge institutes, companies, federations, consumer organisations and environmental organisations is crucial to take steps forward. Product, process and technology innovation will also play a key role in this and so will the citizens and consumers themselves. A strong policy vision, endorsed by all actors, is indispensable. The present plan outlines our policy vision and the actions to be implemented over the next five years in order to take the first steps towards a more circular plastics economy.

1 BACKGROUND

1.1 PURPOSE OF THE PLAN

In 2014, a SWOT analysis was prepared by OVAM, EWI and the then DAR department within the framework of the Flemish Materials Programme and the New Industrial Policy, both of which are initiatives under Flanders in Action (ViA). OVAM and Circular Flanders gathered various stakeholders again in 2018 to come up with a bottleneck analysis for the current plastics chain. The results were compiled into a discussion paper[1], which helped build the foundations for the present Plastics Implementation Plan 2020-2025.

With a plastics plan, Flanders mainly aims to provide the much-needed framework and overview of actions that contribute to a sustainable management of the plastics cycle. An implementation plan allows progress to be monitored over the coming years, actions to be adjusted and new actions to be initiated where necessary.

The present action plan is, however, a dynamic document. It presents a vision, basic principles and a set of action programmes that were given concrete shape in broad consultation with the various stakeholders, but which always leaves room to evolve in response to new developments and insights. The action plan therefore allows for continuous alignment with existing and future policy initiatives and planning processes, and for pragmatic trade-offs.

1.2 READING GUIDE

Chapter 1 delineates the scope of the plastics plan. Furthermore, it explains how the plan came about and contains the legal provisions.

Chapter 2 describes the current policy context in Europe and Flanders.

The plastics recycling sector is a young sector compared to that of other material streams such as glass, metal, and paper and cardboard. Chapter 3 therefore gives an insight into the plastics landscape in Flanders.

Chapter 4 frames the plastics plan within the broader transition framework towards a circular economy, and describes the vision on plastics as well as the main strands underpinning our plastics policy.

Chapter 5 contains the action programme, which includes the following main drivers:
I. Less and efficient use of plastics
II. Creating a sustainable recycling market for plastics
III. Plastic recyclate as a fully-fledged raw material
IV. Commitment to knowledge gathering and data collection
V. The exemplary role of public administrations in a circular procurement policy.

This fifth chapter also contains references to specific activities in other existing policy plans, memorandums or agreements to which ongoing or future actions are linked.

[1] OVAM (2018). Discussion paper. Knelpuntenanalyse van de kunststofketen (Bottleneck analysis of the plastics chain) 29p.

The approach for budgeting the various actions in this plan and monitoring their progress is explained in Chapter 6.

1.3 SCOPE

This plan applies to all plastics, plastic items and plastic waste, both pre-consumer (e.g. production scrap and cutting residues) and post-consumer, of household as well as industrial origin.

The plan focuses more specifically on plastics, plastic items and plastic waste consisting of thermoplastics and thermosets:

> Thermoplastics, the largest group of polymers, are meltable polymers. They are solid materials that deform plastically when heated and usually also have a melting point. They become solid again when cooled. These polymers usually consist of unbranched or slightly branched chains of one or more types of monomers. The molecular chains can slide past each other if the van der Waals force between the molecules is overcome.
>
> Thermosets are thermally (or UV) cured polymers and remain solid when heated. This is because of the cross-links between the individual chains. When a thermoset is heated, the material does not melt but decomposes without becoming liquid. The group of thermosets includes, inter alia, unsaturated polyester resins, epoxy resins, phenol-formaldehyde resins, melamine-formaldehyde resins and thermosetting polyurethanes.

Polymers are also used to produce fibres, textiles, non-wovens, rubbers (elastomers), adhesives and surface coatings. These application areas of polymers fall outside the scope of the plan. Although these applications may share elements with the sustainable materials management of the plastics cycle, there are major differences in terms of legislation, prevention, reuse, collection, recycling and the stakeholders to be involved. It was therefore decided not to include these materials in the scope of the plastics plan.

The action programme contains actions aimed at closing the technical plastics cycle. Some of these actions will also have an impact on cross-material and cross-policy themes such as, for example, the (marine) litter problem, awareness programmes, the energy and climate targets and the transition to a circular economy. The purpose of this plastics plan is, however, not to work out a comprehensive approach and vision for these topics.

The plan mainly contains actions that we can work on at regional and/or national level. In addition, we are trying to initiate actions at European and international level.

1.4 LEGAL ANCHORING

The plan and the accompanying drafting and approval procedures have their legal basis in Article 18 of the 23 December 2011 Decree on the sustainable management of material cycles and waste, known as the Materials Decree for short.

An implementation plan is a plan of the Government of Flanders. It applies to all administrative authorities of the Flemish Region, the provinces, municipalities and any public and private law institutions entrusted with public executive responsibilities in environmental policy. The implementation plan constitutes the framework within which all parties involved carry out the tasks assigned to them by the Materials Decree.

1.5 VALIDITY PERIOD

The present plastics plan is valid until the end of 2025 and will remain valid until it is replaced with another plan.

2 POLICY CONTEXT

2.1 EUROPEAN POLICY CONTEXT

2.1.1 EU Circular Economy Package: the importance of a chain approach

In late 2015, the European Commission, headed by President Juncker, proposed a Circular Economy package that puts waste legislation and related environmental legislation in a broader context.
It adopts a life cycle approach and includes a focus upfront in the chain, through policies on ecodesign and sustainable production and consumption.

With the Circular Economy Action Plan, the Commission considers the closing of material cycles to be the backbone of the circular economy and also emphasises the contribution of the bioeconomy to a circular economy.

Some relevant directives were reviewed within the framework of this Circular Economy Package:

- Waste Framework Directive (2008/98/EC): this directive does not set out separate recycling targets for plastic waste, but for waste in general. The directive states, inter alia, that, "by 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households, shall be increased to a minimum of overall 50 % by weight". It is also expected that Member States shall draw up a plan with prevention measures in relation to this.

- Directive 94/62/EC on packaging and packaging waste, as amended by Directive 2004/12/EC, which instructs Member States, among other things, to include in their waste management plans a specific chapter on the management of packaging and packaging waste.
  The directive also sets higher reycling targets for plastic packaging: 50% in 2025 and 55% in 2030;

- Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) and on the collection and treatment of WEEE;

- Directive 2000/53/EC on end-of-life vehicles, which stresses, among other things, the need for continuous improvement of the recycling of all plastics from end-of-life vehicles, as well as the development of markets for recycled materials.

2.1.2 European Plastics Strategy

In formulating the major principles for a circular economy, plastics were identified as a key priority, after which the Commission committed itself to "*prepare a strategy addressing the challenges posed by plastics throughout the value chain and taking into account their entire life-cycle*".

With the publication of its Plastics Strategy in 2018, the Commission confirmed its commitment to put special focus on "a new plastics economy, where the design and production of plastics and plastic products fully respect reuse, repair and recycling needs and more sustainable materials are developed and promoted".
The strategy presents key commitments for action at EU level by 2030.

2.1.2.1 Reducing plastic waste and plastic litter

European legislation has already led to a significant reduction in the use of disposable plastic carrier bags in several Member States (Directive (EU) 2015/720)[2]. New plans focus on other single-use plastic products (so-called Single-Use Plastics Directive[3]) and fishing gear, which together account for more than 75% of marine litter.

Work will also be done on a clear regulatory framework for plastics with biodegradable properties.

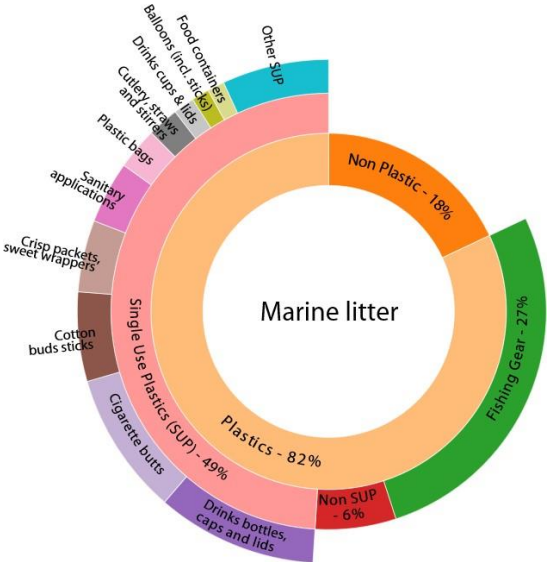

Figure 1: Composition of marine litter found on European beaches (in 2016, share by item), based on European Commission impact assessment SWD(2018)254. Source: EP Research Service, 2019.

The new European rules will provide for the introduction of:

A **ban on plastics in certain products:**

When alternatives are readily available and affordable, single-use plastic products are banned from the market. The ban will apply to ***cotton bud sticks, cutlery, plates, straws, stirrers and balloon sticks***, all of which may only be developed with more sustainable materials. Single-use ***beverage containers*** made of plastic will only be allowed on the market if the caps and lids are attached to the bottle.

Consumption reduction targets: Member States will have to reduce the use of plastic ***food containers*** and ***cups***. They can do this by setting national consumption reduction targets, making re-usable alternatives available at the point of sale or ensuring that single-use plastic products are not provided free of charge.

Obligations for producers: producers will cover the costs of waste management and clean-up as well as the costs of awareness-raising measures regarding ***food containers, packets and wrappers (e.g. for crisps and sweets), beverage containers and cups, tobacco products with filters (e.g. cigarette butts), wet wipes, balloons and lightweight plastic carrier bags***. Industry will also be encouraged to develop less polluting alternatives to these products.

Collection targets: Member States will be required to collect 90% of single-use plastic **beverage bottles** by 2029.

Marking requirements: certain products will have to bear a conspicuous, clearly legible and indelible marking informing consumers of how the product should be disposed of, the negative impact of the product on the environment, and whether plastics are present in the product. This will apply to ***sanitary towels (pads), wet wipes and balloons***.

2 EU COM 2015/720. Directive of the European Parliament and of the Council of 29 April 2015 amending Directive 94/62/EC as regards reducing the consumption of lightweight plastic carrier bags (Text with EEA relevance)
3 EU COM/2018/340 final - 2018/0172. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the reduction of the impact of certain plastic products on the environment

Awareness raising measures: Member States will be required to make consumers aware of the negative impact of littering single-use plastic products and fishing gear, on the one hand, and the availability of reuse systems and waste management options for all these products, on the other.

Furthermore, the Commission is working on **restrictions on intentionally added microplastics** to products under the REACH regulation. It concerns products that extend beyond the range of cosmetic products, personal care products and detergents for which several Member States have already introduced measures. In Belgium, for example, the industry committed to no longer add microplastics to such products by 2019. The Commission is now also targeting other products and sectors, such as paints, coatings, industrial cleaning products, etc.

For **fishing gear**, which accounts for 27% of all litter on beaches, the Commission aims to complete the existing policy framework with extended producer responsibility schemes for fishing gear containing plastic. Producers will be obliged to cover the costs of the relevant waste collection at port reception facilities and the costs of its subsequent transport and treatment. They shall also cover the costs of the awareness raising measures.

2.1.2.2 Improving the economics and quality of plastics recycling

The Commission also wants to increase cooperation across the value chain to:
- improve design and support innovation to make plastics and plastic products easier to recycle;
- expand and improve the separate collection of plastic waste, to ensure quality inputs to the recycling industry;
- expand and modernise the EU's sorting and recycling capacity;
- create viable markets for recycled and renewable plastics.

2.1.2.3 Driving innovation and investment towards circular solutions

Achieving the objectives laid out in the European Plastics Strategy will require major investments in both infrastructure and innovation[4]. Therefore, the Commission wants to create an enabling framework for investment and innovation. Innovative solutions for advanced sorting, chemical recycling and improved polymer design could allow better sorting and recycling. New materials and approaches (such as circular business models, reverse logistics, etc.) help minimise plastic waste at source, while achieving further economic, social and/or environmental benefits.

So far, Horizon 2020 has provided over EUR 250 million to finance R&D in areas of direct relevance to the strategy. The EU also supports interregional partnerships for plastics-related innovation projects. In the run-up to 2020, an additional EUR 100 million will be devoted to financing priority measures, including developing smarter and more recyclable plastics materials, making recycling processes more efficient, and tracing and removing hazardous substances and contaminants from recycled plastics. The Commission will develop a Strategic Research and Innovation Agenda for 'plastic free oceans' in the context of the Horizon Missions by June 2020. Finally, on the basis of the Green Deal (and the attached Circular Economy and Sustainable Chemicals Action Plans), a vision will be developed for research and innovation funding after 2020 in the field of plastics sustainability and recycling.

[4] It is estimated that plastics recycling targets alone will require an investment of between EUR 8.4 billion and EUR 16.6 billion.

National and regional authorities, local authorities and citizens need to be mobilised as well. Finally, international engagement will be necessary to drive change outside Europe's borders.

A European Strategy for Plastics in a Circular Economy: 'A Vision for Europe's New Plastics Economy'

"A smart, innovative and sustainable plastics industry, where design and production fully respects the needs of reuse, repair, and recycling, brings growth and jobs to Europe and helps cut EU's greenhouse gas emissions and dependence on imported fossil fuels.

- *Plastics and products containing plastics are designed to allow for greater durability, reuse and high-quality recycling. By 2030, all plastics packaging placed on the EU market is either reusable or can be recycled in a cost-effective manner.*
- *Changes in production and design enable higher plastics recycling rates for all key applications. By 2030, more than half of plastics waste generated in Europe is recycled. Separate collection of plastics waste reaches very high levels. Recycling of plastics packaging waste achieves levels comparable with those of other packaging materials.*
- *Capacity in the EU to recycle plastics is being significantly increased and modernised. By 2030, sorting and recycling capacity has increased fourfold since 2015, leading to the creation of 200 000 new jobs, spread all across Europe[5].*
- *Thanks to improved separate collection and investment in innovation, skills and capacity upscaling, export of poorly sorted plastics waste has been phased out. Recycled plastics have become an increasingly valuable feedstock for industries, both at home and abroad. The plastics value chain is far more integrated, and the chemical industry works closely with plastics recyclers to help them find wider and higher value applications for their output. Substances hampering recycling processes have been replaced or phased out.*
- *The market for recycled and innovative plastics is successfully established, with clear growth perspectives as more products incorporate some recycled content. Demand for recycled plastics in Europe has grown four-fold, providing a stable flow of revenues for the recycling sector and job security for its growing workforce.*
- *More plastics recycling will reduce Europe's dependence on imported fossil fuels and reduce CO_2 in line with the Paris Agreement.*
- *Innovative materials and alternative feedstocks for plastic production are developed and used where evidence clearly shows that they are more sustainable compared to the non-renewable alternatives. This supports efforts on decarbonisation and creating additional opportunities for growth.*
- *Europe confirms its leadership in sorting and recycling equipment and technologies. Exports rise in lockstep with global demand for more sustainable ways of processing end-of-life plastics.*

In Europe, citizens, government and industry support more sustainable and safer consumption and production patterns for plastics. This provides a fertile ground for social innovation and entrepreneurship, creating a wealth of opportunities for all Europeans.

- *Plastic waste generation is decoupled from growth. Citizens are aware of the need to avoid waste, and make choices accordingly. Consumers, as key players, are incentivised, made aware of key benefits and thus enabled to contribute actively to the transition. Better design, new business models and innovative products emerge that offer more sustainable consumption patterns.*
- *Many entrepreneurs see the need for more resolute action on plastics waste prevention as a business opportunity. Increasingly, new companies emerge that provide circular solutions, such as reverse logistics for packaging or alternatives to disposable plastics, and they benefit from the development of digitisation.*
- *The leakage of plastics into the environment decreases drastically. Effective waste collection systems, combined with a drop in waste generation and with increased consumer awareness, avoid litter and ensure that waste is handled appropriately. Marine litter from sea-based sources such as ships, fishing and aquaculture are significantly reduced. Cleaner beaches and seas foster activities such as tourism and fisheries, and preserve fragile ecosystems. All major European cities are much cleaner.*
- *Innovative solutions are developed to prevent microplastics from reaching the seas. Their origin, routes of travel, and effects on human health are better understood, and industry and public authorities are working together to prevent them from ending up in our oceans and our air, drinking water or on our plates.*
- *The EU is taking a leading role in a global dynamic, with countries engaging and cooperating to halt the flow of plastics into the oceans and taking remedial action against plastics waste already accumulated. Best practices are disseminated widely, scientific knowledge improves, citizens mobilise, and innovators and scientists develop solutions that can be applied worldwide."*

5 This data corresponds to building about 500 new sorting and recycling plants (source: Plastics Recyclers Europe).

2.1.3 European strategy for a non-toxic environment

Within the framework of the 7th Environment Action Programme, the Commission has committed to developing a strategy for a non-toxic environment.

An extensive study[6] was published in preparation for this strategy. This study identifies gaps and deficits in policies and how they can be addressed. The Commission also carried out a number of procedures, such as the REFIT evaluation of REACH and a comprehensive fitness check of all EU chemicals legislation except REACH, both of which help to gain a better understanding of some specific areas that require adjustments and improvements. The plastics strategy and the analysis of interfaces between chemicals, articles and waste legislation, which are both part of the Circular Economy Action Plan, also contribute to collecting data and addressing the issues identified.

On 16 January 2018, the European Commission published a Communication on options to address the interface between chemical, product and waste legislation. Harmonisation is required when material streams become circular. The communication identified four issues and announced actions to address them. The four issues identified and the planned actions can be summarised as follows:

- Issue 1: Information on presence of substances of concern is not readily available to those who handle waste and prepare it for recovery.
  Planned action: The Commission plans to launch a feasibility study on the use of different information systems, innovative tracing technologies and strategies. The study was published on 24 January 2020 (Information flows on substances of concern in products from supply chains to waste operators).

- Issue 2: Waste may contain substances that are no longer allowed in new products.
  Planned action: The Commission plans to develop a specific decision-making methodology to support decisions on the recyclability of waste containing substances of concern by mid-2019. The European Commission has not been able to make the desired progress. It can be expected to further incorporate this issue into its Chemicals Strategy for Sustainability.

- Issue 3: EU's rules on end-of-waste are not fully harmonised, making it uncertain how waste becomes a new material and product.

  Planned action: The Commission will facilitate closer cooperation between existing chemical and waste management expert networks and prepare an on-line EU repository for all adopted national and EU end-of-waste and by-product criteria. These targets will be included in the Chemicals Strategy for Sustainability, which the Commission recently announced. The aim is to have it published by summer 2020.

- Issue 4: Rules to decide which wastes and chemicals are hazardous are not well aligned and this affects the uptake of secondary raw materials.
  Planned action: The Commission is about to publish a guidance document on waste classification to assist waste operators and competent authorities to have a common approach to waste characterisation. This will also be included in the Chemicals Strategy for Sustainability.

6 European Commission (2017). Study for the strategy for a non-toxic environment of the 7th Environment Action Programme

2.2 FLEMISH POLICY CONTEXT

2.2.1 Vision 2050

'Vision 2050' is the long-term strategy of the Government of Flanders for a strong, social, open, resilient and internationally-connected Flanders that creates prosperity and well-being in a smart, innovative and sustainable way, and in which every individual counts.

In order to achieve this vision for the future, the Government of Flanders is working on seven transition priorities that should help to realise the necessary changes more quickly.
- *Circular economy transition*: to make better use of raw materials and materials.
- *Mobility transition*: to make transport smoother, safer and more environmentally friendly.
- *Industry 4.0*: for new technologies and concepts in industry, mainly through far-reaching digitalisation.
- *Energy transition*: for a low-carbon, sustainable, reliable and affordable energy system.
- *Smart living and housing*: for a sustainable neighbourhood where everyone can and wants to live.
- *Living together in 2050*: to offer young people opportunities and older people quality of life.
- *Lifelong learning transition*: to develop talents and competencies through education and training.

Flanders thus chooses to fully commit to closing material cycles through efficient and smart material use, new business models such as the sharing economy and product-service combinations, digitalisation and process optimisation, life-cycle extension, etc. Backed by an innovative, environmentally friendly industry that helps find solutions for a circular economy and better society.

To successfully continue this transition to a circular economy in Flanders, the three pillars of the former Flemish Materials Programme (Plan C, SuMMa and Agenda 2020) have been jointly transferred to the Public Waste Agency of Flanders (OVAM) under the heading 'Circular Flanders' since 1 January 2017.

For the sake of completeness, the relevant paragraphs from Vision 2050 are reproduced in full below:

"*In the circular economy, we will use raw materials and materials, energy, water, space and food more efficiently by closing cycles smartly. Natural resources are re-used as much as possible. We distinguish between biological materials that were designed to safely flow back into the biosphere and technical (non-biological) materials that were designed and placed on the market in such a way that they can be reused at a high level of quality. We are the international frontrunner when it comes to collecting, sorting and recycling waste and closing material cycles. Consequently, Flanders is ahead of the rest of the pack in the transition to a circular economy, allowing it to help define the playing field. The current, strongly developed and high-tech industrial network and strong recycling cluster provide plenty of opportunities for this.*
By focusing on local production, new business models and replacing primary raw materials with materials that are available in Flanders where possible, the circular economy can make Flanders more flexible and therefore better resistant to disruptions in the global economy. Here too, we see strong links with the transition 'Industry 4.0', allowing us to make maximum use of technological innovations and concepts. Close cooperation between these transitions will have far-reaching and long-term impact.
We can only achieve a sustainable, circular economy if we also use renewable resources, such as biomass. That is why we will focus on developing Flanders' economy into a

competitive bioeconomy that sustainably produces biomass and uses and reuses biomass streams and residual streams for food, animal feed, materials, products and energy.
The circular economy provides new opportunities for innovation, including in product design, manufacturing, services and business models, as well as in agriculture and food and the water-intensive sectors. It offers many opportunities for entrepreneurs through more value chain cooperation, less raw materials use and waste, access to new raw materials from waste and the international valorisation of Flemish expertise. The circular economy, however, will also strengthen the social and spatial fabric. Local customised production, sharing initiatives and the spatial interconnectedness of working, living and recreation are just a few examples of how Flanders can also become stronger socially, within Europe, by focusing on the circular economy. That is why strong links can be established with the transition priority 'Industry 4.0'.

A circular economy also includes the circular use of raw materials for generating energy and thus a transition to an increased use of renewable energy. The circular economy is therefore also closely connected to the energy transition. That is why we will work together closely with the transition priorities for energy and Industry 4.0 when developing this transition priority."

2.2.2 Flemish Coalition Agreement

In line with the Flemish Coalition Agreement 2019-2024, we want to work towards an innovative plastics circular economy through this plastics plan. To this end, we continue to focus on waste prevention, ecodesign (including through public procurement), reuse, sorting, recycling and recovery of plastics. We also invest in the development of an excellent knowledge base on plastics, and closely involve public authorities and businesses in the development of our policy in order to give it more impact.

Furthermore, the plan states that we are committed to biomass as a sustainable raw material and invest in innovation to use CO_2 as a raw material. Plastics must be biodegradable whenever possible and desirable based on their function. The biological raw materials used must always be sustainable. The policy vision 'The Bioeconomy in Flanders' offers important guidance in this respect.

Europe also calls for a ban on the use of microplastics in cosmetics and personal care and maintenance products and for a broader strategy on disposable products, regardless of the material they are made of.
We are taking the lead in Europe towards a society where plastics are recyclable and recycled to the maximum extent. This is how we will create a circular economy for plastics.

We are working together with industry to find solutions to major societal challenges. We are turning the climate challenge into an economic opportunity. The commitment undertaken with regard to the Moonshot 'Flanders Carbon Neutral' will be honoured.

2.2.3 Plastics in existing OVAM plans to better close material cycles

Flanders is taking measures to improve plastic waste prevention and collection through various waste and material plans.

2.2.3.1 Implementation Plan for Household Waste and Similar Industrial Waste (since 2016)

The Implementation Plan for Household Waste and Similar Industrial Waste forms the basis for the translation of Flanders' materials policy to the local level.

This implementation plan sets targets and actions to increase product reuse, keep materials in the cycle, reduce the amount of residual waste incinerated or landfilled, match waste treatment capacity to available supply, and tackle litter. Many of these actions have an impact on the plastics chain, and a specific chapter is also devoted to plastics.

2.2.3.2 Action Plan on the Sustainable Management of Biomass Streams and Residual Biomass Streams (since 2015)

This action plan offers guidance for the sustainable and efficient use of biomass streams and residual biomass streams (wood, VFG waste, green waste, organic industrial waste, etc.). The prevention of food losses and residual biomass streams, the selective collection and the sustainable management of biomass streams and residual biomass streams are the main focus in this plan. The link with the development of biodegradable and compostable plastics is important. The Action Plan on the Sustainable Management of Biomass Streams and Residual Biomass Streams considers it a priority to keep organic streams and organic residual streams uncontaminated. On the other hand, the plan contains indications of opportunities for such degradable materials, e.g. to replace non-compostable plastics in agriculture.

2.2.3.3 Packaging and litter policy 2.0 (since 2018)

In June 2018, the Government of Flanders approved the basic principles of a new packaging policy (Packaging Policy 2.0). This is a comprehensive packaging policy that starts from the materials hierarchy and the 'polluter pays' principle, as laid down in the Flemish Materials Decree.

The Flemish Coalition Agreement 2019-2024 ratified all the agreements made in the Packaging Plan 2.0, including the evaluation at the end of 2023 and the related consequences, namely that if the targets are still not met to a substantial degree, the sector will be asked to organise a deposit return scheme or introduce a generalised reward system. The other sectors involved will also have to contribute actively and financially to the fight against litter. Active consultation between food and packaging industries, local authorities and the hospitality industry is encouraged to develop smarter and low-waste business models for out-of-home consumption. Public authorities should lead by example at their events.

Packaging plays an important role in our society for protecting various goods during transport, storage and preservation. It helps preserve goods longer and better and avoids damage and food loss. On the other hand, we find that redundant packaging, the nature and composition of some packaging, and poor waste practices have significant environmental impact.
Smart packaging and litter policies are therefore aimed at maximising the functional use of packaging with minimal environmental impact.

Because almost one fifth of plastics in Belgium are used in packaging, the packaging policy of the Government of Flanders puts a clear focus on plastic packaging.

2.2.3.4 Prevention programme 'Material-Conscious Construction' (since 2015)

Construction activities have a major impact on the environment. According to UNEP, they are responsible for nearly 40% of energy consumption and 50% of raw material consumption worldwide[7]. The big challenge we are faced with of rationalising our raw material consumption therefore also applies to the construction sector.

[7] From the United Nations Environment Programme (2004)

That is why OVAM created the policy programme 'Material-Conscious Construction in Cycles'.

With spending on plastics for the Flemish construction sector totalling EUR 3,463.6 million (i.e. over 20% of total plastic consumption in Flanders)[8] and a high use of plastics in construction products produced in Belgium (almost 40%), plastics represent an important material stream in construction, which we have access to through our own Flemish/Belgian policy.

2.2.3.5 Flemish & Federal Marine Litter Action Plan (since 2017)

On 5 October 2016, the Flemish Parliament unanimously adopted Resolution 866 of 18 July 2016, asking the Government of Flanders to "*develop a comprehensive action plan containing Flemish short-, medium- and long-term targets for reducing plastic pollution, with key focus on knowledge acquisition, awareness-raising and actions on the ground*."

Following this resolution, a comprehensive action plan was drawn up that provides an overview of potential measures, aimed at all the different actors involved, to effectively tackle the influx of litter into the marine environment. Some of the measures will be rolled out on an operational level under this plastics plan.

In this context, the different - and sometimes overlapping - competencies at the regional and federal levels and the initiatives currently underway in various international forums (EU and UN) must also be taken into account. OVAM has therefore been working closely together with colleagues from the Department for the Marine Environment of the FPS Health, Food Chain Safety and Environment for some time now. They have also developed a federal marine litter action plan on behalf of the State Secretary for the North Sea.
Despite the fact that a number of competences linked to the avoidance of marine litter belong exclusively to the federal (e.g. marine and maritime policies, microplastics product standardisation, monitoring at sea and on beaches) or regional (waste policy, litter prevention, port reception facilities for ship-generated waste, drift debris in watercourses, water purification, education) level, it is clear that a number of competences overlap or at least closely complement each other.
Consultation is therefore taking place between the national and Flemish working groups, so as to ensure that the progress of the measures at both policy levels is aligned to the maximum extent possible.

2.2.3.6 Preconditions and connecting factors at the European/international level

The Government of Flanders has committed in its Coalition Agreement (2019-2024) to participate even more decisively in setting the European agenda. For this reason, we do not want to limit ourselves to the correct implementation of European regulation. In order to realise the targets and actions set out in this plastics implementation plan, Flanders will also have to impact (pro)actively on European and international plastics policy developments, with a particular focus on product policy, building sufficient recycling capacity and curbing microplastics. We see connecting factors for this, both in European and international policy.

The European Commission states in its Communication on the **European Green Deal**[9] that it "will follow up on the 2018 **plastics strategy** focusing, among other things, on *measures to tackle intentionally added micro plastics and unintentional releases of plastics, for example from textiles and tyre abrasion*." The Commission "[...], *will develop a regulatory framework*

8 Data from OVAM study (2017)). 'Identifiying product(group)s with plastic recyclates (recycled content) and product(group)s with potential for using plastic recyclates'. p. 78
9 The European Green Deal

*for **biodegradable and bio-based plastics**, and will implement measures on **single use plastics”**.*

The amendments to the **Basel Convention** will have to be implemented on the international level. From 1 January 2021, exporters will be required to obtain prior written consent from the State of import for more types of plastic waste. As a result, it will be more difficult to export plastic waste. This should encourage countries to increase their commitment to **recycling plastic waste**. It remains to be seen whether the trade in plastic waste between OECD countries will be subjected to the same rules. The European Commission states in the Green Deal that “*The Commission is of the view that the EU **should stop exporting its waste outside of the EU** and will therefore revisit the rules on waste shipments and illegal exports*.” This could boost the circular economy in the European market.

Finally, the transition to the circular economy must also be supported through international **cooperation and partnership**. We therefore reach out to other countries, both within and outside Europe, to exchange knowledge and set up **concrete partnerships** in which partners can mutually reinforce each other. In this way, we continue to keep abreast of what goes on elsewhere in the world and gain insight into the policy choices of other countries.

3 THE PLASTICS LANDSCAPE IN FLANDERS

Definition of plastics

Plastic is a material composed of one or more polymers, which in turn consist of a series of chemical compounds of monomers. Polymers can be made from fossil raw materials or from biological raw materials.

Processing aids and additives are added to the polymers to manufacture plastic products. Processing aids are added to make the processing process run smoothly, e.g. foaming and blowing agents, antioxidants, heat stabilisers, etc. Additives are added to obtain the desired product properties, e.g. plasticisers, UV stabilisers, fire retardants, dyes, fillers and stiffeners, fungicides, etc. A growing number of chemicals added to plastics are found to pose a risk to human health or the environment and their use is restricted or banned.

Applications

Notwithstanding the huge range of different polymers, almost 75%[10] of the European plastics market is dominated by only five thermoplastic polymers, namely polyethene (PE), polypropene (PP), polyethylene terephthalate (PET), polyvinyl chloride (PVC) and polystyrene (PS). These 'commodity plastics' have a low cost (between EUR 0.8 and EUR 2 per kg). They are typically used in large application areas such as packaging, construction and the automotive industry.

Furthermore, there is growing demand for complex composite or functional polymers (e.g. ABS, SAN, PMMA, PA, etc.), which are applied in specific, mostly high-tech, areas (EEE, aircraft parts, car parts, skylights, gears, etc.) where high technical and safety requirements apply. The cost of these polymers can range between EUR 1.7 and EUR 3.5 per kg. These are typically plastics with slightly more complex issues and opportunities, which is why they require a specific approach.

The figure below breaks down European demand for plastics (around 51 million tonnes in 2017) by polymer type and market segment. The largest consumer groups are packaging (around 40%), building and construction (around 20%), automotive (around 10%), and electrical and electronic equipment (EEE) (around 6%).

[10] In tonnage

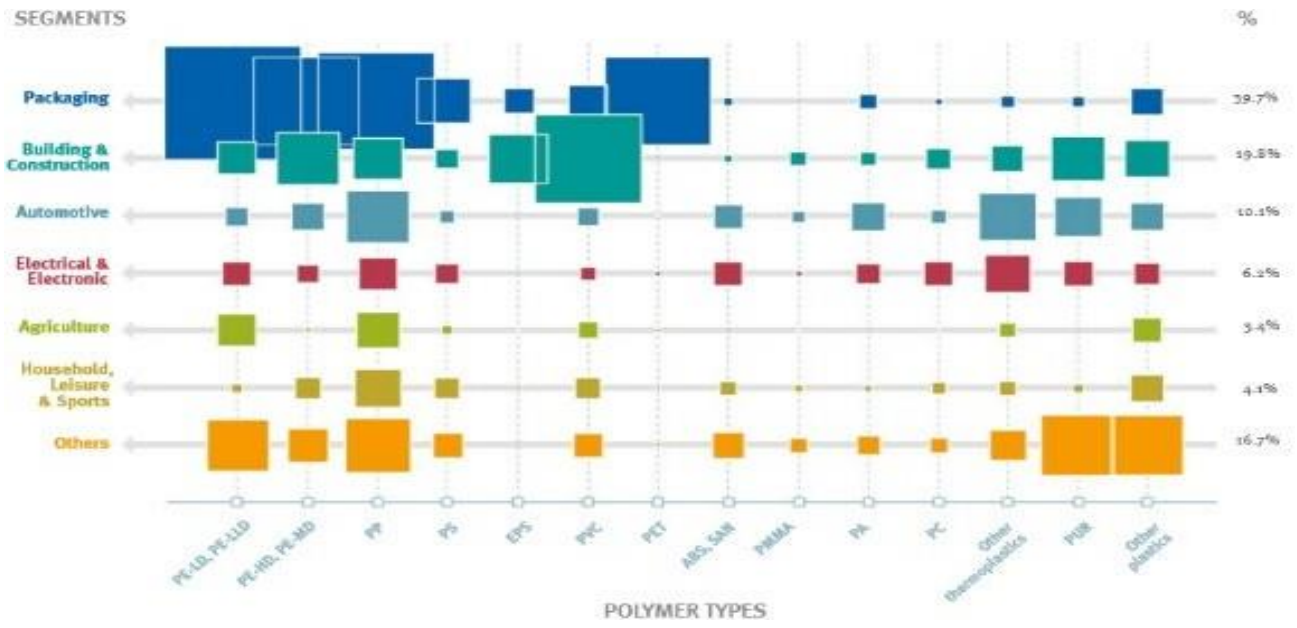

Figure 2: European demand for plastics by polymer type and market segment in 2017 (EU-28+NO/CH). Source: The Plastics Facts 2018 - PlasticsEurope Market Research Group & Convertio Market and Strategy GmbH

The plastics landscape in Flanders

When we talk about the plastics landscape in Flanders, we refer to the whole of polymer producers, plastics converters, plastics collectors and plastics recyclers.

The materials flow chart below provides a schematic overview of the origin, destination and volume of the plastic waste that is imported, exported, generated or treated in Flanders. The overview has been made on the basis of the data available and of assumptions. Actions included under Chapter 5.4 that focus on data collection will further endorse the overview.

Figure 3: Plastic waste: the Flemish value chain. Source: Flanders Recycling Hub: 2017 market overview reporting, VIL empowering logistics

3.1 POLYMER PRODUCERS

Polymer producers (chemical industry) are companies that produce the polymers and compounds used as raw materials by the plastics converters.

Belgium is home to the second largest petrochemical cluster in the world and the largest within the EU. The plastics sector, which is a leader in the production of HDPE, PVC, PP and PU with a well-represented plastics converting industry, is one of the most important industrial sectors in Flanders/Belgium. With a total production volume in Belgium of 7.5 million tonnes of polymers ('pellets' or plastic granules) and 2.5 million tonnes of plastic items (i.e. plastic products produced by the plastics converting industry for consumer and industrial applications), the (petro)chemical and plastics sector is a highly export-oriented sector, making a substantial contribution to the European trade balance.

Flanders/Belgium also occupies a strong position in the field of research into a bio-based plastics sector. The bio-based share within total plastics production is currently still very limited.

11 This is a market overview for 2017. Meanwhile, China (as well as other countries following China's lead) has closed its borders to plastic waste imports. In 2020, plastic waste is still being exported from Flanders (as an export or transit country), but the countries of destination have changed regularly in recent years.

3.2 PLASTICS CONVERTERS

Plastics converters convert these raw materials into plastic items ranging from packaging to car bumpers, from toothbrushes to construction tubes.

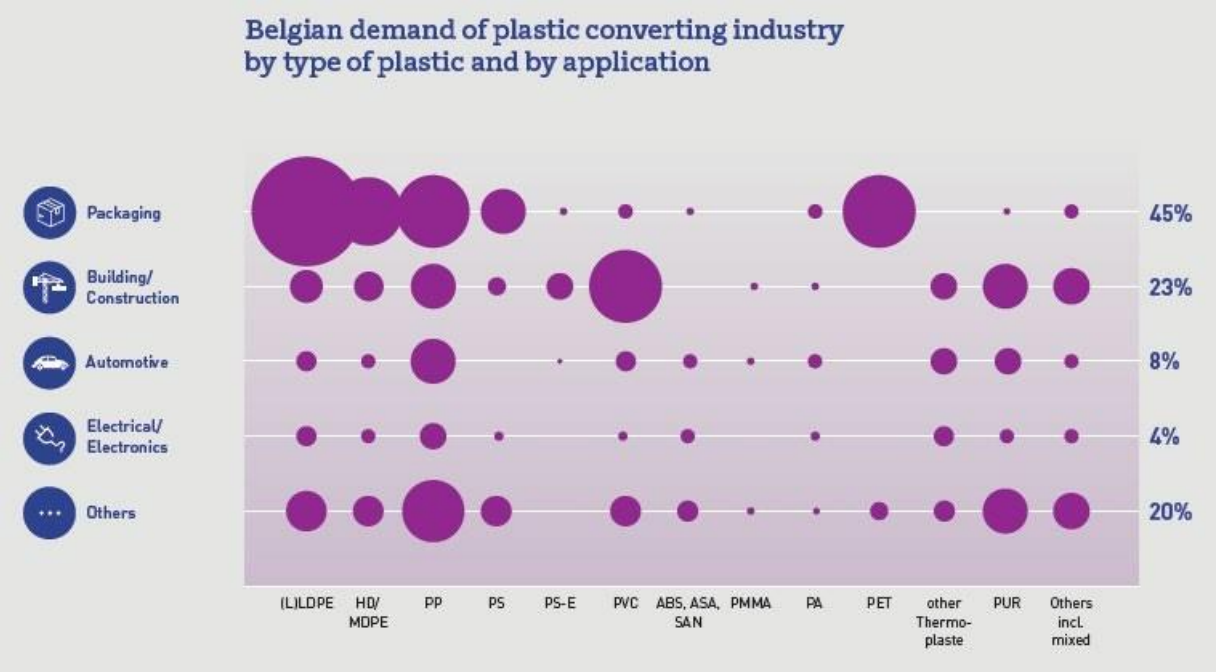

Figure 4: Belgian plastics demand by polymer type and market segment. Source: The Belgian plastics industry and the circular economy - Agoria, essenscia

Belgium's demand for plastics is very similar to that at the European level. The largest demand comes from the sectors producing packaging and construction materials.

Only about ten plastics converters in Flanders are known to use plastic recyclates along with primary plastics. Although the number of companies that regularly use plastic recyclates during production will actually be higher, there is still great reluctance to communicate this information just like that. They fear that consumers will perceive new products with recycled content as inferior. It can be argued, however, that there is still a large number of producers that are not interested in using recyclates.

3.3 PLASTICS COLLECTORS AND SORTERS

Although we are among the frontrunners in Europe in terms of selective waste collection, there is still great potential for the selective collection of plastic waste. A sorting obligation for plastics was therefore inevitable in the Flemish Regulation on the Sustainable Management of Material Cycles and Waste (VLAREMA). Since 1 June 2018, companies are required to dispose of foils (secondary and tertiary foils), recyclable rigid plastics and expanded polystyrene separately. The separate disposal of recyclable rigid plastics has been mandatory for households since the end of 2017 already.

In terms of the selective collection of household plastic waste, there was clearly still room for improvement according to the household waste sorting analysis of 2013-2014. For instance, about 15 kg of plastics (both rigid plastics and foils, packaging, etc.) was still found in household waste per resident, of which 3 kg of pmd (plastics, metals and beverage cartons) per resident. In addition,

the bulky waste contained about 2 kg of (rigid) plastics per resident. Rigid plastics[12] that were collected selectively amounted to an average of 1.87 kg per resident in Flanders in 2014. Furthermore, 42,003 tonnes of foils were collected, mainly packaging foils, raw material bags, big bags, agricultural and horticultural foils and construction foils, as well as 1,487 tonnes of EPS from packaging and insulation materials.

The share of plastics in industrial residual waste, which still amounted to around 15% in 2013, must go down as well . Similar figures were recorded in 2017, when plastics made up 15% of residual waste in roll containers and around 12% of residual waste in skip containers.

The share of plastics in residual waste will decrease as a result of the roll-out of the P+ collection through the P+MD collection, for both households and industry (April 2021).

Plastics are preferably collected at source already by type of plastic. However, this is often not feasible, or it is difficult for waste producers to identify which type of plastic is involved. A mix of plastics is therefore usually collected that needs further sorting. Some 50 companies in Flanders are active in the gross or more refined sorting of plastics.

3.4 PLASTICS RECYCLERS

Plastics recyclers make plastic waste suitable again for application in new products. Plastics recycling does not stop at grinding and washing the plastic waste. A plastics recycler performs all the steps necessary to have the plastic recyclate meet the technical requirements of the customer and can guarantee that the recyclate meets the product legislation requirements. One-to-one consultation between the plastics recycler and the plastics converter is often crucial in this context.

Most of the plastics recyclers operating in Flanders focus on the uncontaminated plastic waste streams (e.g. pre-consumer plastic waste, selectively collected streams, mono streams, etc.) and use mechanical recycling technologies (cutting, milling, compacting, dedusting, washing, etc.) to process the plastic waste into plastic regrind or granulate. The latter is then applied in in-house production processes or sold to third parties[13].

A minority (5 to 10 companies) uses post-consumer plastic waste.

Currently (2020), one company in Flanders will start to chemically recycle plastics.

3.5 THE PLASTICS SECTOR IS BEING CHALLENGED

Plastics are indispensable to our society but the detrimental effects - of their still predominantly linear use - on humans, the environment and the economy are becoming increasingly apparent. The need and urgency to give plastics a more circular existence has gained strong social acceptance. The focus on the contribution of plastics to the litter problem, marine litter, microplastics in the environment, the export of plastic waste to developing countries, etc. only reinforces that feeling. Plastic packaging in particular

12 Rigid plastics are understood to mean, for example, pipes, window profiles, shutters, flower pots, buckets, crates, laundry baskets, garden furniture, toys, etc.

13 An unknown volume of primary industrial plastic waste and production scrap is probably exchanged directly between producers and converters or sister companies and/or not recorded in the industrial waste register.

meets with heavy criticism and is regarded as the inferior option compared to other materials such as metal, glass and cardboard that have long proven to be highly recyclable.
There is a growing awareness that the decision to use a plastic material during the design stage can no longer be justified solely from the viewpoint of the benefits of the plastic material during the use phase. Recyclability is becoming an increasingly important prerequisite for consumers.

Owing to the growing interest of large polymer producers in recyclates and the European circular economy policy, the plastics recycling world may change fairly quickly. Polymer producers have the knowledge and capabilities to upgrade the quality of recyclates through compounding or chemical recycling techniques.

Ideally, the result will be an **integrated plastics chain** in which the chemical and plastics converting industries work together with knowledge centres, public authorities, customers (i.e. brand owners who determine the design), distribution companies and plastics recyclers, which will allow them to evolve towards a closed plastics cycle. This chain approach is also pursued in the action programme of the plan involving all the actors from the plastics landscape in realising the actions.

4 STRATEGIC FRAMEWORK

4.1 TRANSITION FRAMEWORK

The present Plastics Plan deals only with a small cog in the wheel of a wider transition. The transition to a circular economy is not a mere technological challenge aimed at better closing material cycles. It represents a society-wide challenge that must have continued effect through profound changes in the different production and consumption systems. A 'circular plastics economy' does not stand on its own, but is a means of striving for an inclusive and environmentally sustainable society (cf. Vision 2050: "*We want to achieve this ambition with a new economy, for an inclusive society and within the ecosystem boundaries of our planet*.") This transcends the Flemish level and competences and therefore this plastics action plan as well, which is situated in a broader transition framework within which we are fundamentally rethinking the production and consumption of plastics (and of products in general).

There are indications at the European level that the EU will assume a more strategic and directing role. In December 2019, the 'European Semester Autumn Package: Creating an economy that works for people and the planet' was published. This shows that the traditional Annual Growth Survey was transformed into an **Annual Sustainable Growth Strategy**. The promotion of competitive sustainability to build an economy that works for the people and the planet is at the heart of this strategy. Whereas, until now, the Semester had mainly been a reporting and accountability tool, it is evolving into a strategic policy tool through which the Commission seeks to give more direction to the policies pursued by the Member States in enhanced dialogue with our policymakers. More connections are made between economic/budgetary policy priorities, sustainability goals, climate targets and environmental challenges. The Commission wants the Member States to develop a clear vision of reforms and investments needed to meet these targets.

This is part of the **European Green Deal**, which formulates a new growth strategy for the EU that aims for a climate neutral Europe by 2050 and places strong emphasis on a sustainable industry. Efforts will focus primarily on resource-intensive sectors such as textiles, construction, electronics and plastics. The EU will **present** a new action plan for a more **circular** economy in early 2020, committed to more sustainable products and accompanied by a **new industrial policy strategy**. These European plans will have profound implications for Belgian and Flemish policies, including this action plan. Plans on circular economy are also in the pipeline at the federal level, which are likely to be published in 2020.
Again, particular focus will be placed on plastics. Moreover, the Belgian cross-sectoral federation of the chemical and life sciences industries, Essenscia, focuses more and more on the circularity of our plastics.

Other initiatives are running in parallel with this plan at the Flemish level. In December 2016, Flanders presented **Catalisti**, a spearhead cluster to boost innovation in the chemicals and plastics sectors. This cluster will address current issues such as global warming and the valorisation of materials and waste. Flanders also launched the '**Moonshot'** for Flemish industry in 2019, an investment portfolio of EUR 20 million annually that regards innovation relating to carbon emission, capture, storage, reuse, and process optimisation as the solution to the climate issue. **Circular Flanders** encourages innovation in products, and business, production and consumption models. It initiates CE experiments, ensures that we can learn from the experiences gained and focuses on scaling up promising pilot projects to common practice. Funds from the VMH start-up budget will be made available for this operation in implementation of the Government of Flanders's decision of 24 November 2017.

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Finally, in December 2019, Flanders published its Flemish Energy and Climate Plan 2021-2030 and its long-term Climate Strategy 2050, with key focus on a circular plastics economy. The way we produce and use plastics and keep them in the cycle contributes significantly to carbon reduction. The transition consists of several components:

- in terms of production:
    - replacing fossil raw materials with bio-based and recycled materials, locally sourced where possible
    - industrial symbiosis
    - producing goods with as little material input as possible, which last longer, are fully reusable, recyclable or compostable, and store carbon
    - companies in closer proximity that manufacture sustainable products, maintain and repair them and collect them again for reuse and recycling after their life cycle has expired
- in terms of consumption:
    - avoiding disposable products and organising services in such a way that they require fewer materials and keep products in cycles for longer
- in terms of waste management:
    - ensuring that product manufacturers have access to a local pool of reusable and recyclable raw materials
    - the final treatment of waste using final landfilling or incineration will be virtually non-existent by 2050. The carbon released during incineration will be used as a new raw material and be stored in products. The presence of a strong chemical cluster in Flanders offers special opportunities
    - waste collectors and converters are evolving into suppliers of new raw materials that advise their customers on how to use material streams as efficiently as possible
    - only non-convertable residues resulting from these recycling processes are still eligible for incineration or landfilling. Incineration takes place only in plants that valorise the released energy to a high standard.

This plan contributes to a number of overarching targets laid down in the Flemish Energy and Climate Plan 2021-2030 to be achieved by 2030, such as:

- reducing the material footprint of consumption in Flanders by 30%
- reducing the amount of household residual waste to 100 kg per person
- reducing the amount of industrial residual waste by 25%[14].

Circular Flanders, a hub and source of inspiration for the circular economy in Flanders, envisages a more integrated approach to the transition to a circular economy during this term of office. This approach encompasses several sub-transitions, broadly supported by relevant stakeholders and each with their own dynamic working agenda (including for plastics). The sub-transitions should allow for a decrease in the material footprint in the different need systems:

- Housing and buildings account for 33% of the global carbon footprint of consumption in Flanders and 39% of the material footprint. About 15% of this comes from the material impact of buildings and road infrastructure. The construction industry is one of the largest consumers of plastics.
- Food accounts for approximately 22% of the global carbon footprint of consumption in Flanders and 32% of the material footprint. Packaging plays a not

[14] The 25% will be calculated as set out in the Implementation Plan for Household Waste and Similar Industrial Waste

insignificant role in the food loss debate. A Green Deal with the distribution sector was announced in the Packaging Plan 2.0.

- Transport and mobility account for approximately 20% of the global carbon footprint of consumption in Flanders and 11% of the material footprint. About 15% of this comes from car manufacturing, maintenance and repair.

The production and use of all kinds of consumer goods represent about
14% of the global carbon footprint of consumption in Flanders and 11% of the material footprint. Household appliances, communication devices, upholstery and clothing/shoes, home maintenance products, etc. play an important role in this. Plastics are intertwined with each of these need systems. This plan does not aspire to achieve the transition in each of these need systems, but can contribute to reducing environmental impact through better use and recycling of plastics in each of these need systems.

It is becoming clear after years of research and planning that all the different elements and components of a circular economy are strongly intertwined. In other words, the various initiatives cannot be considered separately from each other. This awareness has clearly already permeated the European Union, which wants to act upon it with the innovative approach of the Annual Sustainable Growth Strategy and the European Green Deal. Flanders must also show the ambition to connect these different related actions and make them consistent, whenever possible. The plans we are devising are not static, but must be continuously adapted to developments elsewhere and to advancing insights. One single action plan cannot achieve something as complex as a circular economy, but is part of a continuous process ranging from trial and error to informed policy initiatives, to seek progress at all policy levels and with all the stakeholders.

4.2 VISION ON PLASTICS

Our ambition for the future is that:
- plastic products are designed in such a way that they have a long lifespan, can be reused, and are subsequently recycled in a high-quality manner;
- and that plastics are used as efficiently as possible, so that fewer primary raw materials need to be used and chain losses are avoided.

This means that Flanders will put even more effort into **waste prevention** and **efficient use** of plastics. To that end, an approach will be developed to reduce the amount of 'disposable' products. Strong focus will be placed on reuse and on keeping plastic materials in the chain for as long as possible.

We continue research into circularity indicators and ensure that policy and industry (designers, producers, distribution sector and marketeers alike) orient themselves towards **ecodesign**. We gather the necessary elements to eventually arrive at a circularity test to which all products and packaging will be subjected before they are placed on the market. Research into the role of bio-based plastics in a circular chain is one the priorities.

We increase the targets for the **selective collection** of plastics and build **high-performance sorting facilities** that have sufficient sorting capacity and fit into a **smart logistics chain** of collection, sorting, recycling and **demand-driven sales**.

We break through the limitations of today's **sorting and recycling techniques** by looking for complementary or alternative techniques, preferably within Europe. Europe itself indicates

that it wants to quadruple its plastics recycling capacity by 2030 compared to 2015.

This will result in an **integrated plastics chain**, with the chemical and plastics converting industries working together with recyclers and buyers (i.e. the brand owners who determine the design), which will give them a wide range of high-quality outlets for their output streams.

However, realising such a vision is not easy. Its success depends on collaboration between all the actors involved, as the responsibility does not lie with one single public authority or sector, or with part of an industry or population, because all links of the chain are interconnected.

Everything starts with mapping the life cycle of a plastic product. From mining to recycling, from production to use. For this reason, the actions in this plastics plan hinge upon a life-cycle approach. The plan therefore encompasses the following key lines:

I. Less and efficient use of plastics
II. Creating a sustainable recycling market for plastics
III. Plastic recyclate as a fully-fledged raw material
IV. Commitment to knowledge gathering and data collection
V. The exemplary role of public administrations and other frontrunners in a circular procurement policy.

4.3 BASIC PRINCIPLES

4.3.1 Management hierarchy for plastics

The management hierarchy is the cornerstone of the waste and materials policy and establishes an order of priority to aim for an efficient use of materials and minimise the adverse environmental impact of waste. The Materials Decree states the following order of priority:
- waste prevention
- preparation of waste for reuse
- recycling of waste and the use of materials in closed material cycles
- other waste recovery operations, such as energy recovery and the use of materials as energy source[15]
- the disposal of waste, with landfilling as last resort.

The management hierarchy can be deviated from when justified by life-cycle thinking. The preferred step differs for each plastic material and depends on technical and legislative constraints.

15 The Materials Decree classifies gasification and pyrolysis whereby the components are used as chemicals under recycling (R3). Gasification and pyrolysis whereby the components are used as fuels fall under operation R1 (use as fuel).

The figure below shows the order of priority for plastics.

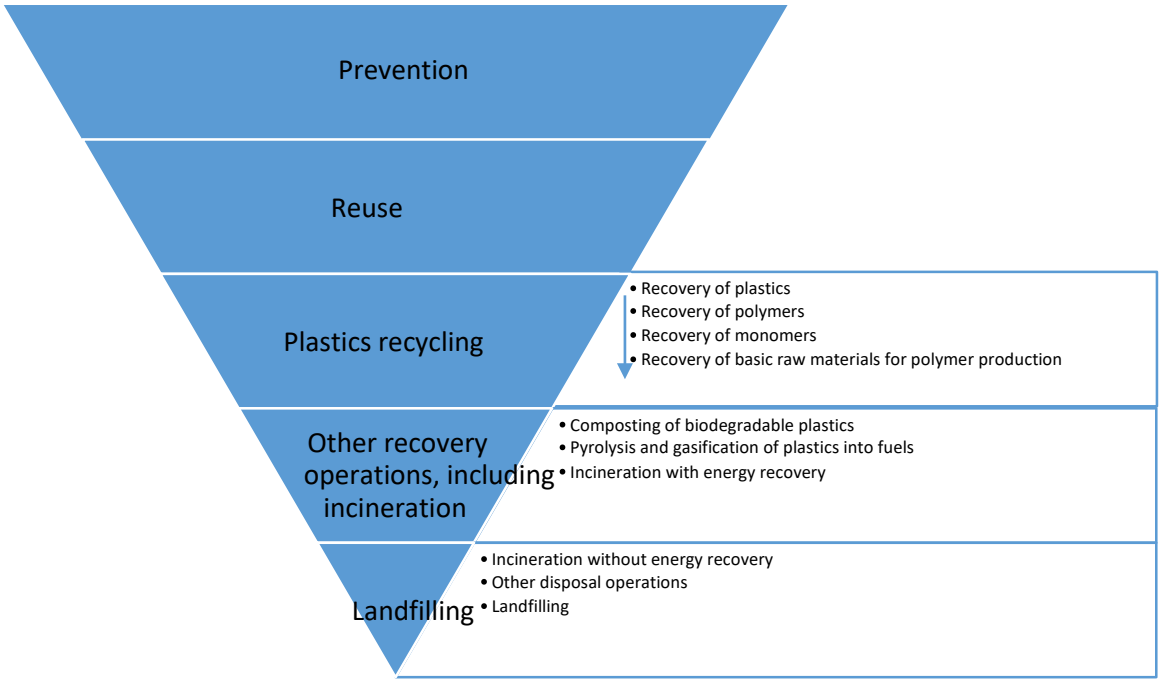

Figure 5: Order of priority for plastics

Priority should be given to promoting **waste prevention** and pursuing a more efficient and less environmentally harmful use and consumption of materials through adapted production and consumption patterns. The second step aims to encourage preparation for **reuse**.

In addition, a closed plastics cycle is also achieved through proper recycling of materials that still end up in the waste phase. It is important in this context to create clarity as to what is meant by plastics recycling and when it is regarded as high-quality.

High-quality plastics recycling of both fossil and bio-based plastics consists of maximising the value of the plastic material:

- Plastics recycling results in the production of materials that can be reused in the production of plastic materials. Consequently, the output of plastics recycling is always plastic recyclates, polymers, monomers or basic raw materials for polymer production.
- Mechanical plastics recycling must be aimed at using the original functional material in a similar or comparable application that utilises the properties of the plastic to the maximum extent: e.g. PVC pipes to PVC pipes, PET bottles to PET bottles, PP originating from toy applications to new toy applications, PET bottles to PET textiles, PP originating from WEEE to PP in EEE, etc.
- Mechanical plastics recycling of the original functional material in a non-similar or non-comparable application can only be justified in terms of energy efficiency with respect to other recycling techniques: e.g. PP packaging to PP-EEE with flame retardants, mixed plastics in thick-walled applications, etc.

- Chemical plastics recycling is an energy-intensive process and should be regarded as a complementary solution to mechanical recycling for plastics that are too contaminated, complex or degraded, or that need to be decontaminated.
- Chemical recycling breaks down plastic waste into building blocks that are reused for the production of plastics: solvolysis in which polymers are being separated, chemical depolymerisation in which plastics are transformed back into their monomers through a chemical reaction, and thermal depolymerisation in which plastics are broken down into monomers or basic raw materials for polymer production. Techniques that essentially lead to the production of raw materials that are reused for the production of plastic materials are regarded as high-quality plastics recycling.

Plastics recycling is followed by **other types of recovery** that result in raw materials not being reused for the production of plastics. This also includes the incineration of plastics with energy recovery. This means that thermal depolymerisation techniques such as pyrolysis or gasification that convert plastics into fuels must be regarded as other types of recovery. When biodegradable plastics are composted, the chemical bonds are broken and reduced to water, carbon dioxide, mineral salts and biomass. Composting of plastics does not result in materials that can be used to produce new plastic products and must therefore be regarded as another type of recovery. This step also includes the incineration of plastics with energy recovery.

The last step of the management hierarchy is the **disposal** of plastic waste, including incineration without energy recovery, and landfilling as the very last step.

4.3.2 General principles of ecodesign in the circular plastics cycle

Ecodesign goes hand in hand with the circular economy. Products and services must be designed to fit into a circular economy. Ecodesign brings a life-cycle approach to designers with the aim of minimising the environmental impact of the product or service. Most decisions affecting the product itself are taken during the design stage, which is when all the information should be available in order to make the right choices.

Addressing the environmental impact of a product extends beyond looking for ecological materials. A product has many more dimensions than material alone, and sustainable interventions are possible in all these areas. OVAM uses the life-cycle scenario, based on the Life-Cycle Design Strategy (LiDS) Wheel, as a tool to map all the dimensions. This scenario is made up of eight steps that a product goes through during its life cycle.

Design for eternity

1. Think about the need that the product will fulfil and survey and research the market to that end
2. Design for shared or multiple use
3. Combine a product with the provision of a service
4. Integrate different functions into one product
5. Offer the option to purchase additional functions and add them to the basic product in modules

Raw materials make the difference

1. Choose recyclable raw materials (bio-based or fossil)

2. Use recyclate (= processed residual streams)
3. Use residual streams (= unprocessed 'waste')
4. Choose harmless/non-toxic alternative raw materials
5. Choose biodegradable/compostable raw materials if this has a function or generates added value

Material efficiency

1. Choose an efficient production technique that minimises waste
2. Choose lightweight structures to save on fuel consumption

Production / process efficiency

1. Valorise by-products (residues) from in-house production processes
2. Improve processes to reduce material consumption and/or waste production
3. Reuse components during production in a fully-fledged and unmodified manner
4. Design new products using old components or raw materials (repurposing, remanufacturing or upcycling)
5. Reduce the number of production steps
6. Produce as locally as possible and limit the number of suppliers
7. Consider new technologies

Minimise distance and volume

1. Choose environmentally responsible transport modes such as water or rail transport
2. Short chain: reduce the distance between production and consumption
3. Avoid packaging material for transport whenever possible
4. Choose reusable packaging
5. Minimise product weight and volume to limit fuel consumption
6. Maximise the amount of product per transport volume
7. Design products that can be disassembled. This will provide benefits in terms of volume and recycling
8. Make sure that air or water can be extracted from products
9. Consider the impact of your marketing

Limit consumption and promote repair

1. Design your product with a view to lower material, spatial and energy consumption
2. Make sure products can be completely switched off (stand-by consumption)
3. Reduce the consumption of processing aids
4. Provide a repair service and repair information and make spare parts available
5. Design with the intention of curbing overconsumption

Lifetime extension

1. Design with a view to a long physical and psychological lifetime
2. Design with a view to easy maintenance, upgrading, modularity and changing context following initial use
3. Design with a view to repairability and to renovation, repurposing and industrial remanufacturing

Every ending is a new beginning

1. Design with the purpose of enabling recycling
2. Organise a collection or take-back system
3. Extend the lifetime by promoting reuse

The Flemish Coalition Agreement states that we are committed to biomass as a sustainable raw material and invest in innovation to use CO_2 as a raw material. Plastics must be biodegradable whenever possible and desirable based on their function. The biological raw materials used must always be sustainable. The policy vision 'The Bioeconomy in Flanders' continues to offer important guidance in this respect.

From a climate perspective, we want to organise a more fossil-free society where bio-based materials can stay in the cycle for as long as possible.

The circular economy has two cycles:
- a technical cycle in which products are made from materials. These products are repurposed after use or the materials are recycled;
- a biological cycle in which materials are returned to nature after use.

The basic principle of the circular economy is that raw materials are constantly reused in the technical or biological cycle. When a polymer is produced from biological raw materials, energy is put into the production of this polymer, additives are added to give the material certain properties and colour, and it is given a function. In terms of value and energy retention, it is more efficient to repair, use or recycle plastic materials made from biological raw materials within a technical cycle (such as, for example, the technical cycle of paper and cardboard where the raw material is of biological origin). The choice to give a degradable/compostable property to such high-quality material must therefore be deliberate as it implies loss of value and energy.

The basic principles for plastics from biological (and fossil) raw materials are:
- plastics from biological and fossil raw materials are repairable, reusable and recyclable within the technical cycle
- preference is given to production based on locally available raw materials
- plastics are only biodegradable/compostable where this has a function or generates added value.

4.3.3 Role of bio-based plastics

The full life cycle and functionality of products must be taken into account. Local resource extraction takes preference. This is the basic principle for both fossil-based plastics and bio-based plastics.

Reference is often made to the fact that the carbon in bio-based plastics is of biogenic origin and therefore better for the environment. Biomass is regarded as a renewable raw material, with the carbon being regenerated at a faster rate compared to fossil oil. The issue becomes more complex, however, when the extraction of primary biomass is compared to the use of recycled fossil raw materials. It is difficult to assess the environmental benefit of bio-based plastics at present, especially when biomass is not produced locally.
This requires product-specific life cycle assessments, which are not available for everything that is being produced. Moreover, such LCAs should not be the only starting point. The full life cycle takes precedence. The general principles of ecodesign (see Chapter 4.3.3.) always prevail over LCAs that highlight only one aspect of the life cycle.

Replacing fossil-based plastics one on one with bio-based plastics is therefore not necessarily better for the environment.

The policy vision 'The Bioeconomy in Flanders' must set the direction for the manufacturing industry in terms of the sustainable use of biological raw materials. This bio-based economy is only one aspect of the policy vision 'The Bioeconomy in Flanders'. The agreements made about the Flemish biomass cascade must therefore be respected (raw material for industry ranks 5th).

Figure 6: Biomass as raw material for industry, cascade of value retention. Source: Circular Flanders, Action Plan on the Sustainable Management of Biomass Streams and Residual Biomass Streams 2015-2020

Products must above all be designed smarter so that they last longer and are more easily repairable, reusable and recyclable. Plastics must be recyclable and recycled to the maximum extent possible. These two core statements are paramount at all times and apply to both fossil-based and bio-based plastics.

4.3.4 Role of biodegradable plastics

Many of the biodegradable plastics that are currently on the market do not offer any added value for a sustainable society. They represent a new disposable alternative to existing disposable plastics or packaging or even reusable catering materials. They are not or insufficiently composted or recycled, but instead incinerated in the end.

Biodegradable plastics do not decompose just like that or just anywhere, which means they must not be released or thrown into the environment just like that. They are certainly not a solution for litter either. Composting compostable plastics has little or no added value: they decompose into CO_2 and water up to 90% and contribute little or nothing to the quality or quantity of the compost. Much of the precious material is thus lost.

The true potential of biodegradable plastics lies, on the contrary, in applications where the biodegradable nature of the plastic has a function or generates added value. Such applications have been known to exist for a long time in medicine. Other promising initiatives are also in place where the biodegradable property of plastics has a function or offers added value, e.g. in aquaculture, fisheries and agriculture. The bags distributed by intermunicipal associations to organise the selective collection of organic waste are another good example.

In addition, they can provide a solution for matters that now end up as a contaminating or disruptive factor in biological treatment, such as fruit stickers, tea bags, coffee pods and tomato clips from greenhouse cultivation, to name just a few examples. These often still contain a lot of plastic and/or do not decompose. The increasing focus on the quality of end products from organic treatment is a key driver[16] in this respect.
The option of compiling a positive list of products for which compostable or biodegradable plastics can provide added value therefore certainly deserves consideration.

16 The Fertilising Products Regulation (Regulation 2019/1009) will come into force from 16 July 2022 and allows companies in EU Member States to place compost and digestate on the market more easily. As a result, competition on the market of organic fertilisers and soil improvers will increase. Producers of these products in Flanders already maintain a high level of quality. Still, further increasing the purity of these products will offer significant commercial added value. The Fertilising Products Regulation also provides for a tightening of the standard for plastic contaminants in compost and digestate from 16 July 2026 onwards.

5 PLASTICS ACTION PROGRAMME

The plastics plan must be considered in relation to other implementation plans, prevention programmes or plans supported by the Minister/Government of Flanders, such as:

- Implementation Plan for Household Waste and Similar Industrial Waste 2016-2022
- Action Plan on the Sustainable Management of Biomass Streams and Residual Biomass Streams 2015-2020
- Policy programme 'Material-Conscious Construction in Cycles 2014-2020'
- Flemish Integrated Marine Litter Action Plan
- Flemish Packaging Policy 2.0

Overlap with existing plans is visualised in this chapter by including relevant actions from other plans in a text box. Actions initiated under the Plastics Plan are indicated in bold.

5.1 LESS AND EFFICIENT USE OF PLASTICS

Plastics are praised for their benefits during the use phase. They promote comfort, safety, shelf life, hygiene and energy efficiency. This has caused the use of plastics to increase exponentially in recent decades.

The benefits of plastics during the use phase often seem to hamper a circular approach. Think, for example, of:

- the large variety of polymers and plastics
- the multitude of additives added to give plastics the desired properties
- the pursuit of lightweight applications
- ideal use for single-use applications, which have a high risk of ending up as litter
- the low cost price, which makes it a very competitive material
- etc.

Whereas plastic products mainly offer benefits in the use phase, we see a different picture after the use phase. As a result, the use of plastics has come under attack. The message is clear: it is no longer acceptable to produce and use plastics solely for their benefits during the use phase. Problems arising after the use phase must also be addressed.

If we want to tackle the core of the problem and really aim for a circular plastics chain, we need to change our current consumption and production patterns.
We must move towards a smart, innovative and sustainable plastics industry where design and production are focused entirely on reuse, repair and high-quality recycling.

5.1.1 Prevention and reuse: more with less

Prevention is better than cure. Unnecessary use of materials must be avoided as much as possible.

By '**consuming less**' in the first place and opting for **reuse**, we will have to dispose of less plastics less quickly. More and more consumers want to avoid waste, including in the choices they make in terms of consumption.

Entrepreneurs must increasingly avail themselves of opportunities to reflect on circular solutions to prevent (plastic) waste or as such keep their plastics in the chain for longer. Business models that focus on reuse, lifetime extension, digitalisation and design for disassembly and recycling lead to less production and the selling of services instead of products. It therefore comes down to creating value differently as a company.
A one-size-fits-all approach is virtually non-existent in this context, which is why we want to support each sector to develop its own approach.

Ongoing actions

Within the framework of the Implementation Plan for Household Waste and Similar Industrial Waste, we are already taking the following actions:
- We continue to raise awareness of both environmentally responsible consumption and waste prevention among citizens and businesses.
- We continue to assist organisers of large and small events in reducing their ecological footprint through the thoughtful use of catering materials. To that end, reusable catering items are promoted as much as possible. Through an amendment to VLAREMA, it will be prohibited from 1 January 2020 to serve drinks in single-use packaging unless the event organiser sets up a system that guarantees that at least 90% of this packaging will be collected separately at said event. This will be raised to 95% from 1 January 2022. It concerns disposable cups in which drinks are served, as well as beverage bottles, beverage cartons and cans.
- We also remind public administrations and local authorities of their exemplary role by curbing the consumption of disposable products for their own activities through a ban on use in VLAREMA and by solely promoting reusable catering items. It will be prohibited from 1 January 2020, for example, to serve drinks in disposable cups or catering material. This will be extended as of 1 January 2022 to serving prepared food in single-use catering material.
- We ensure chain cooperation through a collective plan for nappies and incontinence materials, which explores the opportunities and barriers of new concepts for reusable nappies, as well as for closing the material chain of disposable nappies and incontinence materials.
- We want to further examine in this plastics plan what approach we can take to on-the-go consumption.
- We are also implementing additional measures to reduce the consumption of certain disposable items and packaging.

Action 1. We implement the European Single Use Plastics Directive[17] in coordination with the other Regions and the federal public service.
Promoter: OVAM
Parties involved: FPS Health, Food Chain Safety and Environment, the other competent regional parties, Interregional Packaging Commission (hereafter IRPC), essenscia. Depending on the specific plastic products, the parties involved will be expanded to include relevant sector federations.
Timescale: 2019-2022

17 DIRECTIVE (EU) 2019/904 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 June 2019 on the reduction of the impact of certain plastic products on the environment

Description of the action: The objectives of the SUP Directive are to prevent and reduce the impact of certain (single-use) plastic products on the environment, in particular the aquatic environment, and on human health, as well as to promote the transition to a circular economy with innovative and sustainable business models, products and materials.
The directive contains provisions that pertain to both federal and regional competences.
Annex 1 lists the specific measures for each plastic product subject to the SUP Directive and the transposition deadlines and gives an indication of whether this is being taken up at the regional or federal level. **Reference to more (background) information:** European Directive on the reduction of the impact of certain plastic products on the environment (Single Use Plastics Directive)

Action 2: We contribute to the European target of reducing the consumption of lightweight plastic carrier bags in Belgium to maximum 90 bags per inhabitant in 2019 and 40 bags per inhabitant in 2025.
Promoter: OVAM
Parties involved: FostPlus, COMEOS, IRPC, distribution sector, Unizo
Timescale: 2019-2021
Description of the action: The ban on the free distribution of lightweight plastic carrier bags in retail outlets in Flanders has been included in VLAREMA. The reporting on the consumption of such plastic carrier bags is covered by the accreditation of FostPlus. We are examining, in consultation with the actors, whether more ecological alternatives can be found for the bags that do not come under the existing ban on use. Care must be taken about the possible adverse effects of a complete shift to paper bags or (home) compostable bags. Objective and robust criteria must therefore be considered to define what is meant by more sustainable alternatives.
The impact of this ban will be evaluated after two years.
Reference to more (background) information: European Directive as regards reducing the consumption of lightweight plastic carrier bags[18], **OVAM-website**

This does not mean that disposable items or packaging cannot offer any benefits. Packaging has a useful function, for example, in protecting products from damage or spoilage. The environmental damage of food or product loss that is avoided by using packaging may be greater than the environmental damage caused by the packaging itself[19]. It is rather about exploring where we can do with less and how reuse can keep a sustainable material like plastic in the chain for longer.

Action 3. We promote reuse and distribution methods that reduce packaging consumption (incl. e-commerce).
Promoters: IRPC (for the prevention plans), OVAM (for the Green Deal)
Parties involved: FostPlus, VIL, Valipac, COMEOS, Fevia
Timescale: 2019-2024
Description of the action: This is concretised in the prevention plans to be submitted triennially to the Interregional Packaging Commission (IRPC) and in a Green Deal for the distribution sector. In these plans we are considering how products can be placed on the market differently to reduce packaging consumption, without increasing food waste throughout the life cycle and without compromising on hygiene and food safety. Within the Green Deal we are looking at what changes this requires for shop layouts and concepts.
Reference to more (background) information: IRPC prevention plans, Green Deal concept

18 DIRECTIVE (EU) 2015/720 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2015 amending Directive 94/62/EC as regards reducing the consumption of lightweight plastic carrier bags
19 From the OVAM report 'Voedselverlies en verpakkingen' ('Food Loss and Packaging') ((2015)

Action 4: We support the roll-out of the 'food packaging of the future' roadmap.
Promoter: Pack4Food
Parties involved: OVAM, packaging industry (= Roadmap 2030 network), Catalisti, essenscia PolyMatters, Flanders' FOOD, VIL, Sens-NET
Timescale: 2020-2021
Description of the action: The roadmap is an initiative of the packaging sector and provides an overview of what innovative projects and R&D need to be carried out in the coming years to achieve more circular food packaging. It concerns both household and industrial packaging, ranging from primary to tertiary packaging. The roadmap sets out lines for research and development up to and including 2030 and is centred around three key themes:
- circular packaging
- active, smart and customised packaging
- logistic processes.

The important connection with the Food Loss Action Programme (Actieprogramma Voedselverlies) must be ensured here.
Reference to more (background) information Pack4Food website, Food Loss Action Programme.

5.1.2 Design and alternative materials

New materials, e.g. bio-based and/or biodegradable plastics, offer opportunities. The development of such new plastics indeed reveals new properties that can provide a circular solution. Or it turns out that they can contribute to reducing CO_2 emissions. Flanders boasts excellent and operational research institutes in the field of bio-based economy[20] and is home to one of the few European pilot plants (Bio Base Europe Pilot Plant).

The use of bio-based and/or biodegradable plastics can also have drawbacks, e.g. when their widespread application causes unwarranted pressure on the food and ecosystems. To prevent this, more research is required into their production and application. The impact of bio-based and biodegradable plastics on material and organic recycling also requires further clarification.

It is important that our policy continues to focus on developing circularity indicators so that we can also assess aspects such as dematerialisation, resource efficiency, reuse, lifetime extension, process optimisation, short-chain production, etc. To ultimately come down to a circularity test. Furthermore, we remain committed to ecodesign for products containing plastics.

Action 5: We continue to be committed to ecodesign and the development of circularity indicators for products.
Promoter: OVAM
Parties involved: Circular Economy Policy Research Centre, Flemish spearhead clusters
Timescale: 2020-2024
Description of the action: Various sub-indicators are already in place for ecodesign and circular economy, such as the recyclability benefit, the material circularity indicator, the product environmental footprint, etc.
Ideally, we could have such sub-indicators aligned to eventually achieve the concept of a 'circularity test' which products can be subjected before being placed on the

20 Flanders Investment & Trade (FIT) brochure puts Flanders' assets in bio-based economy on the international map (2016)

market. A particular concern when developing such indicators is to obtain the product- or company-specific data required for calculating these indicators accurately. This should be considered with the actors involved.
Reference to more (background) information: Circular Economy Policy Research Centre, OVAM website on ecodesign

Action 6: We continue to impact on international ecodesign policies for EEE, automotive products and packaging.
Promoter: OVAM
Parties involved: FPS Health, Food Chain Safety and Environment
Timescale: 2020-2025
Description of the action: The growing use of composite materials, whether fibre-reinforced or not, complicates the recycling of the plastic fraction in these product groups at end-of-life.
In addition, the presence of certain additives creates problems for marketing recycled plastics. These problems can be minimised by taking ecodesign principles into greater account during the design stage. Ecodesign principles must also be considered to a larger extent during the packaging design stage.
Reference to more (background) information: For better not worse: Applying ecodesign principles to plastics in the circular economy

Action 7: We clarify the role of new materials in a circular economy. Bio-based and/or biodegradable plastics are considered to be a research priority in this regard.
Promoter: OVAM
Parties involved: IWG Bio-economy, Vlaco, essenscia, Catalisti, CINBIOS, EWI, Belgian Biopackaging, Ghent BioEconomy
Timescale: 2020-2025
Description of the action: Because not all bio-plastics are biodegradable and not all biodegradable plastics are organic, it is important to point out the differences between the two very distinctly. The applicability of biodegradability also requires clarification. After all, the degradability of plastics in a maritime environment is different than degradability through (industrial) composting. The degradability of plastics in different marine or maritime environments is still an unexplored research area.
Later in this action, work will be done to compile a positive list of applications in which biodegradable/compostable plastics can prove their added value.
Reference to more (background) information: position on bioplastics on OVAM website

5.1.3 Preventing plastics from ending up in the environment

People must first of all be prevented from leaving things behind in the environment. Also, the litter that is created must be cleaned up as soon as possible. Awareness-raising, education, attention, enforcement and opportunities to collect and sort waste remain essential in both cases.
People must become increasingly aware that valuable material is also lost when they generate litter.

Ongoing actions

For this reason, the participants in the Flemish initiative 'Mooimakers' against litter and illegal dumping in Flanders are continuing their actions and raising the stakes where possible.
Litter agreements are concluded with local authorities, for instance. To be able to enjoy the support of the Mooimakers, they must undertake to enforce their police regulations and adapt them accordingly if necessary. Another option is to draw up a litter action plan.

Beach litter is being addressed with a specific OVAM programme for coastal municipalities.

However, to bring about a change in behaviour, OVAM, local authorities, educational institutions and sector organisations concerned continue to play a key role in raising awareness among consumers and the businesses concerned. The Implementation Plan for Household and Similar Industrial Waste keeps aiming for this by launching sector-specific campaigns, developing recycling tips (Cirkeltips) tailored to businesses, etc. This should also include the enforcement of the different measures.

The Flemish Integrated Marine Litter Action Plan zooms in on the actions needed to prevent plastics from ending up in our waters (both watercourses and seas) as well as on the remedial measures that can be taken.

The target is to reduce the influx of waste (including plastics) from Flanders into the marine environment by 75% by 2025.

Action 8. We make sure that all ports and waterway managers in Flanders have adequate operational resources at their disposal to clean up drift debris in an effective and cost-efficient manner.
Promoter: OVAM
Parties involved: VMM, port authorities, waterway managers, CIW, Mooimakers
Timescale: 2020-2024
Description of the action: Drift debris must be removed structurally and regularly, before it drifts further downstream towards the sea during high water levels or when weirs or locks are opened. A project group will be set up to that end to research measures and techniques that can be deployed on navigable waterways without creating additional hindrance to shipping, and concrete agreements will be made with the ports and waterway managers, which may be concretised in a protocol.
The Flemish Integrated Marine Litter Action Plan provides for a marine litter baseline measurement.
Reference to more (background) information: OVAM website with link to Flemish Integrated Marine Litter Action Plan

We also engage internationally to combat marine litter. Most of the influx of waste into the oceans is found to originate from a specific geographical region, and more than half of the influx is caused by five countries. These are the countries with rapid economic growth: China, the Philippines, Indonesia, Thailand and Vietnam. These countries lack sufficient infrastructure and resources to treat waste and recycle plastic waste streams. It is estimated that a coordinated approach in these five countries would reduce the global influx of plastic waste by 45% by 2025.

Action 9: We set up an international partnership in one of the five countries responsible for more than half of the influx of plastic waste into the oceans.
Promoter: OVAM
Parties involved: PlasticsEurope, essenscia, denuo, Department of Environment and Spatial Development, Foreign Affairs Department, Flanders Marine Institute (VLIZ)

Timescale: 2021-2025
Description of the action: OVAM shares its expertise in collaboration with industrial partners. It explains its policy and tools and helps the national authorities to upgrade their local waste and materials policy. Various collaboration options are being explored. A specific proposal is formulated and submitted to the Government of Flanders.
Reference to more (background) information: Flemish Integrated Marine Litter Action Plan

Although litter and fly-tipping are mainly the result of poor waste management and/or human behaviour, we cannot state that the problem is situated entirely at the time when consumers want to dispose of it. A targeted choice for materials or their composition can prevent further nuisance at producer level as well. Prevention at source can be an important tool to prevent unwanted effects.

Action 10. We implement the ban on fruit stickers through VLAREMA to monitor the quality of (home) compost.
Promoter: OVAM
Parties involved: Comeos, Vlaco, Association of Belgian Horticultural Cooperatives (VBT)
Timescale: 2020-2022
Description of the action: Contamination with fruit stickers in VFG or green waste must be avoided. The sector will be given two years to adjust to the ban. VLAREMA provides for exceptions to this ban for home compostable stickers, functional stickers and stickers required by law.
OVAM enters into a Green Deal with the potting soil federation to supply uncontaminated material for potting soil (as an alternative to peat).
It is suggested that the sector should also participate in the Green Deal that OVAM will set up with the distribution sector.
Reference to more (background) information: VLAREMA article

The intentional use of microplastics in products must be phased out. Pellet loss and dust that can end up immediately into the atmosphere/environment when shredding plastic waste or reducing it in size or which is released as a result of loading, unloading and moving minced plastic material must be avoided to the maximum extent possible.

Action 11. We support the phase-out of and/or ban on microplastics used intentionally in various products.
Promoters: FPS Health, Food Chain Safety and Environment
Parties involved: OVAM, essenscia, VVSG, consumer organisations, Detic, IVP, PlasticsEurope Belgium
Timescale: 2019-2025
Description of the action: To this end, we support the implementation of the Belgian sector agreement on the phase-out of microplastics used intentionally in personal care products. In addition, we promote the Beat the Microbead app to make consumers aware of the emissions they produce themselves when using personal care products containing microplastics. Together with the federal administration, we are also doing this for these and other products to which microplastics are intentionally added, by implementing the European restriction under REACH. OVAM is actively involved in this, either by the federal administration, or by entering into discussions with the actors involved. As a result,

it will be prohibited to place products on the market to which microplastics are intentionally added, with a focus on feasibility and proportionality.
Reference to more (background) information: Sector agreement to phase out microplastics, Beat the Microbead, EU Restriction Report

Action 12. We encourage companies to commit to Operation Clean Sweep in order to prevent pellet loss into the environment.
Promoters: PlasticsEurope, essenscia
Parties involved: Port of Antwerp, Alfaport, Febetra, TLV, denuo, VIL, OVAM, BQA, VOKA
Timescale: 2020-2022
Description of the action: Pellet loss contributes significantly to the plastic soup. A lot of pellets leak into the environment by accident, during transport, as well as during production and treatment. Operation Clean Sweep is an international programme that has existed for 25 years. The programme offers guidelines to both plastics producers and plastics converters, as well as transport and logistics companies on how to prevent pellet loss into the environment. In addition, we monitor pellet loss into the environment and share best practices to prevent further loss. The actors will also take the initiative to clean up the spills themselves and cover the costs incurred for this.
Reference to more (background) information: Operation Clean Sweep website, initiative in the Port of Antwerp (Zero Pellet Loss)

Action 13. We examine more mandatory government measures that could help reduce pellet loss.
Promoter: OVAM
Parties involved: Department of Environment and Spatial Development
Timescale: 2021-2025
Description of the action: We examine more coercive government measures that could be introduced if the voluntary commitments from the sectors concerned turned out not to yield the desired results in terms of pellet loss prevention. We have in mind, for instance, the imposition of environmental conditions or the inclusion of certain measures in audit schemes for the sectors concerned.

Action 14. We conduct research into the distribution, effects and risks of microplastics in surface waters in Flanders.
Promoter: VMM
Parties involved: Aquafin, OVAM, waterway managers, CIW
Timescale: 2019-2022
Description of the action: The research is aimed at mapping the sources and transport routes of microplastics in the water chain and water system, more specifically their presence in wastewater treatment plants, spillways and drinking water installations, as well as in surface water (including sediments and biota). To this end, a research monitoring programme is being drawn up and implemented, data are being modelled, and conclusions and policy recommendations are formulated.

5.2 CREATING A SUSTAINABLE RECYCLING MARKET FOR PLASTICS

5.2.1 Further promoting selective collection

By focusing on increased and high-quality **collection**, we can lay the foundations for a profitable and quality recycling market.

We aim to halve the share of plastics in residual industrial waste by 2022 (compared to 2013) through measures in our Implementation Plan for Household Waste and Similar Industrial Waste. For this reason, Flanders put rigid plastics, foils and EPS on the VLAREMA list of industrial waste materials to be disposed of separately and to be further kept separately during pick-up or collection[21]. With the introduction of the mandatory selective collection of rigid plastics for households in 2018, a target has been set to raise this to at least 5 kilograms of selectively collected rigid plastics per inhabitant.

Ongoing actions

To drive up the selective collection of plastics, we are therefore continuing the actions included under the Implementation Plan for Household Waste and Similar Industrial Waste:
- We expand the selective collection of plastic waste from households and envisage a roll-out of a p+md system. The roll-out for Flanders as a whole is scheduled to be completed by April 2021.
- We frequently consult with the sectors to meet the target of halving the share of plastics in residual industrial waste by 2022.
- We offer further assistance to companies in the selective collection using sector-specific recycling tips (Cirkeltips).

The further roll-out of the policy on the selective collection for recycling also contributes to meeting our climate goals.
OVAM calculated the impact on the climate contribution, using the results in the plan-EIA (environmental impact assessment) for the Implementation Plan for Household Waste and Similar Industrial Waste (2016-2022). This was based on two scenarios: scenario 1 for the targets set out in the Implementation Plan for Household Waste and Similar Industrial Waste (which must be achieved by the end of the plan period); scenario 2 that incorporates the potential of an even more far-reaching policy for the relevant fractions. Overall, this causes a significant reduction in greenhouse gases, even if a slight increase would occur locally as a result of additional pre-treatment.

21 See Article 4.3.2 of VLAREMA

Table 3: Environmental impact of actions for an increased selective collection of plastics[22].

Actions planned		Scenario 1 (tonnes)	Scenario 2 (tonnes)	CO_2-eq (scenario 1) (ktonnes)	CO_2-eq (scenario 2) (ktonnes)
Mandatory collection of rigid plastics (post-constumer) through civic amenity sites	K1	6325	77 000	32	392
Extension of plastic fraction in pmd	K2	24 000	30 000	122	153
Selective collection of plastics in companies	K3	80 000	159 000	442	878

Action 15: We encourage the collection of plastic packaging waste from out-of-home consumption with new targets in Article 37 of the accreditation of FostPlus (December 2018).
Promoter: FostPlus
Parties involved: OVAM, denuo, IRPC, NMBS, Flemish Public Transport Company De Lijn, airports, VVSG
Timescale: 2019-2023
Description of the action: We aim to double the amount of selectively collected beverage and other food packaging consumed out-of-home by 2023 compared to 2018. This includes p(+)md released, among other things, in schools, sports centres and youth movements, at festivals and events and in public and other places accessible to the public at large, such as train or metro stations and airports. The collection of packaging from businesses through private law collectors must also double compared to 2018.
Reference to more (background) information: FostPlus accreditation

Action 16: We identify and evaluate the improvement potential for the selective collection of household plastics based on the new sorting analysis in 2020.
Promoter: OVAM
Parties involved: local authorities, VVSG, Interafval, FostPlus, Recupel, Valipac, IRPC
Timescale: 2019-2020
Description of the action: OVAM is planning new sorting analyses for household residual waste by 2020, which will allow to determine whether there is still potential for improvement in the selective collection of plastics.
Furthermore, the accreditation of FostPlus will be used to further improve selective collection among both businesses and citizens. At the same time we will extend the focus to waste prevention and ecodesign measures when the accreditation is renewed.
Reference to more (background) information: Household waste sorting analyses

Action 17: We identify and evaluate the improvement potential for the selective collection of industrial plastics based on the new sorting analysis by 2022.
Promoters: Valipac, FostPlus
Parties involved: denuo, Interafval, Recupel, OVAM, sector federations Timescale: 2021-2022

[22] Source tonnages: Plan-EIA Implementation Plan for Waste 2016-2022 and OVAM's own calculation

Description of the action: OVAM is planning new sorting analyses for industrial residual waste by 2022, which will allow to determine whether there is still potential for improvement in the selective collection of plastics. We are working on a sector-oriented policy and, for this purpose, are monitoring the degree of selective collection in sectors (and regions) on the basis of Valipac's reporting obligation (in accordance with Article 18 of the accreditation).
Furthermore, the accreditations of FostPlus and Valipac will be used to further improve selective collection in businesses. At the same time we will extend the focus to waste prevention and ecodesign measures when the accreditation is renewed.
Reference to more (background) information: Industrial residual waste sorting analysis 2018

Action 18: We conduct research within the framework of the Green Deal on Circular Construction into the potential and feasibility of the selective collection of plastics at pilot demolition sites.
Promoters: OVAM as 'coordinator' of the Green Deal; stakeholder representatives as promoters of the 'targeted actions'
Parties involved: Valipac, denuo, Flemish construction confederation, learning network 'Green Deal on Circular Construction', essenscia PolyMatters
Timescale: 2020-2024
Description of the action: On 22 February 2019, the Flemish Minister responsible for Environment and Spatial Development launched the Green Deal on Circular Construction on the initiative of Circular Flanders, OVAM and the Flemish construction confederation. Through this joint commitment, construction companies, building material producers, local and regional authorities, private property developers, researchers and other organisations will work together to make circular construction a daily reality in Flanders in the future.
Reference to more (background) information: Green Deal on Circular Construction website

5.2.2 Continuing to discourage incineration and landfill of plastics

Besides encouraging selective collection, we also want to (further) discourage the incineration and above all the landfill of plastics (including from sorting residue).

Ongoing actions

The Implementation Plan for Household Waste and Similar Industrial Waste 2016-2022 contains various actions in the Final Treatment chapter to minimise incineration and landfill.

The sorting analyses for household and industrial waste show that residual waste contains various plastic fractions, which are mainly incinerated with energy recovery. Even some fractions of the sorting residue still contain plastic fractions, whereas this fraction is currently still being landfilled (in part). Policies must be aimed at preventing (recyclable) plastic waste from being landfilled or incinerated. An optimisation of the management hierarchy must be explored.
This can be done through communication actions or with legal and economic instruments.

As far as legal instruments are concerned, the instrument of landfill and incineration bans will be evaluated within the framework of household waste and similar industrial waste. In addition, among other things, the possibility of further landfill or incineration bans for these streams will be investigated. As for the economic instruments, it will be examined to what extent a differentiated approach to levies on landfill or incineration of plastic waste streams can give direction to circular policies.
Differentiation based on energy efficiency, emissions, post-separation, climate targets, etc. will be examined, insofar as they can promote (high-quality) recycling. It can also be examined in the context of circular economy to what extent initiatives could be supported.

5.2.3 Increasing understanding and control of plastic waste exports and treatment (abroad)

Belgium is the 10th largest exporter of plastic waste in the world. In 2015, plastic waste (not only Belgian) amounted to a total of
437,309 tonnes, worth USD 205,605,473[23]. This comes down to EUR 410.4/tonne today[24]. 44% of plastic waste (in trade value) was exported directly (or via Hong Kong) to China, mostly by maritime route. Flanders accounts for 62% of Belgium's export value of plastic waste. The waste mainly consisted of ethylene polymers (175,221 tonnes), styrene polymers (4,451 tonnes), propylene polymers (28,706 tonnes) and other polymers (51,836 tonnes)[25].

The waste collected, stored, sorted and/or pre-treated in any other way can be either of Flemish or non-Flemish origin. A large number of companies are often involved in the collection, storage and/or sorting[26] stages and the related shipments, which cannot always be identified individually. Traders often act as additional intermediaries in this context.
Waste fractions are released again both during these stages and during the actual treatment, which can be landfilled, incinerated or otherwise treated. This can be done in the same or different chains, in Flanders or abroad.

The information available is fragmented to such an extent that we currently only have a limited overview of the plastic (waste) market. We must gain increasing understanding and control of plastic waste exports and treatment (abroad).

Action 19: We monitor the transposition of the recently updated Basel Convention[27] at European level (adopted at COP14 in 2019).
Promoter: OVAM
Parties involved: other Regions, IRPC
Timescale: 2020-2021
Description of the action: Negotiations for the transposition of the adopted amendments to the Basel Convention initially take place at OECD level, while discussions are also being held at EU level. We are pushing at both levels for a transposition leading to greater transparency in terms of quantities and destinations. We want to minimise the administrative burden for cross-border shipments of plastic waste for recycling within the EU for the companies involved. We are in favour of monitoring shipments to non-EU OECD countries, so as to be able to intervene if certain OECD countries are suddenly inundated with unwanted plastic waste.
Reference to more (background) information: Basel Convention text, COP14 decisions

Action 20: Valipac must offer full transparency about quantities and destinations of the plastic streams collected. This will allow us to better monitor and evaluate the impact of our policies.
Promoter: Valipac
Parties involved: OVAM, denuo, Plarebel, BIR, EuRIC, IRPC, FostPlus
Timescale: 2019-2021

23 Data from the VIL report 'Flanders Recycling Hub' (2018)
24 According to a reference exchange rate of EUR 1 = USD 1.1455 (National Bank of Belgium, accessed 09/01/2019)
25 This data shows the situation as at 2015. Meanwhile, these wastes are no longer exported to China, but Belgium remains an important exporting country.
26 The 'collection/storage/sorting' stage includes all the operations required to collect or bring together waste from various sources and from different locations for pre-treatment. Such pre-treatment may only consist of temporary storage, but may also include other processes such as dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating or mixing.
27 'Basel Convention' is understood to mean the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. This is a global agreement to control the transboundary movements and the disposal of hazardous wastes.

Description of the action: When applying for accreditation, Valipac must establish and introduce a traceability system that offers full transparency about the quantities and destinations of the plastic packaging collected up to and including the point of actual recycling.

5.2.4 Supporting innovative sorting and recycling techniques

Furthermore, there is still great potential to improve sorting and recycling techniques. The economic return of recycling is largely determined by the waste volumes that can be treated and valorised.

There are usually several polymer grades within the types of plastic that differ from each other in terms of chain length, melt temperature, melt viscosity, presence of certain additives, etc. PP, for example, is the most widely used polymer, but is placed on the market under many different variants/compounds depending on the area of application and the production technology used (injection moulding, extrusion, etc.).
The Near-Infrared (NIR) detection systems currently used for sorting plastics can recognise the polymer type fairly easily but are not discriminatory enough to detect differences between polymer grades or the presence of certain additives. The presence of dyes or pigments can also interfere with the detection. Expanding and fine-tuning detection techniques is necessary to greatly improve the quality of plastic recyclates. Research into new and better detection and analysis techniques that drive the necessary sorting process must be prioritised. Improved sorting of polymer products with functional additives can increase the added value of recycling.

High-quality mechanical recycling is increasingly faced with the growing complexity of plastics (e.g. composite materials, multilayer materials (combination of different plastics or of plastics with other materials such as aluminium, paper, etc.), thermosets, adhesives, additives, etc.). In addition, the presence of additives or the creation of blends often still creates competition with primary plastics whose material-specific properties are better known.

We therefore need to look for alternative or complementary mechanical and chemical techniques to improve and increase plastic recycling. Chemical recycling is regarded more and more as the working tool to greatly expand the mechanical recycling story and help achieve very challenging recycling targets. Complex composite waste streams such as laminated or coated plastics, contaminated plastics and mixed streams can, through targeted chemical processes, be recycled into recyclates or chemicals that can be reused.

Solvolysis, chemical depolymerisation and thermal depolymerisation technologies closely resemble traditional (petro)chemical processes and are being developed in close collaboration with or by the chemical industry itself. The petrochemical cluster in the Port of Antwerp offers opportunities in this regard for the development of this type of recycling in Flanders. Chemical recycling, however, is mostly an energy-intensive process. Additional research is required to reduce the energy consumption of recycling and optimise certain processes.

In terms of policymaking, it is important to have a good understanding of the techniques available and of the pros and cons of each type of recycling.
It is also a fact that the plastic recycling sector in Flanders is mainly characterised by an SME structure. Flemish companies find it difficult to compete with foreign companies. The reasons cited are high labour cost, high energy cost, lack of flexibility in workforce deployment, and overcapacity in other treatment plants across the border. The price competition between plastic recyclates and virgin polymers also continues to pose a huge challenge for recyclers that recycle mainly or exclusively mechanically.

Action 21. Flanders' innovation policy supports new developments of plastics with low environmental impact
Promoter: VLAIO
Parties involved: Flemish knowledge institutes, companies active in the chemical and plastics sectors, essenscia, Catalisti
Timescale: 2020 - …
Description of the action:
Flanders Innovation & Entrepreneurship (VLAIO) supports the development of plastics with lower environmental impact through various channels: higher-grade recycling, different design, new recycling techniques, improved processes, other raw material. One example is the Moonshot programme that includes, inter alia, a research project around circular carbon in materials.
Reference to more (background) information: **https://vlaio.be/nl**

Action 22. We provide additional innovative sorting and recycling capacity for plastics in Flanders. Funds from Flemish investment companies can be used for this purpose.
Promoter: VMH, PMV, etc.
Parties involved: OVAM, companies active in or relevant to the plastics sector
Timescale: 2020-...
Description of the action:
Following on from its 24 November 2017 Order, the Government of Flanders continues to seek meaningful financial participation in projects that accelerate the transition to the circular economy. These funds can be used in part for investments in the transition to a circular plastics chain, with a major focus on investments in innovative sorting and recycling capacity. Both mechanical and chemical recycling technologies can be considered in this context, and in particular initiatives that want to fully develop a highly innovative concept, product or service into a market-ready process.
Reference to more (background) information: **Circular Flanders website**

Action 23. By 2023, packaging waste recycling will take place to the maximum extent in the European Union and preferably in Belgium.
Promoters: FostPlus, Valipac
Parties involved: OVAM, denuo, essenscia
Timescale: 2019-2023
Description of the action: The packaging sector has committed itself in the packaging plan to having 100% of household packaging waste recycled in the European Union, and preferably in Flanders/Belgium, by 2023. We aim to achieve a similar commitment for industrial packaging within the plan period. OVAM is examining whether and how such a commitment can be legally enshrined. In addition, OVAM is looking into the conditions under which Belgium will be chosen as a location to invest in plastic waste treatment capacity.
Reference to more (background) information: Government of Flanders concept memorandum on renewed packaging policy 2.0

5.3 PLASTIC RECYCLATE AS A FULLY-FLEDGED RAW MATERIAL

To close the plastics cycle, it is not enough to ensure that plastics are collected selectively and processed into recyclates. Efforts are also needed to actually use these recyclates as raw materials in production, and preferably in the highest-quality applications possible.

The reason why using plastic recyclate in new products is difficult for the time being is characterised as a chicken-and-egg situation: 'no suitable plastic streams are available' versus 'there is no demand for recycled plastic streams'.

5.3.1 Stimulating demand for plastic recyclates

The plastics manufacturing industry unfortunately still too often shows reluctance to use recyclates in new products. They usually choose virgin plastics because of their consistent quality and current low selling prices, among other things. (End) users as well often still have a poor perception of products made from recyclates as far as quality is concerned.

Concerns about quality problems and product liability, process instability, colour issues, output loss, unstable supply, pressure from prices and customers, obstacles in standards and approvals or insufficient knowledge are key barriers that we must try to break through together, in order to make plastic recyclate a fully-fledged raw material for the manufacturing industry.

Research[28] and examples of practice nevertheless show that it is possible to manufacture a wide range of end products with (a content of) plastic recyclate without compromising on the performance or technical requirements of the end product.

Finally, price also remains a tricky matter. Financial incentives are needed to create added value for plastic recyclates.

[28] From the TWOL study 'Identificeren van product(groep)en met kunststofrecyclaat (recycled content) en product(groep)en met potentieel voor het inzetten van kunststofrecyclaat.' ('Identifying product (group)s with plastic recyclate (recycled content) and product (group)s with potential for plastic recyclate use'), OVAM (2017)

Action 24. We identify barriers in current product and quality standards to using plastic recyclate as raw material for end products.
Promoter: OVAM
Parties involved: FPS Health, Food Chain Safety and Environment, FPS Economy, SMEs, Self-employed and Energy, the regional public services of Brussels and Wallonia, Flanders Chancellery and Foreign Office, Department of Mobility and Public Works, Flemish construction confederation, CEN, ISO, NBN, Centexbel/VKC, essenscia PolyMatters
Timescale: 2019-2022
Description of the action: OVAM will outsource research to detect problems for specific products. This may involve conducting new research, but also pooling already existing knowledge and experience. Construction applications will be researched as a priority, but not exclusively.

Action 25. We look for applications in which the use of plastic recyclate can be promoted.
Promoter: OVAM
Parties involved: Interafval, VVSG, denuo, Centexbel/VKC, essenscia, FPS Health, Food Chain Safety and Environment, FPS Economy, SMEs, Self-employed and Energy, the regional public services of Brussels and Wallonia
Timescale: 2019-2025
Description of the action: A ban on the use of waste bags not made from recycled plastics was introduced in Flanders through VLAREMA. We look for other applications in which the use of plastic recyclate can be promoted. If we find such applications, they will be anchored in legislation or in government procurement policies. We encourage frontrunners in industry to use recyclate in their value chain.
Reference to more (background) information: VLAREMA article on waste bags

Action 26. We explore the need for fiscal instruments to promote the marketing of plastic recyclate.
Promoter: OVAM
Parties involved: Interafval, VVSG, denuo, FPS Economy, SMEs, Self-employed and Energy, FPS Health, Food Chain Safety and Environment, the regional public services of Brussels and Wallonia
Timescale: 2023-2025
Description of the action: The market price for recycled plastics is not necessarily lower than that for virgin plastics. We examine whether the effect of the market price of plastic recyclate on the marketing of the recyclate can be countered by imposing conditions such as, for instance, a minimum content of recycled plastics, or whether the intended effect can only be achieved through the use of fiscal instruments, whether or not in consultation with other Regions or the federal level.

Action 27. FostPlus and Valipac guarantee the marketing of plastic recyclates.
Promoters: FostPlus, Valipac
Parties involved: OVAM, denuo, essenscia , IRPC
Timescale: 2019-2024
Description of the action: FostPlus and Valipac set up pilot projects to boost the marketing of plastic recyclates, promote confidence in recyclates, exchange knowledge, etc., and scale up these projects. A market is secured through this scale-up. This action will also be included and anchored in the respective accreditations.

Action 28: The chemical and plastics converting industries in Flanders help to boost the marketing of plastic recyclates to consolidate a sustainable plastic recycling market.
Promoter: essenscia
Parties involved: OVAM, denuo, knowledge institutes, Catalisti
Timescale: 2020-2025
Description of the action: With their know-how and additional investment in research and innovative recycling capacity (both mechanical and chemical recycling), it should be possible to drastically increase the use of plastic recyclate by 2030, taking into account any legislative constraints.

5.3.2 Creating adequate regulations for recycled content

One cannot tell from an end product itself whether the raw material used is either virgin or recycled. This needs to be determined indirectly (e.g. through audit). Demonstrating **'recycled content'** is an important element in enforcing it, especially when this is coupled with financial incentives.

No European or Belgian legislative framework is currently in place for recycled content, but preparatory studies have already been conducted. The Product Policy division of the Federal Public Service Health, Food Chain Safety and Environment commissioned a study in 2015 to set up a legal framework for defining recycled content. A calculation methodology was established that can be used for certification. The European standardisation organisations CEN and CENELEC also considered a generic standard for defining and measuring the content of recycled materials in an item.

On the other hand, a number of product and company certification systems are in place worldwide that address certain aspects of recycled content. These institutions do not, however, necessarily use the same definition, standards or methodology for determining recycled content. Moreover, they are mostly expensive. On top of that, the certificates or labels are virtually unknown to consumers.

QA-CER is a quality assurance system that offers guarantees for the use of recyclate in terms of both the recyclate content and the quality of the final product containing plastic recyclate. The certification is done by an independent certification body, i.e. the Belgian Quality Association (BQA). A three-level certification is possible:
(1) system certification
(2) system and product certification
(3) system and product certification with special focus on eco-parameters. In the latter case, the company must demonstrate, for example, that it has built in sufficient control systems to ensure that the recycled material or product with recyclate content conforms to REACH (EU Regulation 'Registration, Evaluation, Authorisation and Restriction of Chemicals') and RoHS (EU Directive 'Restriction of Hazardous Substances') requirements.

Action 29. We call for a harmonised and affordable verification system for recycled content at European/global level.
Promoter: Belgian Quality Association (BQA)
Parties involved: OVAM, Centexbel/VKC, FPS Health, Food Chain Safety and Environment, FPS Economy, SMEs, Self-employed and Energy, the regional public services of Brussels and Wallonia, representatives of the plastics value chain
Timescale: 2020-2022
Description of the action: We promote the QA-CER method, which was developed in Belgium.
Reference to more (background) information: QA-CER

5.3.3 Interfaces between substance, product and waste legislations

Furthermore, we find that there is still a gap to close between **waste and product policies**.

We want recovered plastics to be fully-fledged raw materials for plastics converters. This means that the recovered plastics must not only have the right properties to be able to be used in a high-quality application, but also that the recycler must be able to demonstrate that the material can be used without risk to humans or the environment.

Substance, product and waste legislations all contain provisions to protect humans and the environment. Different legislation applies depending on where a material is in the chain. Material streams are becoming more and more circular but harmonisation between substance, product and waste legislations is still lacking. Substance and product legislations take insufficient account of the fact that not only primary substances but recovered materials as well end up in the material chain. Recovered material is usually heterogeneous, has a variable composition and must be able to compete with primary material. The same level of protection for humans and the environment must be aimed for for both primary and recovered materials, but clarity is needed as to which legislation offers the most guarantees and when.

The plastics recycling sector in Flanders is faced with the same problems. We address these issues in order to create the necessary confidence in plastic granules. It is also important to indicate the extent to which chemical recycling techniques provide sufficient guarantees that substances of concern in recycled materials have been removed or converted into non-harmful substances, or meet acceptance criteria.

Action 30. We remove ambiguities and obstacles in REACH, resource declarations and product legislation regarding the use of recycled plastics, mainly for plastics from WEEE and the automotive and construction sectors.
Promoter: OVAM
Parties involved: FPS Health, Food Chain Safety and Environment, FPS Economy, SMEs, Self-employed and Energy, the regional public services of Brussels and Wallonia, representatives of the plastics value chain, the automotive and construction sectors, and Circular Flanders.
Timescale: 2020-2025
Description of the action: We consult with the federal public services to reach supported and safe solutions for the use of recycled plastics in view of the application of REACH in relation to ‘end of waste’.

5.4 COMMITTING TO KNOWLEDGE GATHERING AND DATA COLLECTION

We have the big task ahead of us of inventorying data to measure and evaluate the effects of the actions set out in this plan.

We need to obtain more information on plastic packaging and plastic products placed on the market in terms of quantities, their recyclability, the recyclable or reusable proportion and the content of plastic recyclates used, in addition to information on the waste quantities produced and their treatment.

We therefore consider data inventory and evaluation as ongoing tasks throughout the plan period. We are committed to proper and systematic data collection and reporting together with all the actors involved (public authorities, industry, civil society).

To this end, we rely primarily on data acquisition for purposes of the development of circular economy indicators, EU reporting and the evaluation of milestones in other Flemish plans.

Action 31. We strengthen our understanding of data related to plastic waste treatment both at home and abroad. In doing so, we evaluate the data for European reporting of effective recycling over time.
Promoter: OVAM
Parties involved: FPS Health, Food Chain Safety and Environment, FPS Economy, SMEs, Self-employed and Energy, the regional public services of Brussels and Wallonia, management bodies, denuo, Plarebel
Timescale: 2020-2023
Description of the action: OVAM will conduct a study in 2020 to identify the missing data and develop a methodology to collect this data. This methodology will be used to collect the missing data from 2021 onwards.

Action 32: We map the use of recycled plastics in end products and make a comparison with European figures.
Promoter: essenscia PolyMatters
Parties involved: Agoria, PlasticsEurope Belgium, OVAM
Timescale: 2020-2025
Description of the action: essenscia PolyMatters, Agoria and PlasticsEurope Belgium mapped the use of recycled plastics in end products in Belgium in 2019. The data was also compared with data at the European level. The data will be updated every two to three years. This will allow us to better monitor and evaluate the policy impact.
Reference to more (background) information: The Belgian plastics industry and the circular economy

Action 33. We support focused and multidisciplinary research into the problem of plastics in our rivers and seas, using existing international knowledge, methods and technologies.
Promoter: VLIZ
Parties involved: OVAM, Mooimakers, stakeholder platform 'Flemish Marine Litter Action Plan'
Timescale: 2019-2025
Description of the action: To this end, VLIZ is writing a policy information note (BIN) describing research gaps and needs.
To draft this BIN, VLIZ relies as much as possible on the expertise of coastal and marine scientists within the network of marine research groups in Belgium, and in Flanders in particular. International experts are also consulted if the topic requires it.
Reference to more (background) information: Flanders Marine Institute (VLIZ) website

Action 34. We monitor the presence of plastic litter on beaches under the OSPAR Guidelines.
Promoter: VLIZ
Parties involved: OVAM, Mooimakers, stakeholder platform 'Flemish Marine Litter Action Plan'
Timescale: 2019-2025
Description of the action: VLIZ monitors the Belgian beaches on a regular basis.
Reference to more (background) information: Flemish Integrated Marine Litter Action Plan

Action 35. We monitor the presence of microplastics in sediment, seawater, rivers, lakes and biota.
Promoter: VMM in collaboration with VLIZ
Parties involved: OVAM, Mooimakers, stakeholder platform 'Flemish Marine Litter Action Plan'
Timescale: 2020-2025
Description of the action: VLIZ monitors the presence of microplastics in seawater. After completion of Action 14 (end of 2021) it will be evaluated what a possible future VMM monitoring programme for measuring the presence of microplastics in sediment, rivers, lakes and biota should look like.
Reference to more (background) information: Flemish Integrated Marine Litter Action Plan

5.5 THE EXEMPLARY ROLE OF PUBLIC ADMINISTRATIONS IN A CIRCULAR PROCUREMENT POLICY

Public administrations are important buyers of various products and services and can act as levers for the creation of a market for sustainable products and services over time. Targets have already been set to integrate sustainable procurement into in-house policies at the federal, Flemish and municipal levels.

The Flemish public administration, for instance, aspires to make its public procurement 100% sustainable by 2020 and focuses on this in its Flemish Public Procurement Plan. Purchasers are encouraged, among other things, to include criteria regarding bio-based content, recycled content and recyclability in their specifications or to use procurement techniques that promote innovation towards greater circularity.

*Circular Flanders, together with Bond Beter Leefmilieu (BBL), The Shift and VVSG, launched the first Green Deal on **Circular Procurement** in Flanders in 2017. A wide range of participants (130) - from PCSWs to small and large companies to city councils and banks - entered into an agreement to launch pilot projects. Within this public-private learning network, participants received step-by-step guidance in setting up circular procurement projects. This was done in close consultation with the Innovative Public Procurement Programme of the Department of Economy, Science and Innovation (EWI) and the Agency for Facility Operations, which is the central point of contact for sustainable public procurement. This Green Deal was finalised in December 2019. The lessons learnt will be disseminated more widely among purchasers and suppliers in Flanders in 2020 and will also be shared within Europe, together with the experiences of other European frontrunners, through the European ProCirc project.*

Continued focus will be placed on the leverage function of public administrations in the coming plan period.

Action 36. We ensure an effective implementation of the Flemish Public Procurement Plan. We strengthen our knowledge of criteria for a circular procurement policy.
Promoter: OVAM
Parties involved: Learning Network 'Green Deal on Circular Procurement' together with The Shift, BBL, VVSG, Agency for Facility Operations, Department of Environment and Spatial Development, Flanders Chancellery and Foreign Office, essenscia
Timescale: 2020-2025
Description of the action: Apart from focusing on reuse, we are particularly committed to developing an objective assessment framework for the sustainability of bio-based and/or biodegradable products and to stimulating demand for products with plastic recyclates.

Action 37: We implement the ban on the use of disposable catering materials for all Flemish public authorities and local authorities.
Promoter: OVAM
Parties involved: Agency for Facility Operations, Department of Environment and Spatial Development, VVSG and other Flemish public authorities
Timescale: 2019-2022
Description of the action: The ban on the use of disposable catering materials was finally adopted by the Government of Flanders on 18 March 2019 and covers both beverages (by 2020) and the provision of prepared foods (by 2022). This applies to all Flemish public authorities and local authorities in their own operations and any events organised by them. We also propagate this ban to Flemish institutions located in Brussels.
Reference to more (background) information: VLAREMA article, OVAM interpretation document

6 MONITORING OF ACTIONS

6.1 STAKEHOLDER PLATFORM

A new stakeholder platform will be established for the plastics plan. This platform will monitor the progress of the actions and, if necessary, the adjustment of actions during the plan period of the plastics plan. The stakeholder platform will meet at least twice a year. At these meetings the promoter of each action will report on the progress of the results. OVAM will hold the secretariat (agenda and report) and chairmanship of this platform. A proposal for rules of procedure is being drawn up in preparation for the first meeting of the stakeholder platform.

The stakeholder platform may decide to establish working groups or sub-working groups during the plan period. They can also decide to add participating organisations and additional actions to this plan, while taking into account the activities in other stakeholder platforms and the progress of other plans or initiatives referred to in this plan, viz.:

- the stakeholder platform within the framework of the Implementation Plan for Household Waste and Similar Industrial Waste 2016-2022
- the stakeholder platform within the framework of the Action Plan on the Sustainable Management of Biomass Streams and Residual Biomass Streams 2015-2020
- the stakeholder platform within the framework of the policy programme 'Material-Conscious Construction in Cycles 2014-2020'
- the stakeholder platform within the framework of the Flemish Integrated Marine Litter Action Plan
- the Intra-Belgian Platform for Circular Economy
- stakeholder forums within the framework of extended producer responsibility, acceptance obligations, environmental policy agreements, litter policy and packaging policy 2.0.

6.2 BUDGETING

It is not easy to estimate the financial impact, because the actions in this plan can be implemented in the short term or be spread over a longer period of time, and the proposed actions will be promoted by various stakeholders (both public authorities and private partners).

The table below summarises the actions that are already ongoing or in preparation. No additional financial impact is expected for these actions.

Action	Description	Nature	Promoter	Ongoing	In preparation
1	Implementation of Single Use Plastics Directive	Policy	OVAM	X	
2	Implementation of the ban on the use of free plastic carrier bags	Policy	OVAM	X	
3	Promotion of reuse through IRPC prevention plans and Green Deal distribution sector	Policy + research	IRPC + OVAM		X

4	Support in the roll-out of a 'Food Packaging of the Future' roadmap	Research	Pack4Food in collaboration with Flanders' Food, VIL and Sens-NET	X	
5	Further development of circularity indicators	Research	OVAM		X
6	Impact on international ecodesign policy for EEE and automotive products	Policy	OVAM	X	
8	Research into effective and cost-efficient ways to clean up drift debris in Flemish waterways	Research	OVAM		X
10	Implementation of ban on use of fruit stickers	Policy	OVAM		X
11	Support for the phase-out of microplastics in various products	Awareness-raising	FPS Environment	X	
12	Encouraging companies to subscribe to Operation Clean Sweep to prevent pellet loss	Awareness-raising	PlasticsEurope + essenscia	X	
13	Research into government measures that help reduce pellet loss	Research	OVAM		X
14	Research into removal efficiency of microplastics in wastewater treatment plants in Flanders	Research	VMM	X	
15	Promotion of the selective collection of plastic packaging waste from out-of-home consumption	Policy	FostPlus	X	
16	New sorting analysis in 2020, which allows to identify and evaluate the improvement potential for the selective collection of household plastics	Research	OVAM		X
17	New sorting analysis in 2022, which allows to identify and evaluate the improvement potential for the selective collection of industrial plastics	Research	Valipac + FostPlus		X

18	Research into the potential and feasibility of the selective collection of plastics at demolition sites (Green Deal)	Research	OVAM		X
19	Monitoring of the transposition of the Basel Convention at European level	Policy	OVAM		X
20	Greater transparency on plastic waste quantities and destinations through the accreditation of Valipac	Policy	Valipac		X
25	Research into applications in which recyclate can be used	Policy	OVAM		X
29	Call for a harmonised and affordable verification system to declare the recyclate content in products	Policy + awareness-raising	BQA	X	
30	Closing the gap between waste and product policies	Policy	OVAM	X	
31	Increasing understanding of data related to plastic waste treatment both at home and abroad	Research	OVAM		X
32	Mapping the use of recycled plastic end products	Research	essenscia PolyMatters		X
33	Support for research linked to plastics in our rivers and seas	Research + policy	VLIZ	X	
34	Monitoring of plastic litter on Belgian beaches	Research	VLIZ	X	
35	Monitoring of microplastics in sediment, seawater, rivers, lakes and biota	Research	VMM in collaboration with VLIZ		X
37	Implementation of the ban on the use of disposable catering materials for public authorities	Policy	OVAM		X

Existing funding channels can be used to implement the new actions, such as:

- the investment fund of the Vlaamse Milieuholding (VMH)- the VLAIO research budget[29], including the research programmes of the Flemish spearhead clusters
- the Moonshot programme, which is an investment portfolio under the Flemish spearhead cluster for chemistry and plastics (Catalisti)

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- the grants of Circular Flanders through the launch of open calls. The Government of Flanders has invested approximately EUR 16 million in experimental circular economy projects since 2017
- grants from the Flemish spearhead clusters (Catalisti, Flanders' Food, SIM, VIL, Flux50 and the Blue Cluster)[30]
- the work plan 'Halve Euro' (Half a Euro). This programme is based on the half a euro per inhabitant which FostPlus pays each year to the Flemish Region to implement actions around packaging waste prevention and management. The 'Halve Euro' work plan is reviewed and revised annually by the office of the Minister responsible for Environment and Spatial Development, OVAM and FostPlus
- the Sustainable Materials and Energy Management Fund, which is an initiative of Indaver and the environmental organisations ABLLO and BBL
- grants for innovative projects of local authorities through OVAM
- etc.

Participation in calls of international funding programmes, such as H2020, LIFE, Interreg, JPI, etc. also provides a source of funds for conducting research within the framework of this plan.

An annual budget of EUR 150,000 will also be reserved for the outsourcing of research for which OVAM is designated as promoter, as part of the programme 'Applied Scientific Research on the Environment' or 'TWOL' for short.

Action	Description	Nature	Promoter	New	Potential funding channel
7	Research into the role of bio-based and biodegradable plastics in a circular economy	Research	OVAM	X	TWOL
9	Establishment of international collaboration with one of the five countries that are responsible for more than half of the influx into oceans	Research	OVAM	X	
21	Support for innovation projects	Research	VLAIO	X	VLAIO, spearhead clusters, Moonshot programme
22	Participation in innovative sorting and recycling techniques	Research	VMH, PMV, etc.	x	Finance companies, VLAIO, international projects
23	Research into the conditions for	Research	FostPlus, Valipac	x	Halve Euro, grants

29 see https://www.vlaio.be/nl/subsidies-financiering
30 see https://www.vlaio.be/nl/clusterorganisaties/het-clusterbeleid/speerpuntclusters

	having packaging waste recycled 100% in the EU by 2023				Circular Flanders
24	Research into the barriers in product and quality standards to using plastic recyclate in end products	Research	OVAM	x	TWOL
26	Research into the need for fiscal instruments to promote the sale of plastic recyclate	Research	OVAM	x	TWOL
27	Promotion of the marketing of plastic recyclates	Research + policy	FostPlus, Valipac	x	Halve Euro, Circular Flanders
28	Research of and investment in the use of recyclates in primary production	Research	essenscia	x	VMH, grants from spearhead clusters, Circular Flanders
36	Increasing knowledge of criteria for circular procurement policies, more specifically for bio-based products and products made from plastic recyclate	Research	OVAM	x	TWOL, VLAIO, spearhead clusters, Halve Euro

6.3 EVALUATION

A mid-term review will be conducted halfway through the plan period. The realisation of the actions as described in the plan will be weighed against the respective targets. Actions will be adjusted or new ones introduced, if necessary. It will also be examined at that moment which actions can be converted into quantitative targets.
A SWOT analysis will assess the extent to which bottlenecks have been eliminated at the end of the plan period, following the realisation of the actions and in view of the final evaluation of this plan. This assessment will also show which new actions need to be taken to make the plastics chain even more sustainable.

ANNEX 1: OVERVIEW OF THE MEASURES SUBJECT TO THE SUP DIRECTIVE

Overview of the specific measures for each plastic product subject to the SUP and the transposition deadlines, and an indication of whether this is being taken up at the regional or federal level.

Transposition by Regions							
Transposition by federal government							
Single-use plastic items	**Consumption reduction**	**Market restriction**	**Product design requirement**	**Marking requirements**	**Extended producer responsibility**	**Separate collection objective**	**Awareness-raising measures**
Transposition deadline: 3 July 2021, unless stated otherwise *Definition: EC releases guidance (possibly list of specific examples) no later than 3 July 2020*	> Overview of measures by 3 July 2021 > Measurable consumption reduction in 2026 compared to 2022 (on the basis of the method of the European Commission of 3 Jan. 2021; placed on the market)	Ban on placing on the market, by 3 July 2021	Product requirements/standardisation	Marking requirements concerning proper waste management options or negative impact on environment (litter) due to presence of plastics, in accordance with harmonised specifications of the European Commission of 3 July 2020, by 3 July 2021 + voluntary sector practices to duly inform consumers (no misleading information)	Covering costs by 31 Dec. 2024 for: > awareness-raising measures > clean-up, transport and treatment of litter in accordance with European Commission guidelines (except for tobacco products: 5 January 2023)	Separate collection for recycling (through deposit return scheme or EPR), according to European Commission monitoring method of 3 July 2020	Educating consumers about reducing litter with information on reusable alternatives and sound waste management + environmental impact + impact on sewage system
Food containers	X IRPC, management bodies incl. 1st report on 2022				X Incl. costs for public collection systems, transport and treatment		X
Cups for beverages	X IRPC, management bodies incl. 1st report on 2022				X Incl. costs for public collection systems, transport and treatment		X
Cotton bud sticks		X					
Cutlery, plates, stirrers, straws		X					
Sticks for balloons		X					
Balloons				X	X Incl. 1st report on 2022		X
Packets & wrappers					X Incl. costs for public collection systems, transport and treatment		X
Beverage containers, their caps & lids			X Attachment to bottle, in accordance with European Commission standard of 3 Oct 2019, by 3 July 2024		X Incl. costs for public collection systems, transport and treatment		X
Beverage bottles			X 25% from 2025 30% from 2030 in accordance with European Commission monitoring method of 1 January 2022, 1st reporting on 2023		X	X 77% of placed on the market by 2025 and 90% by 2029	X
Tobacco product filters					X Incl. 1st report on 2023		X
Sanitary items:				X	X		X
- Wet wipes					Incl. 1st report on 2022		
- Sanitary towels				X			X
Lightweight plastic carrier bags					X Incl. costs for public collection systems, transport and treatment		X
Fishing gear					X = Monitoring of placed on the market and collected cf. binding targets of Directive 2008/56/EC, incl. annual minimum collection rate for recycling, 1st report on 2022		X

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VIL: https://vil.be/

ANNEX 3: LIST OF ABBREVIATIONS

Term	Description
ABS	Acrylonitrile butadiene styrene
WEEE	Waste electrical and electronic equipment
Agoria	Belgian sectoral employers' organisation
BBL	Bond Beter Leefmilieu (umbrella organisation for environmental associations)
BIN	Policy information note
BIR	Bureau of International Recycling
BQA	Belgian Quality Association
Catalisti	Spearhead cluster for innovation in the chemical and plastics sectors
CE	Circular economy
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
Centexbel/VKC	Centre of expertise for the plastics converting industry
CINBIOS	SEO Services for industrial biotechnology Businesses
CIW	Coordination Committee on Integrated Water Policy
CO_2	Carbon dioxide
COMEOS	Representative of Belgian trade and services
DAR	Services for the General Government Policy
Detic distribution sector	Belgian-Luxembourg association of manufacturers and distributors of cosmetics, detergents, maintenance products, adhesives and mastics, biocides and aerosols
EEA	Electrical and electronic equipment
EEA	European Environment Agency
essenscia PolyMatters	Plastics division within essenscia; represents the broad sector of plastics and rubber production and treatment
EPS	Expanded polystyrene (isomo)
essenscia	Belgian federation of the chemical industry and life sciences
EU	European Union
EuRIC	European Recycling Industries' Confederation
EWI	Department of Economy, Science and Innovation
Febetra	Royal Federation of Belgian carriers & logistics service providers
Fevia	Belgian Food Industry Federation
Flanders' Food	Strategy-driven platform contributing to a more competitive, innovative and sustainable agri-food industry through innovation
FostPlus	Management body for promotion, coordination and financing of selective collection, sorting and recycling of household packaging waste in Belgium
VFG	Vegetable, fruit and garden waste
Denuo	Belgian federation of the waste and recycling industry
H2020	Horizon 2020
HAGBA	Household waste and similar industrial waste

HDPE	High-density polyethylene

Interafval	Partnership of the Association of Flemish Cities and Municipalities; all Flemish waste intermunicipal companies and other local authorities responsible for local waste policy
ISO	International Organisation for Standardisation
IRPC	Interregional Packaging Commission
IVP	Federation of manufacturers and importers of paints, varnishes, printing inks and fine art paints
IWG Bio-economy	Interdepartmental Working Group on Bioeconomy
JPI	Joint Programming Initiative
SME	Small or medium-sized enterprise
LCA	Life cycle assessment
NBN	Bureau for Standardisation
NIR	Near-Infrared Radiation
NMBS	Belgian National Railway Company
R&D	Research and development
OCMW	Public centre for social welfare
OECD	Organisation for Economic Co-operation and Development
OVAM	Public Waste Agency of Flanders
PA	Polyamide
Pack4Food	Consortium of Flemish research institutes and 36 companies involved in food packaging
PE	Polyethylene
PET	Polyethylene terephthalate
Plarebel	Non-profit centre of expertise promoting recycling of all plastic waste
PlasticsEurope	Association of Plastics Manufacturers
pmd	Plastic bottles and flasks, metal packaging and beverage cartons
PMMA	Polymethyl methacrylate
PMV	an independent organization owned by the Flemish government which supports economic investment initiatives in Flanders.
PP	Polypropene
PS	Polystyrene
PU	Polyurethane
PVC	Polyvinyl chlorid
QA-CER	Quality assurance system that provides guarantees on the use of recyclate, both in terms of recyclate content and the quality of the end product containing plastic recyclate
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Recupel	Management body responsible for the acceptance obligation of discarded electro-appliances and lamps
REFIT	Regulatory fitness and performance programme
RoHS	Restriction of Hazardous Substances
RWZI	Wastewater treatment plant
SAN	Styrene acrylonitrile resin
Sens-NET	Network of companies and knowledge partners active in food sensing and contact materials

TWOL	Applied scientific research on the environment
UNEP	United Nations Environment Programme
Unizo	Union of Self-Employed Entrepreneurs
UV	Ultraviolet
Valipac	Management body for industrial packaging
VBT	Association of Belgian Horticultural Cooperatives
ViA	Flanders in Action
VIL	Innovation platform for the logistics sector in Flanders
Vlaco	Not-for-profit organisation representing the policy and interests of the organic cycle in Flanders
VLAIO	Flanders Innovation & Entrepreneurship
VLAREMA	Flemish Regulation on the Sustainable Management of Material Cycles and Waste
VLIZ	Flanders Marine Institute
VMH	Flemish Environment Holding
VMM	Flanders Environment Agency