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Executive summary of the "3R Strategy"

for reduction, reuse, and recycling of single use plastic packaging

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ADEME
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Table of contents

Reducing single-use plastic packaging: a combination of technical and environmental challenges

Due to its intrinsic qualities and its potential for innovation, plastic is an omnipresent material in our daily lives. It is used for a very wide range of applications (packaging, construction, electrical and electronic equipment, automotive, medicine, aeronautics, etc.).

Plastic consumption is growing exponentially: **since 2000, the world has produced more plastic than in the previous 50 years.** This trend is amplifying, and this production could double again by 2040. As a result of this consumption, it is estimated that between 9 and 14 million tonnes of plastic are dumped into the world's oceans every year. Single-use plastic products and packaging are among the most common items found on EU beaches.

France consumes 4.8 million tonnes of plastics each year (of which almost 46% is packaging).

The widespread use of plastic in the packaging sector is due to its technical properties: light, malleable, resistant, and cost competitive, it can meet the most complex barrier properties, especially for the protection of food products. Plastic is now a dominant material in packaging (71% of household packaging contains plastic).

However, the vast majority of this plastic packaging is single-use and therefore quickly becomes waste.

Several factors explain the growing attention of citizens and public authorities on the subject: the short life span of single-use plastic packaging, the leakage and littering of some of this packaging (plastic bottles, plastic bags, etc.) in particular with out-of-home consumption, as well as their harmful consequences on biodiversity, and the potential risks on human health.

Plastic packaging is still not sufficiently recycled (about 27% in France), and in a few years it has gone from being a solution to a problem, particularly in developing countries where waste management is insufficient.

A relatively recent awareness, resulting in an acceleration of regulatory provisions and business mobilisation

Legislation and associated regulation, as well as the drive by companies to develop a circular economy for plastics have accelerated in recent years and reflect:

- a growing awareness of plastics related issues,
- the desire to act coupled with the emergence of new approaches (reduction, reuse) and solutions,
- the need to improve the existing situation by enabling effective and systematic eco-design and recycling for packaging.

Although the environmental issues associated with plastic packaging waste emerged in public policies as early as the 1970s, these have been particularly strengthened in recent years, as illustrated by the release in 2019 of the **European Directive on the reduction of the impact of certain plastic products on the environment** (known as the SUP Directive), and in 2020 the adoption in France of the **law against waste for a circular economy** (known as the AGEC law). Within the framework of **Extended Producer Responsibility** (EPR) for household packaging, the consideration of plastic packaging has been strongly reinforced since 2013 with the extension of sorting instructions, the recyclability of packaging and a scale-up of recycling channels. **Public funding mechanisms**

have been structured for several years and have been particularly strengthened as part of the "France Relance" plan, the 4th "future investments" plan and the "France 2030" plan. Private **initiatives** are also multiplying, driven by **national, European and international pacts on plastic packaging**.
Stakeholders (material and packaging manufacturers, producers, retailers, etc.) are now aware of the issues at stake and some are willing to take action to minimise plastic packaging, but the transition to action is complex.

A '3Rs' strategy to identify the measures needed to achieve the reduction, reuse and recycling targets

In this context, France has set a particularly ambitious and innovative target "*to achieve the end of single-use plastic packaging on the market by 2040".* This perspective is broken down into five-year reduction, reuse and recycling targets. Following an initial in-depth consultation of stakeholders (economic actors, industrial technical centres, NGOs, local authorities), carried out by the Ministry of Ecological Transition in 2020, a first five-year decree (known as the "3R decree") introduced the following targets for the period 2021 -2025:

- **20% reduction in single-use plastic packaging by the end of 2025, at least half of which should be achieved through reuse**.
- Aim for a **100% reduction of unnecessary single-use plastic packaging by the end of 2025**.
- Aim for 100% recycling of single-use plastic packaging by 1st January 2025 and, to achieve this, **an objective that all single-use plastic packaging placed on the market should have an operational recycling channel by 1st January 2025.**

Following on from this decree, the 3Rs Strategy for single-use plastic packaging is France's roadmap for achieving these targets. It is the result of a broad co-construction process conducted with the various stakeholders, and aims to determine the priorities for action, the concrete measures to be implemented, whether cross-cutting or sectoral, to achieve the objectives set by the 3R decree by 2025, as well as to explore the opportunities and constraints, the barriers and enablers associated with the perspective of the end of single-use plastic packaging in 2040, in order to set the first milestones and identify the steps to be taken and the barriers to be lifted in order to steer France in this direction.

The strategy report is organised in three parts:

- **Part 1,** devoted to a summary of the **environmental, economic and social issues** associated with single-use plastic packaging, a description of the **regulatory tools, support systems and** existing **initiatives**, as well as an introduction to the **framework and key definitions**.

- **Part 2**, which provides **a summary of the current situation regarding the use of single-use plastic packaging in France**, describes the **alternatives that contribute to the objectives of the decree and the main issues associated with their broader adoption**, proposes potential **2025 trajectories and 2040 perspectives broken down by sector**, and addresses a number of specific issues such as the **assessment of the environmental impacts of the alternatives**, **investment needs**, and the **articulation of the 2025 objectives and the 2040 ambition**.

- **Part 3,** proposing a cross-cutting and sectoral **action plan to achieve**

the 2025 objectives and the 2040 perspective.

Plastic packaging in France

Approximately **2.4 million tonnes of plastic packaging are put on the market in France each year.**

- **Half of this is 'household' packaging**, i.e. related to households consumption. The majority (over 80%) is consumed at home, the rest outside the home (mainly in the context of catering activities: meals and drinks to take away or consumed on the premises).

- **The other half is 'industrial and commercial' packaging, i**.e. used by professionals.

This packaging is present in all sectors. They meet the needs of various functions and therefore take a wide variety of forms: packaging for food products (beverages, ready meals, fresh produce, groceries, etc.) and non-food products (hygiene, cleaning, household equipment, pharmaceuticals, chemical products, etc.), grouping and transport packaging.

3R alternatives: reduce, reuse, recycle

The alternatives to single-use plastics are complementary, with different potentials and difficulties, and **more or less adapted to the different sectors and product categories. There will be no homogeneous deployment of the 3Rs**, but rather singular appropriations by the sectors according to their specificities and constraints (dry products, fresh products, products for out-of-home consumption, long-life products, etc.).

Reducing: in search of the "right packaging".

One of the objectives of the 3Rs Decree is to reduce the amount of unnecessary packaging placed on the market by 100% by 2025, defined as packaging that "does *not have an essential technical function, such as protection, health and product integrity, transport, or regulatory information support*". This objective calls for systematic consideration of the "essential technical functions" of packaging and how to fulfil them with the minimum or no packaging: elimination of packaging or packaging components, reduction of unit weight, development of large formats, concentration of products, are all approaches that can contribute to this objective. The reduction of unnecessary packaging is not a new area of work, but it needs to be made systematic by identifying and sharing best practices, applied by all through self-regulation or differentiated eco-fees. It should be noted that the highest potential for improvement seems to lie in sectors that have been less mobilised to date: distance selling, toys, DIY, medicines, household equipment, etc.

Reuse: a model to be (re)built

Several alternatives can contribute to the reuse objectives: reuse by the professional, bulk sales and refills.

Reuse by the professional consists of making the product available at the point of sale in reusable packaging: the packaging, once empty, is intended to be returned by the consumer to be cleaned, checked, and refilled by the professional. **The challenge of reuse is an organisational, massification and sanitary challenge**: an entire upstream and downstream industry must reorganise itself to manufacture reusable packaging, build the supply chain, cleaning infrastructure, collection points, ensure sanitary protection and practicality for the consumer.

It has a significant potential for deployment, and even **widespread use for industrial and commercial rigid packaging.** In this case, there is no need to reinvent logistics chains, as they already exist, the marketing challenges of differentiation are less prominent, and standardisation and massification are easier.

Pilot actions will be key to prioritise and build the model of reuse by the professional, taking into account the environmental and economic relevance of organisational choices.

Bulk sales are "*the sale to the consumer of products presented without packaging, in quantities chosen by the consumer, in reusable containers*[1] *".* It has been growing rapidly in recent years and its potential for deployment will be supported by the legislative provision requiring large retail outlets (greater than or equal to 400 square metres) to devote 20% of their sales area to products presented without packaging, including bulk sales, by 2030. In addition to the need to adapt sales outlets and the logistics chain, its deployment and generalisation must be accompanied by guarantees concerning health safety and good consumer information. To maximise its benefits, particularly environmental ones, particular attention must be paid to limiting product losses, the environmental impact of delivery packaging (by acting on its reduction and favouring its re-use) and the effective re-use of consumer packaging.

Refills are products packaged in a single-use intermediate package that can be used to refill a reusable package at home. They can be an alternative provided that the essential functionality is provided by the packaging remaining at home, that it is effectively reused, and that the refill is recyclable packaging.

Reuse therefore includes a variety of approaches that each sector must be able to adopt an adapt according to its specificities.

Innovation to replace plastic with other materials

While plastic is the predominant packaging material for most product categories, alternatives made of other materials are available: paper/cardboard, glass, metals, wood, etc. Substitution can be total or partial, and opens a major field of innovation, to adapt these materials and packaging to functional needs (barrier or mechanical) that are currently mainly met by plastic packaging or packaging components, to continue to improve their environmental impact, and in particular to keep guaranteeing their recyclability.

Improvement of recyclability, development of recycling channels, incorporation of recycled material

For many years, efforts to improve the collection, sorting and recycling of plastic packaging have mainly focused on bottles (the historic sorting instructions in France). The extension of sorting instructions to all plastic packaging, which started in 2015, is currently being finalised. With around 27% of plastic packaging recycled in 2018, France is still far from the European targets (50% by 2025).

There are still many challenges to be met:

1. **Ensure the recyclability of all plastic packaging by 2025** - today, about 65% of household plastic packaging has an operational recycling channel (in particular PET and PE). For 15%

1 Article L 120.1 of the Consumer Code

(PS/PSE, flexible PP, sealed or multi-layer PET pots and trays), channels are being developed and require a rapid and appropriate action plan to develop infrastructures and outlets for effective recycling by 2025. The remaining 20% (other resins and complex packaging or packaging containing elements that interfere with recycling) have no perspectives for an effective recycling by 2025, and will have to be the subject of eco-design efforts and the adoption of recyclable alternatives. Improving the recyclability of the plastic packaging waste stream also involves **rationalising the use of different plastic resins (reducing their number, better defining their respective applications)**.

2. **Accelerate the development of separate collection**. The performance of separate collection is still a major obstacle to increasing recycling. It is necessary to **reinforce and complete actions on all segments without exception** (in particular dense housing, public spaces and companies), **on all territories**, **as quickly as possible**, **in the same direction, by favouring the search for performance** while optimising costs, and by **relying on effective communication.**

3. **Continue the modernisation and adaptation of the sorting infrastructure**. The modernisation of sorting centres, already carried out on most of the units, should be complete by 2025. These developments are accompanied by a reflection, to be continued and deepened, on the articulation of the different sorting stages, as well as a pursuit of innovation, in particular for the recognition and separation of packaging by artificial intelligence methods (for image recognition) and the detection of digital watermarks. Future developments in the packaging waste arising are to be anticipated. The subject of small packaging needs to be addressed quickly.

4. **Securing recycling capacity in France.** To stimulate and secure investment in plastic packaging recycling infrastructure, it is necessary to provide visibility on the available material, and thus secure investment in adequate capacity in France. Concerted action is essential. It is necessary to specify the development potential of chemical recycling processes, with regards to technical, economic and environmental issues.

5. **Encourage the incorporation of recycled material.** Recycling industries need outlets to function and diversifying and stimulating demand is an important area of work. In particular, the return to packaging is an outlet to be increased, or even created for certain resins. This requires **the continuation of work on standardisation, quality control and traceability of recycled plastics, particularly for a return to food contact packaging.**

Beyond packaging: towards transforming our production and consumption models

If the 3Rs strategy is focused on packaging, part of the answers will probably lie in more systematic breakthroughs and changes in our product consumption habits (and, consequently, in their packaging). Reflections on the future of packaging must therefore integrate the cross-cutting issues of our

production and consumption models, and their articulation with future territorial dynamics: Climate change, new dynamics in the agricultural and agri-food sectors, industrial relocation, convergence of environmental and health issues, changes in diets (particularly towards a greater share of plant proteins), preparation of products at home, use of solid products, local supply and territorial approaches, are all future changes that it will be important to take into account in the construction of tomorrow's packaging roadmaps. Some of these trends are illustrated in the strategy.

An initial diagnosis and projection of the 3Rs potential: a necessary appropriation and implementation by sector

To provide the best possible support for the work of economic players in this complex transition, each major sector has been the subject of a factsheet. This includes an initial diagnosis of the current situation to be completed and expanded (type of packaging, share of plastics, main issues). On this basis, reduction, reuse and recycling potentials have been proposed for 2025 taking into account quantitative and qualitative elements: expected functionalities of packaging (food, health issues, etc.), current prevalence of single-use plastic packaging, supply chain, etc. Prospects for 2040 have also been identified (see Annex 2).
42 sectors were analysed, in a spirit of co-construction with a maximum number of professional federations and stakeholders. These sheets are annexed to the strategy and constitute a starting point for roadmaps that could be produced by professional organisations.

These roadmaps will also make it possible to problematise and make trade-offs (choice of resins, reuse solutions) and to model the necessary investments in packaging lines in greater detail.

10 lines of action to deploy alternatives

The action plan (Part 3) has been designed to address the main issues associated with the deployment of the alternatives described above. It is based on various levers, the most important of which are:

- **The development and implementation of sectoral roadmaps**, key to the success of this strategy. These roadmaps should aim to consider the specific characteristics of each sector and to define the strategic orientations and action plans to be implemented in order to contribute to the national objectives defined in the 3R decree. The relevant professional organisations have a major role to play in continuing the diagnosis of their packaging (needs, functionalities, value chain, industrial infrastructure, etc.); federating the players around common issues (common reuse pilots, choice of resins to be favoured, R&D on substitution materials); and launching structured collective actions to go to scale for the benefit of the environment and economic rationality. This work should be carried out in collaboration with the entire value chain: materials and packaging manufacturers, machine suppliers, waste management operators, recyclers, etc.

- **Extended Producer Responsibility (EPR)**, through the forthcoming revision of the specifications of the producer responsibility organisations in charge of household packaging, and the implementation of EPR for catering packaging. In particular, the

actions mobilise the support and incentive tools provided by the producer responsibility organisations. For industrial and commercial packaging (excluding catering), the strategy calls for not waiting for EPR to be implemented in 2025, by encouraging voluntary commitments to emerge now.

- **Continuing to improve and harmonise the regulatory and normative framework**, within the European framework, in order to secure the guidelines: protocols for assessing recyclability, health guarantees for reuse, quality and monitoring of recycled materials, characterisation of packaging functionalisation processes (coatings to create barrier and mechanical properties), bio-sourced plastics, and biodegradable and compostable plastics

- **Improving knowledge** on the environmental impacts of single-use plastic packaging, on the economic and environmental balance of alternatives, especially the most innovative ones, to better inform policy decisions.

- **The mobilisation of financial support mechanisms**, to accelerate R&D and investment, and to accompany skills improvement.

- **Conducting experiments and pilots** to test alternative solutions on a large scale.

- **Raising awareness among consumers**, whose expectations, needs and behaviour are key to encouraging the adoption of new consumption patterns.

- **Coordination**, necessary to ensure a coherent and rationalised deployment of alternatives, and to allow the pooling of certain means (technical, economic, human) particularly for reuse.

- **Monitoring and evaluation of the implementation of the strategy**, co-piloted by the Ministry of Ecological Transition and the Ministry of the Economy, Finance and Recovery, resulting in a **first interim assessment (end 2023)** and then a **final assessment (end 2025)** leading to an update of the strategy, accompanied by new five-year targets to be defined by decree.

The action plan is thus broken down into 10 thematic areas, within which several actions are identified and described, specifying the pilots, the stakeholders to be involved, and the deadlines:

Axis 1: Reduce unnecessary and excessive packaging
Axis 2: Support the rise of reuse
Axis 3: Develop alternative solutions
Axis 4: Ensure the recyclability of packaging placed on the market
Axis 5: Accelerate the increase in collection
Axis 6: Sorting - modernise, innovate and adapt
Axis 7: Ensure recycling capacity in France and encourage the incorporation of recycled material
Axis 8: Other transversal actions
Axis 9: Sectoral roadmaps
Axis 10: Organising the transition - Governance, monitoring and evaluation of the strategy

Annex 1: 3R potential by sector of activity

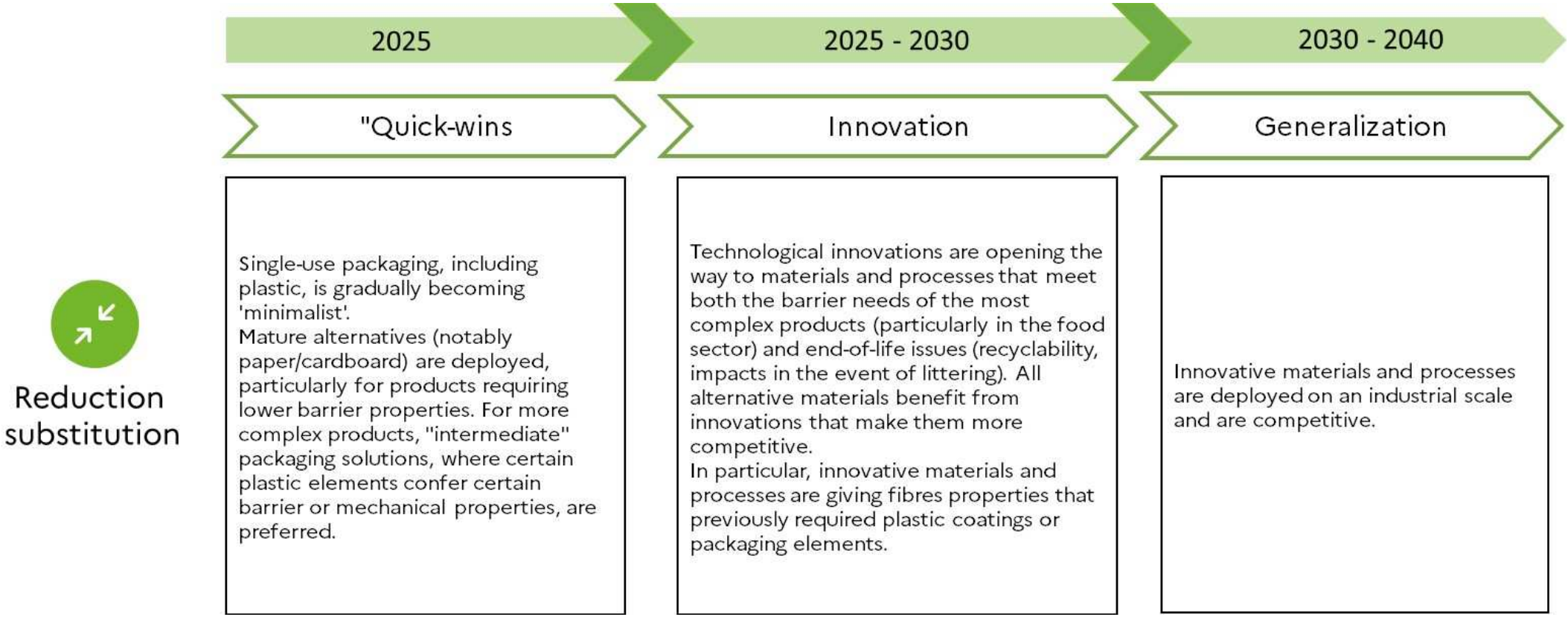
The table below summarises the 3R potentials by sector, which are also detailed in the sector sheets (see annex to the report). These potentials have been elaborated from the 3R potentials identified in the report "What 3R Potential by 2025?" and refined in the context of in-depth discussions with stakeholders.
It should be noted that the consolidation of these perspectives makes it possible to achieve the objectives of the 3R decree for 2025, i.e. a 20% reduction in the tonnages of single-use plastic packaging placed on the market, of which 50% through reuse, and 100% recyclable packaging. These potentials are indicative and may be subject to change or refinement in the context of the development of sectoral roadmaps.

Sector		Reduction potential (**including substitution, but** excluding reuse)	Reuse potential (reuse by producer, bulk sales, refills)	Recycling potential
Fresh unprocessed food	Meat	<5 %	<5 %	100 %
	Charcuteries	5 to 10 %	<5 %	100 %
	Fish	<5 %	<5 %	100 %
	Fruits and vegetables	>80 %	5 to 10 %	100 %
Fresh processed food	Fresh prepared meals (excluding commercial catering)	10 to 15 %	5 to 10 %	100 %
	Prepared meals from commercial catering	50 to 55 %	20 to 25 %	100 %
	Bakery / pastry (excluding long-life)	20 to 25 %	5 to 10 %	100 %
	Fresh and non-fresh dairy products	5 to 10 %	<5 %	100 %
	Frozen food	25 to 30 %	<5 %	100 %
	Pre-cut fruits and vegetables	20 to 25 %	5 to 10 %	100 %
Drinks	Still and carbonated waters	10 to 15 %	5 to 10 %	100 %
	Non-alcoholic soft drinks (excluding juices)	10 to 15 %	10 to 15 %	100 %
	Fruit juices and nectars	10 to 15 %	10 to 15 %	100 %
	Milk	5 to 10 %	<5%	100 %
	Alcoholic beverages	5 to 10 %	<5%	100 %
Sweet and savoury groceries, other	Rice, pasta, dried vegetables	45 to 50 %	10 to 15 %	100 %
	Flour, sugar, etc.	40 to 45 %	10 to 15 %	100 %

	Cereals, biscuits, preserved pastries	15 to 20 %	5 to 10 %	100 %
	Coffee, tea, chocolate	10 to 15 %	5 to 10 %	100 %
	Preserved foods	<5 %	<5 %	100 %
	Appetizers, snacks	15 to 20 %	5 to 10 %	100 %
	Soups	10 to 15 %	5 to 10 %	100 %
	Oils, vinegars, condiments	5 to 10 %	25 to 30 %	100 %
	Fruit compote, jam, jelly, marmalade and similar products	5 to 10 %	<5 %	100 %
	Confectionery products	10 to 15 %	5 to 10 %	100 %
	Specialty products	<5 %	<5 %	100 %
	Pet food	10 to 15 %	5 to 10 %	100 %
Hygiene/beauty		15 to 20 %	15 to 20 %	100 %
Cleaning products / chemicals	Household hygiene and maintenance products (non-professional)	10 to 15 %	10 to 15 %	100 %
	Chemical products for DIY, gardening, automotive	5 to 10 %	<5 %	100 %
	Professional non-food liquid products	5 to 10 %	5 to 10 %	100 %
Other non-food (textiles, equipment, pharmaceuticals etc.)	Textile	40 to 50 %	10 to 15 %	100 %
	Furniture	25 to 30 %	<5 %	100 %
	Toys and childcare articles	40 to 50 %	<5 %	100 %
	Tobacco	25 to 30 %	<5 %	100 %
	Electrical and electronic equipment	25 to 30 %	<5 %	100 %

	Pharmaceutical products	<5 %	<5 %	100 %
	Do-it-yourself, garden, car, bazaar, stationery, etc. (excluding chemical products)	50 to 60 %	<5 %	100 %
Logistics and e-commerce packaging	Delivery packages (e-commerce)	50 to 60 %	10 to 15 %	100 %
	Rigid transport packaging	<5 %	60 %	100 %
	Flexible transport packaging	10 to 15 %	<5 %	100 %

Annex 2: Key milestones 2025 -2040



Reuse

2025	2025 - 2030	2030 - 2040
Initiation	Diversification	Generalization
Reuse is available in all large and medium-sized stores, on still limited product ranges (e.g. reuse of professional beverages, bulk sales for dry goods, refills for hygiene and cleaning products), but its economic model is consolidating and the majority of consumers are adopting, for at least part of their purchases, these consumption patterns. It is rapidly expanding in the food services and industrial and commercial rigid packaging sectors.	Reuse has successfully scaled up in priority sectors, it is consolidating its business model and increasingly adopted by consumers. Having benefited from a clarification of its regulatory and normative framework, as well as investment and innovation, it is expanding the range of products for which it is available. It is becoming standard in the catering, industrial and commercial rigid packaging sector.	The reuse offer is widespread, competitive and attractive for consumers, who have integrated the new consumption habits associated with it.

Recycling

2025	2025 - 2030	2030 - 2040
Acceleration		Maturity
Despite reductions in the amount of plastic packaging, progress in recyclability, collection, sorting and recycling is leading to a sharp increase in the amount of plastics recycled, which still largely consists of single-use packaging. Each sector is rationalising packaging formats and compositions. The combined efforts of eco-design and the development of recycling channels are leading to all plastic packaging being recyclable, which improves the quality of the materials and allows for increased and diversified incorporation (including into packaging)	The quantities to be recycled, the quality of the materials, the demand for recycled plastic and its incorporation for applications with increasing added value are stabilising. The dialogue between upstream (packaging design choices) and downstream (sorting and recycling processes) is reaching maturity and makes it possible to anticipate changes in waste arising and adapt systems.	The amount of plastic packaging to be recycled is starting to decrease and the plastic waste stream is gradually shifting to a majority of waste from durable or reusable products. While volumes are decreasing, the quality of the deposits and of the raw materials for recycling continues to improve, which leads to a larger demand with higher added value; the share of virgin plastic of fossil origin is becoming a minority and is tending towards zero, in favour of recycled and biosourced plastics.

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