

Will Sweden Reach the Recycling Targets for Packaging 2030?





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2050 Consulting is a Swedish consultancy firm committed to supporting clients in driving sustainability transformation, with expertise in climate action and the circular economy.

NPA is Sweden's leading producer responsibility organisation, focused on advancing circular and traceable material recycling.

This is a shortened version translated into English.

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Photo: Näringslivets Producentansvar, Angelica Söderberg

1. Summary

The purpose with this report is to assess whether Sweden is likely to meet the EU's packaging recycling targets for 2030, based on measures already implemented as well as those expected to be in place by 2030. The analysis covers recycling measures for plastic, paper, glass, metal, and wood packaging, for both households and businesses (referred to in this report as non-household packaging). For each measure, a best-case scenario and a worst-case scenario have been calculated.

Two fundamental changes are needed for Sweden to increase overall packaging recycling rates: improved sorting at source and higher shares of collected materials being recycled.

Plastic packaging represents Sweden's greatest challenge in reaching the EU's recycling targets. In

2022, the recycling rate was 25 percent (21 percent for household plastic packaging and 33 percent for non-household plastic packaging), far below the EU's recycling target of 55 percent. In a best-case scenario, where all measures are fully effective, the recycling rate for plastic packaging could reach 51 percent by 2030. In a worst-case scenario, where current trends

continue, the recycling rate is projected to reach 37 percent. The analysis clearly shows that there is no silver bullet; instead, a combination of measures is necessary to achieve the EU target.

Several measures influence recycling performance across multiple types of packaging. The prioritisation of measures should therefore consider both the overall impact on total recycling rates as well as the effects on individual packaging types.

To meet the recycling targets for plastic packaging, approximately 80 percent of the material must be sorted at the source. This implies that households need to sort roughly twice as much packaging as they do today. By 2027, all municipalities in Sweden are required to implement curbside collection of packaging. Although this measure is expected to increase source sorting of household packaging, it will not be sufficient to achieve the EU targets.

Municipalities that implement differentiated waste fees in combination with enhanced communication efforts may further improve household sorting rates. A few larger waste management companies have installed, or are in the process of installing, Materials Recovery Facilities. These facilities will help reduce part of the remaining gap, although the quality of the recovered material may be somewhat degraded.

For non-household packaging, the source-sorting rate was below 40 percent in 2022. The main challenge is motivating businesses to sort packaging in a way that enables recycling, rather than sending the waste to incineration. Key measures include increasing incineration costs for fossil-based materials, as well as encouraging higher levels of sorting in sectors such as construction and healthcare. As of 1 January 2026, the producer responsibility organisation with the largest market share, is required to establish collection points for non-household packaging in each municipality, providing businesses with a cost-effective alternative to energy recovery.

Further action is also needed to improve the recycling rates of materials that are sorted at source. Several elements of the Packaging and Packaging Waste Regulation (PPWR) will play an important role, in particular the introduction of mandatory recycled-content quotas for plastic packaging and requirements ensuring that packaging is recyclable. The differentiation of packaging fees, together with the expansion of Svensk Plaståtervinning's high-quality sorting facility (Site Zero) is also expected to have a positive impact.

As previously noted, despite the implementation of several measures leading up to 2030, Sweden is unlikely to reach the EU's recycling targets for plastic packaging. Additional efforts will be required. The study identifies a substantial knowledge and information gap among both the general public and businesses. To significantly increase the sorting at source of packaging and achieve higher recycling rates, the following activities have been identified as potential steps:

- ▶▶ **Increased cooperation throughout the entire value chain.** Packaging producers, industries that use large volumes of packaging (such as retail and construction), property owners, and waste and energy companies, among others, must strive toward shared goals.
- ▶▶ **Enhanced support and guidance for producers and businesses.** Producers need clear information on how packaging fees are used and which design choices make packaging recyclable. Businesses that handle large volumes of packaging need targeted information on the importance of sorting at source and how packaging should be sorted to enable recycling.
- ▶▶ **Additional national mobilisation.** For the measures outlined in the best-case scenario to achieve maximum impact and effectively contribute to higher recycling rates in Sweden, a broad and coordinated national effort is needed.

This analysis concludes that it may be possible for Sweden to reach the EU's targets for packaging recycling. However, this would require existing and planned measures to deliver maximum impact over the remaining five years and to be complemented by additional measures, such as those outlined in chapter 8.

2. Basis for the Analysis

This report was produced on behalf of Näringslivets Producentansvar (NPA), Sweden's leading producer responsibility organisation, with the aim of analysing whether it is possible for Sweden to meet the material recycling targets set by the EU for 2030, based on measures already implemented as well as those considered reasonable to implement by 2030.

Sweden still has a long way to go to reach the material recycling target for plastic packaging, which is why the majority of identified and analysed measures concern plastic packaging. There is also a gap to be closed with regard to paper packaging.

The report includes a review of measures for the collection and recycling of plastic, paper, glass, metal and wooden packaging, for both households and businesses, as well as a quantification of the expected impact of each measure. To reflect the uncertainties associated with the calculations, a best-case and a worst-case scenario have been developed.

always report these packages, parts of these flows are not included in the calculations. However, packaging that private individuals bring into Sweden is not covered by the producer responsibility. The calculations only partially take into account packaging exported from Sweden. The lack of information about these flows is partly compensated for by waste composition analyses of household waste, but it still means that data on the volumes placed on the market are not fully reliable.

In the report, the term “**recycling**” refers to material recycling unless otherwise specified.

2.1. System Boundaries

The analysis is based on the following system boundaries:

- ▶▶ The intention of the analysis is to include all plastic, paper, metal and glass packaging placed on the market in Sweden, both for households and businesses, which is covered by extended producer responsibility in accordance with the Ordinance on Producer Responsibility for Packaging¹. Wooden packaging, which has been included in producer responsibility organisations' mandates since 2024, is also addressed.
 - ▶▶ The calculations include flows managed by NPA, as well as flows managed by other producer responsibility organisations and various market actors.
 - ▶▶ The calculation of packaging placed on the market also includes packaging not reported to any producer responsibility organisation, so-called free riders (see section 2.4 for more information). These volumes have been estimated (e.g. through waste composition analyses) and validated by comparison with data from comparable countries.
 - ▶▶ The calculations should include e-commerce of directly imported products (for instance through companies such as Temu and Shein), whose packaging is subject to producer responsibility. Since the companies do not
- ▶▶ The calculations include packaging discarded in residual waste and combustible fractions. From 2026, businesses are able to deliver sorted packaging waste to collection points provided by the largest producer responsibility organisation, meaning that some non-household packaging currently sent to incineration will instead be delivered free of charge to collection points.
 - ▶▶ Material recycling rates are based on the amount of recycled material in relation to the total amount of packaging placed on the market. According to the Packaging and Packaging Waste Directive 94/62/EC, the volumes of recycled material are calculated as the weight of packaging placed on the market in a given year in a Member State that enters recycling operations in which the waste materials are actually reprocessed into products, materials or substances².
 - ▶▶ The base year for the calculations is 2022. This means that the analysis is based on the packaging volumes from 2022. Consequently, measures that have been implemented after 2022 are quantified in the analysis, and calculations of their effects are based on actual outcomes where data is available. The measures have been calculated in the order in which they are assumed to be implemented.

¹ The ordinance (2022:1274) on producer responsibility for packaging sets different requirements for how producer responsibility organisations must collect packaging waste from households and from businesses, and this analysis therefore addresses measures targeting households and businesses separately.

² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01994L0062-20180704>

Targets recycling rate, packaging	2025	2030
Plastic	50 %	55 %
Paper and cardboard	75 %	85 %
Glass	70 %	75 %
Aluminium	50 %	60 %
Ferrous metals (steel)	70 %	80 %
Wood	25 %	30 %

2.2. The EU Packaging Recycling Targets

As part of the EU's Green Deal, 70 percent by weight of all packaging waste must be recycled by 2030. For each packaging type, the EU has set specific targets for 2025 and 2030 (see table). These targets are supported by strengthened regulation in the new Packaging and Packaging Waste Regulation (PPWR).

2.3. Producer Responsibility

To ensure that a company placing a product or packaging on the market also takes responsibility and pays for the end-of-life of the product, producer responsibility has been gradually introduced in Sweden and the EU. Today, Sweden has extended producer responsibility for eleven product groups.

Producers of packaging are defined as the companies that first make packaging available on the market, including businesses that³

- manufacture or import packaging.
- import packaged goods
- sell a package or a packaged product to an end user in Sweden from a country other than Sweden
- fill and use packaging for their products.

The producer responsibility for packaging covers primary packaging (consumer packaging), secondary packaging (transport packaging), and tertiary packaging (pallets and load carriers).

Producer responsibility requires companies to

- join an approved producer responsibility organisation before placing packaging on the market
- annually report packaging placed on the market to the Swedish Environmental Protection Agency
- establish internal control systems for the reporting process
- pay packaging fees to the selected producer responsibility organisation based on packaging volume and material type.

The first producer responsibility for packaging in Sweden was introduced in the 1990s. To manage this, producers cooperated to establish a company to administer collection and recycling, which became the foundation of FTI, Förpacknings- och Tidningsinsamlingen (the predecessor of NPA). The latest ordinance on producer responsibility for packaging in Sweden (2022:1274) entered into force on 1 January 2023. Among other things, this implied that municipalities became responsible for collecting packaging waste from households.

In 2024, NPA, as a producer responsibility organisation (PRO), held approximately 80–90 percent of the market share for household packaging. This means that 80–90 percent of the packaging reported under producer responsibility is handled by NPA. The market share varies by material type and over time.

³ <https://www.naturvardsverket.se/vagledning-och-stod/producentansvar/producentansvar-for-forpackningar/#E-2144918832>

2.4. Free Riders

There are producers who, either knowingly or unknowingly, do not fulfil their producer responsibility. These producers are referred to as free riders. Free riders are not affiliated with a producer responsibility organisation and therefore do not report the quantities of packaging they place on the market. Nor do they pay for the collection and material recycling of the packaging they place onto the market, resulting in other producers having to cover the costs associated with collecting and recycling of their packaging.

There are estimates of the packaging volumes attributable to free riders, but these figures are rough approximations. Through waste composition analyses and measurements of carbon dioxide emissions from energy recovery, rough estimates have been made of the volumes of household plastic packaging placed on the market by free riders. Estimating packaging volumes for businesses is considerably more difficult, as this packaging waste is handled by many different actors across various flows. In total, free riders are estimated to account for approximately 32 percent of the total volume of plastic packaging placed on the market, 24 percent of paper packaging and 37 percent of metal packaging.

The underlying reasons why some producers do not report their packaging can be both intentional and unintentional. Some are aware of the legal obligation but deliberately ignore it. Others are unaware that they have a producer responsibility, which requires them to report packaging placed on the market and pay the packaging fee.

Sanctions for businesses that fail to join a producer responsibility organisation, despite legal requirements, are minimal, amounting to a fine of SEK 30,000, i.e. approximately EUR 2,840. Under EU legislation, penalties should be dissuasive, which SEK 30,000 cannot be considered to be. In France, fines of up to EUR 75,000 may be imposed on companies that are not affiliated with a producer responsibility organisation, and in Germany, fines of up to EUR 200,000 are possible (along with a ban on further sales of products).

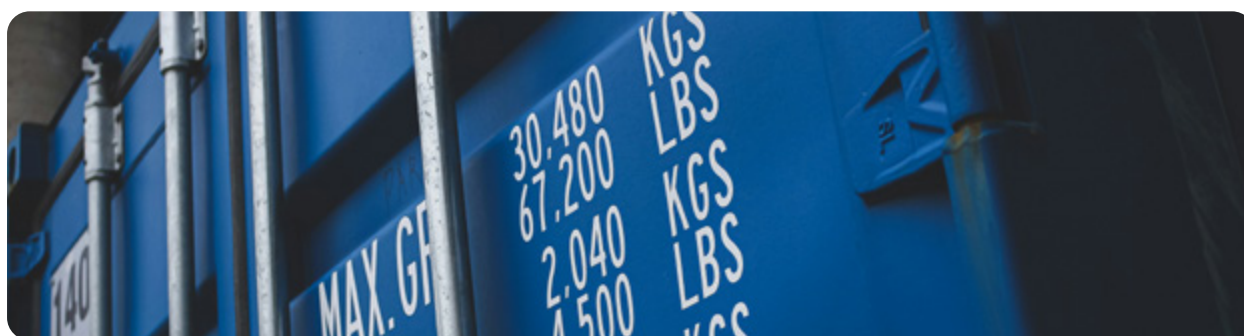
2.5. Method

The method used to compare the recycling rates in 2030 with those of 2022 is a so-called back-casting analysis. This kind of analysis takes the overarching goals as a starting point and identifies and quantifies known measures and strategies that can be implemented to reach them. In this way, measures are defined based on future needs. The result shows either that the goal can be achieved with the identified measures, or that there is a gap requiring additional actions. Back-casting is a suitable method for complex topics involving many different actors.

To establish a credible back-casting analysis for material recycling, the following is central:

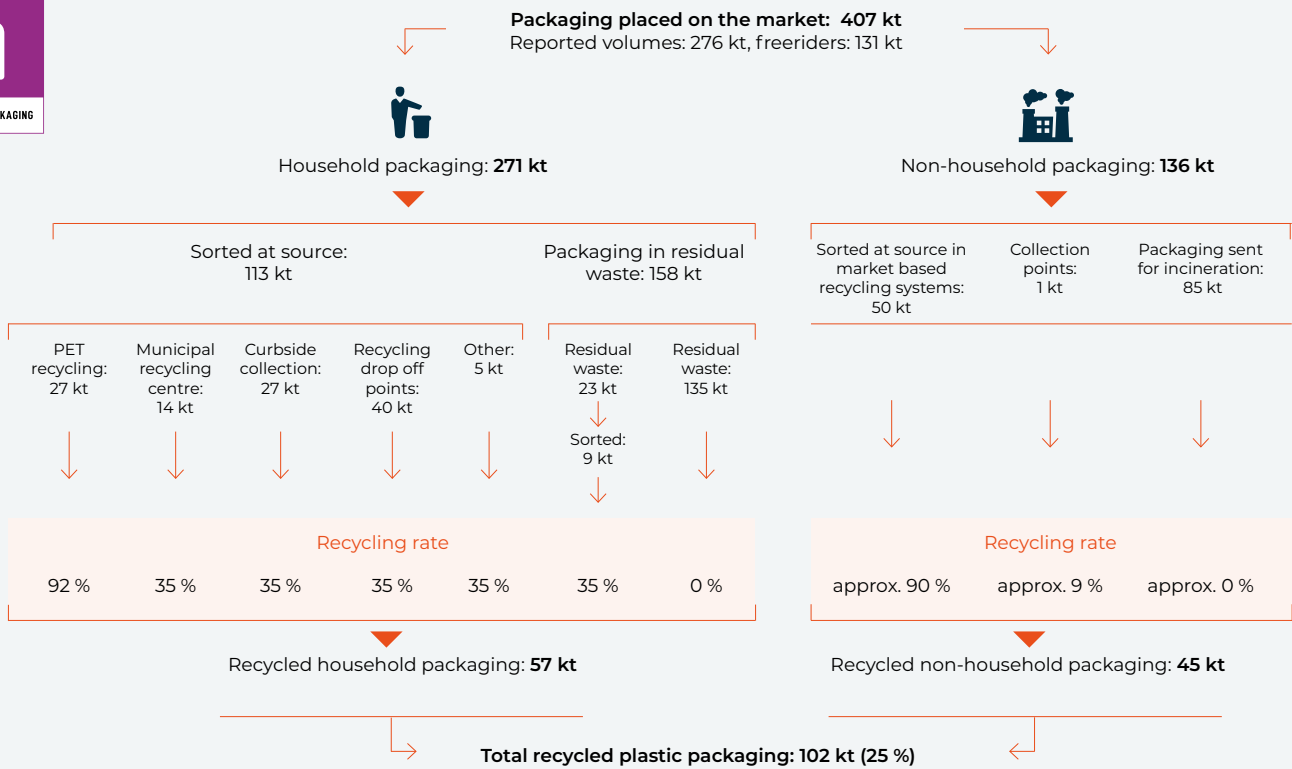
- As accurate data as possible on the volumes of packaging placed on the market.
- Information about the different steps that the packaging passes through in the chain from households or businesses to waste treatment.
- Quantification of the effects that individual measures may have.

The back-casting analysis was therefore initiated with a definition of the packaging flows for each material, including information on handling and packaging quantities, from when they are placed on the market until they undergo material recycling or incineration. This information was compiled using statistics from the Swedish Environmental Protection Agency and other actors. In parallel with this work, a desk study and interviews with around twenty stakeholders were conducted to assess the current state of material recycling in Sweden and to identify measures that have been reviewed and quantified by different actors in the value chain. For the measures identified, assumptions were then made to determine their potential to increase material recycling.



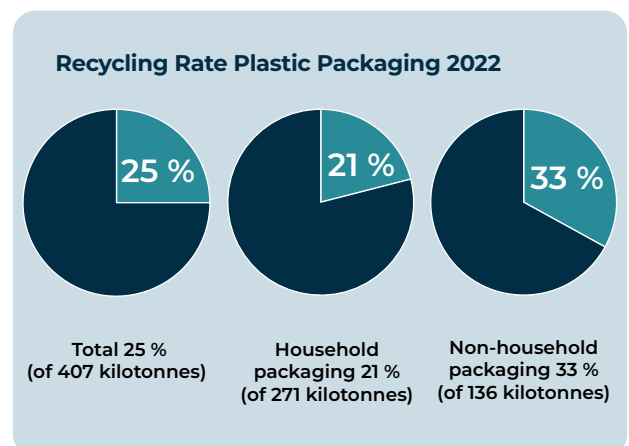


Plastic Packaging Flow, 2022 (kilotonnes)



3. Increased Recycling of Plastic Packaging

The calculations are based on plastic packaging flows compiled using data from NPA and the Swedish Environmental Protection Agency. The analysis is based on data from 2022. Approximately two-thirds of plastic packaging placed on the market consists of household packaging, while one-third consists of non-household packaging. Since 2022, there have been certain improvements. For instance, the recycling rate of the collected household packaging that undergoes sorting has increased by ten percentage points to 45 percent.

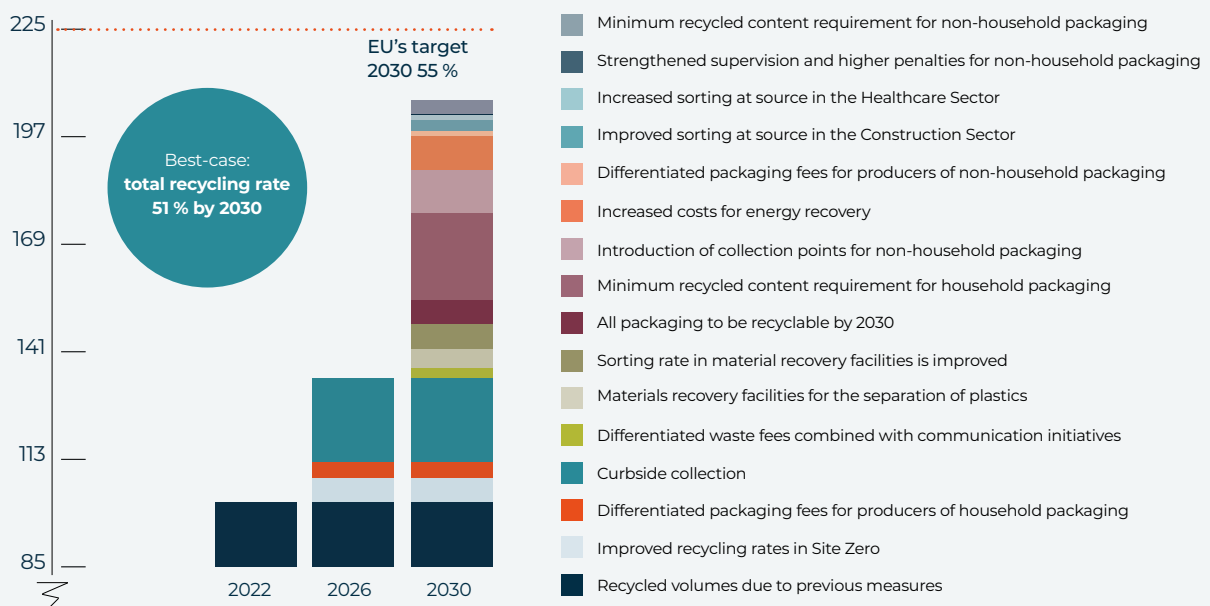


3.1. Measures – Household Plastic Packaging

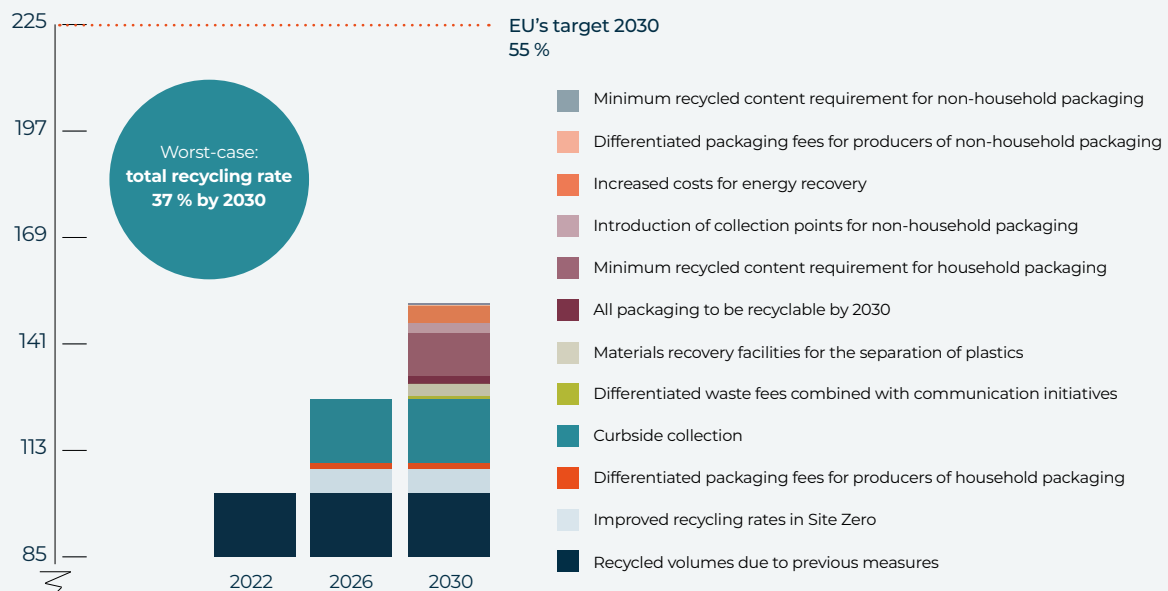
The analysis quantifies several measures aimed at increasing the material recycling rate of household plastic packaging. The effects of the measures are expressed either as changes in collection rates or as changes in the material recycling rate of the packaging material that has been collected, either from households or businesses. The effect of measures has been quantified and how different measures affect others is considered.

In a best-case scenario, the quantified measures result in a total material recycling rate for plastic packaging of 51 percent by 2030, which is four percentage points below the EU target of 55 percent. However, this is a scenario where all measures are fully implemented with a maximum effect. If the development continues at current speed, a worst-case scenario is more likely. The analysis shows that in a worst-case scenario, the material recycling rate only reaches 37 percent, corresponding to a gap of 18 percentage points relative to the EU target.

Changes in total volumes of plastic packaging (kilotonnes) **best-case**



Changes in total volumes of plastic packaging (kilotonnes) **worst-case**



3.1.1. Advanced Sorting Facility for Plastic Packaging (Site Zero)

In Sweden, the vast majority of all household plastic packaging has been handled by Svensk Plaståtervinning since they inaugurated their first sorting facility in 2019. Svensk Plaståtervinning is owned by five industry organisations and run a best-in-class sorting facility for high-quality plastic recycling. By the end of 2023 they expanded operations into the Site Zero facility with a capacity of approximately two hundred kilotonnes plastics per year, enabling high-quality sorting of twelve polymer types with a high degree of purity. There is also specific capacity to sort plastic packaging from materials recovery facilities.

45 %

The material recycling rate increases from 35 percent to 45 percent as a result of Site Zero.

3.1.2. Differentiated Packaging Fees for Producers

Packaging fees for plastic packaging have been differentiated based on recyclability since 2018. Packaging fees have increased substantially during the last couple of years, mainly to finance the Site Zero sorting facility and the mandatory implementation of curbside collection.

BEST-CASE
11 %

WORST-CASE
4 %

Increased material recycling rate for household plastic packaging due to differentiated packaging fees.

The effects of the radically increased packaging fees since July 2024 are not yet reflected in the figures on which this analysis is based. This is partly because no data is available yet, and partly because implementing new packaging designs takes time. Therefore, there is an expectation that the higher packaging fees for non-recyclable plastic packaging will incentivise design for recycling and improve material recycling rates over time.

3.1.3. Curbside Collection

Curbside collection must be implemented throughout Sweden no later than 31 December 2026. The reform has already been carried out to different extents in some municipalities. Avfall Sverige (the Swedish Waste Management Association) is a stakeholder and trade association with members from the waste management sector, for instance enterprises owned by municipalities.

Avfall Sverige collects statistics on waste management, and their review of the results of the curbside collection that had already been implemented in 2023⁴, show:

- ▶▶ 42 percent improved sorting at source for single-family houses.
- ▶▶ 20 percent improved sorting at source for multifamily housing.

According to these statistics, a full rollout of curbside collection in Sweden is expected to reduce the amount of packaging in residual waste by approximately 28 percent, which in turn means that household sorting at source increases by 71 percent.

BEST-CASE
79 %

WORST-CASE
64 %

Increased level of sorting at source for household packaging due to curbside collection.

⁴ <https://www.avfallsverige.se/media/dmqbrvlq/husha-llsavfall-i-siffror.pdf> and Avfall Sverige, PM: "Uppnådda resultat med fastighetsnära insamling av förpackningar"



BEST-CASE

5%

WORST-CASE

2%

Increased level of sorting at source for household packaging due to environmentally differentiated fees combined with communication initiatives.

3.1.4. Differentiated Waste Fees Combined with Communication Initiatives

When curbside collection is introduced, it is essential that waste fees provide incentives for increased source sorting of packaging. For environmentally differentiated fees to be effective, municipalities must address both the low level of knowledge among households regarding how and why packaging should be sorted, and the lack of sufficiently strong financial incentives for households to sort. A combination of differentiated fees and clear, motivating communication is far more effective than using only one or the other. Waste management companies have achieved 50 percent higher food-waste separation rates when combining environmentally differentiated fees with communication targeted at households.

For municipalities, property owners play a crucial role in reaching residents and enabling good access to sorting at source by providing clean waste rooms, maintaining sorting equipment in apartments, providing information, using nudging strategies, and by engaging residents in different ways.

In a best-case scenario, all municipalities work effectively with differentiated fees and communication measures, increasing the source-separation rate by 5 percent. In a worst-case scenario, municipalities representing around 40 percent of Sweden’s population work effectively with differentiated fees and communication measures, resulting in a 2 percent increase in sorting at source.

3.1.5. Materials Recovery Facilities for the Separation of Plastics

The introduction of materials recovery facilities (MRF) is an important measure to increase the material recycling rate in Sweden and for reducing greenhouse gas emissions from energy recovery. Two facilities are already in operation, and a few more are under development. Several large waste management companies are awaiting the introduction of curbside collection before deciding on investments in MRF. Others prioritise investments in carbon capture technologies (Carbon Capture Utilisation and Storage, CCUS).

In an initial phase, MRFs are assumed to separate 40 percent of the plastic packaging in residual waste and to handle approximately 25 percent of all residual waste generated in Sweden (in a worst-case scenario).

BEST-CASE

222%

WORST-CASE

138%

Increased level of sorting at source for household packaging thanks to the establishment of materials recovery facilities.

Forecasts from the facility that has been in operation the longest (Brista) show that around 75 percent of the plastics in residual waste could be separated within a few years. Therefore, the best-case scenario assumes an increased separation rate across all MRFs by 2030.

BEST-CASE

88 %

WORST-CASE

0 %

Increased level of sorting at source for plastic packaging thanks to improved technology in materials recovery facilities.

Materials Recovery Facilities versus CCUS

For some energy companies, the choice stands between investing in an MRF or in carbon capture (CCUS), where the captured carbon dioxide is either stored or used as a raw material, for example in fuel production. There is a risk that a singular focus on CCUS would hinder efforts to reduce dependence on primary, fossil-based plastics and would contradict the EU’s circular economy strategy.

Carbon capture also entails certain disadvantages. In addition to the technology being relatively costly to install, substantial amounts of energy are required for the capture, compression, transport, and storage of carbon dioxide.



Photo: Näringslivets Producentansvar, Jenny Brolin

3.1.6. All Packaging to be Recyclable by 2030

PPWR introduces the requirement that by January 2030, packaging must meet the criteria for “design for recycling” and be at least 70 percent recyclable. According to Svensk Plaståtervinning (described in section 3.1.1), approximately 75 percent of the packaging collected today is technically recyclable, although there is currently market demand for only about 55 percent of the recycled material. Svensk Plaståtervinning focuses on identifying new markets for the remaining 20 percent that could be recycled. In the worst-case scenario, the recycling rate for the plastic packaging handled by Svensk Plaståtervinning is expected to increase from 45 to 47 percent. In the best-case scenario, the corresponding increase is from 45 to 50 percent.

BEST-CASE

11 %

WORST-CASE

4 %

Increased material recycling rate for household packaging due to design for recycling.

3.1.7. Introduction of Minimum Recycled Content Requirement

Demand for recycled plastic material is too low, even though recycled raw material is often cheaper. For plastic recycling companies, the initial investments are relatively large. It is therefore important to achieve higher volumes of recycled plastic packaging so that producers can reach economies of scale. To increase long-term demand, the EU has decided to introduce a minimum recycled content target, which requires a certain share of recycled plastic in packaging.

BEST-CASE

27 %

WORST-CASE

18 %

Increased material recycling rate for household packaging due to the minimum recycled content requirement.

⁶ <https://www.regeringen.se/contentassets/01fe464f3acb46f5ad0f2e6e3953dc30/reformering-av-avfallslagstiftningen-for-okad-materialatervinning-och-for-mer-cirkular-ekonomi.pdf>



It is assumed that for some of the recyclable packaging received by Svensk Plaståtervinning for which there is currently no market, a market will emerge once the requirements are introduced in 2030. In a best-case scenario, the recycling rate is assumed to increase from 45 percent to 57 percent. In a worst-case scenario, the recycling rate is assumed to increase from 45 percent to 53 percent.

3.1.8. Non-quantified Measures for Household Packaging

New EU regulations, for example those introduced under the PPWR, will affect the volumes of plastic packaging placed on the market as well as the ability to recycle them. Several of these measures will not have any impact within the time frame of this report (up to 2030) or are not expected to have a significant effect on the recycling rate.

- ▶▶ The EU has set a target to reduce the number and size of packaging per product to decrease packaging waste. This may impact the volumes of plastic packaging placed on the market but will not in itself impact the recycling rate.

- ▶▶ Bans on certain single-use packaging may lead to reduced packaging volumes placed on the market but are not expected to have any effect on the recycling rate for plastic packaging.
- ▶▶ Requirements for reusable packaging may contribute to higher recycling rates, but given the structural changes required, this is not expected to have any effect by 2030.
- ▶▶ Separate collection of packaging in squares, parks and other popular public places shall be introduced in all municipalities by 2026. Although this measure may lead to increased volumes of sorted materials, there is a risk that these materials will be highly mis-sorted and contaminated and therefore not possible to recycle.
- ▶▶ Clearer labelling of packaging through a harmonised system is a key component for ensuring that several of the measures described in the report become as effective as possible and result in correct sorting at source. However, harmonised labelling is not assumed to have a significant effect on sorting at source on its own.



3.2. Measures – Non-household Plastic Packaging

According to Swedish law (the Waste Ordinance), businesses that generate packaging waste must sort this separately from other waste. This should be done at the location where the waste arises. Recycling of non-household packaging currently takes place in an open market. This has resulted in well-functioning recycling systems in certain areas where high-quality materials with market value circulate on commercial terms. However, due to fragmented material streams, geographically dispersed volumes, and the economic advantages of energy recovery, the free market has also led to massive quantities of material being sent to energy recovery despite being highly recyclable.

The proportion of free riders for non-household packaging is exceedingly difficult to estimate. There is also limited information on the sectors that use the largest volumes of plastic packaging and what happens to it when it becomes waste. In this analysis, measures have been examined for plastic packaging within the construction sector, restaurants and conference services, healthcare and elderly care, and to some extent industry.

3.2.1. Introduction of Collection Points for Non-household Packaging

From 2024, businesses have the right to hand over sorted packaging waste free of charge at collection points

(by 2026 there should be at least one in each municipality), which makes this option more economically attractive than sending the material for incineration. By offering an alternative to incineration, collection points will also make it easier for district heating plants to maintain a ban on receiving sorted material. Coordination between collection points will be essential to ensure that material streams can reach sufficient volumes.

Packaging materials that have an economic value will primarily be sold by businesses to market actors who are willing to pay for the material. Packaging with no economic value is expected to be delivered to collection points or, alternatively, sent to energy recovery (especially when the material is not sufficiently well-sorted). Today, it is assumed that 85 kilotonnes of plastic non-household packaging are incinerated. NPA estimates that of this material, 50 kilotonnes will be directed to collection points once the system is fully implemented and awareness of the service is sufficiently high. It is likely that the material collected at collection points will be of low quality, and in a worst-case scenario only 20 percent of the plastic packaging is assumed to have sufficient quality for material recycling. In a best-case scenario, half of the material delivered to collection points is assumed to go on to material recycling. For the sorted material, the same material recycling rate as for household packaging today is assumed, i.e., 45 percent.

3.2.2. Increased Costs for Energy Recovery (Incineration)

Swedish energy companies must purchase emissions allowances (EU ETS) for the carbon dioxide emissions caused by the incineration of fossil materials. Several waste companies have in recent years introduced environmentally differentiated fees based on the plastic content of the waste. These fees will increase gradually, partly due to rising costs of emissions allowances.

Higher gate fees for incineration improve cost parity for recycling and increase the share of material that is recycled. In a best-case scenario, 20 percent of the plastic packaging in residual waste that remains after the introduction of collection points is assumed to be directed to further treatment. In a worst-case scenario, 10 percent is assumed to go to further treatment.



Increased level of sorting of non-household packaging due to higher incineration fees and differentiated fees (based on plastic content in the delivered waste).

3.2.3. Improved Sorting at Source of Plastic Packaging in the Construction Sector

Each year, 150 kilotonnes of plastic waste (products and packaging) is generated in the construction sector. Less than one percent of this plastic is sorted into clean plastic fractions and recycled⁵. One way to increase material recycling in the construction sector is to focus on specific streams, such as EPS (polystyrene foam) and plastic wrapping. Stricter requirements from developers as well as from municipalities in connection with building permits are also needed. Strengthened



Increased material recycling rate for non-household packaging due to measures in the construction sector.

supervision and sanctions regarding the handling of construction plastics are central.

If no measures are taken in the construction sector (a worst-case scenario), the volume of plastic packaging going directly to incineration will not change. In a best-case scenario, where measures are implemented, 20 percent of the plastic packaging that currently goes to incineration is expected to be sorted for recycling.

3.2.4. Improved Sorting at Source and Recycling in the Healthcare Sector

Large volumes of plastic packaging in healthcare are sent to energy recovery. A key challenge is enabling staff to distinguish between plastic that is contaminated with infectious agents or pharmaceuticals, and therefore must be incinerated, and plastic that can be recycled without risk to the health of those handling the material. One advantage of targeting the healthcare sector is that staff are accustomed to following strict processes and routines.

If no measures are taken in the healthcare sector (a worst-case scenario), the volume of plastic packaging going directly to incineration will not change. In a best-case scenario, where measures are implemented, 10 percent of the plastic packaging currently going to incineration is expected to be sorted for recycling.

3.2.5. Strengthened Supervision and Higher Penalties

Increased supervision and tougher sanctions are essential for the other measures described to have an effect, for example in the construction sector and in the healthcare sector. In a worst-case scenario, no increased supervision or stricter sanctions are implemented, and there is therefore no effect. For sectors not analysed separately, it is assumed that increased supervision and higher sanctions could increase sorting by 10 percent in a best-case scenario.



Increased material recycling rate for non-household packaging due to measures in the healthcare sector.

⁵ <https://www.naturvardsverket.se/publikationer/6900/kartlaggning-av-plastfloden-i-byggsektorn/#:~:text=Drygt%20150%20000%20ton%20plastavfall,vi%20ska%20n%C3%A5%20v%C3%A5ra%20klimatm%C3%A5l>



3.2.6. Introduction of Minimum Recycled Content Requirement

The introduction of requirements for a certain share of recycled plastic in packaging is described in detail in section 3.1.7. The minimum recycled content requirement will affect non-household packaging in a comparable way. In a worst-case scenario, the recycling rate increases from 45 to 52 percent. In a best-case scenario, it increases from 45 to 58 percent.



Increased material recycling rate for non-household packaging due to increased supervision and higher sanctions (in business sectors excluding construction and healthcare).

3.2.7. Differentiated Packaging Fees for Producers

Between 2022 and 1 July 2024, the packaging fee for non-recyclable plastic in non-household packaging increased from SEK 0.03/kg to SEK 12.9/kg to finance the establishment of collection points in municipalities. The effects of the sharply increased packaging fees have not yet been reflected in the figures on which this analysis is based.

In a worst-case scenario, the current recycling rate for non-household packaging delivered to collection points is expected to rise from 45 to 47 percent (based on the worst-case scenario that 20 percent of plastic packaging at collection points will be sorted and recycled). In a best-case scenario, the recycling rate rises to 50 percent (assuming that half of the plastic packaging at collection points will be sorted and recycled).



Increased material recycling rate for non-household packaging delivered to collection points due to the minimum recycled content requirement.



Increased material recycling rate for non-household packaging due to differentiated packaging fees.

3.2.8. Non-quantified Measures for Non-household Packaging

Several regulatory frameworks affect the handling of non-household packaging but are not expected to have any significant impact on the recycling rate. There are also several potential measures that require new legislation and that are therefore not quantified within the time frame of this report (up to 2030).

- ▶▶ A more detailed sorting requirement for restaurants and cafés is not expected to have any notable effect. This is mainly because plastic has increasingly been phased out from single-use packaging due to bans on certain plastic items. In addition, a substantial proportion of material is mis-sorted at food service establishments, and packaging from some types of outlets is often too contaminated with food to be effectively sorted.
- ▶▶ Requirements to empty packaging improve the possibility of using the contents for biogas production, but the packaging itself often becomes too dirty and mixed, resulting in it being sent to incineration.
- ▶▶ Energy companies' control of incoming waste from the business sector could be improved. A significant change would be requiring waste holders to show how they have assessed that the material is not recyclable, and that energy companies more thoroughly inspect incoming waste. However, such changes require political decisions and are therefore not quantified in the analysis.
- ▶▶ Expansion of infrastructure for recycling non-household plastics, including improved storage capacity and washing facilities for collected plastic, is highlighted by the industry as important measures. Investment support enabling scaling up production of recycled material would strengthen capacity across the value chain. Such measures require national-level political decisions that are not currently on the political agenda, and no assumptions are made about positive effects by 2030.

- ▶▶ There are well-functioning systems for the reuse of non-household plastic packaging on the market today. These systems contribute positively to higher recycling rates. However, there is currently no information indicating additional commercial initiatives for reusable non-household plastic packaging, and therefore this type of measure is not assumed to have any significant impact by 2030.

3.3. General Measures – Plastic Packaging

- ▶▶ **Chemical recycling** - Breaking down plastic waste into its chemical building blocks is sometimes presented as a way to address the challenge of plastic fractions that cannot be recycled today. However, it is highly energy-intensive, and with current technology the same requirements apply regarding well-sorted fractions and pre-treatment as for mechanically recycled plastics. Chemical recycling is still at the pilot stage, and future methods may make the processes more energy-efficient and enable the recycling of mixed plastic streams. The potential up to 2030 is considered limited.
- ▶▶ **Downcycling** (recycling into lower-quality material) – Low-quality recycling limits the EU's ability to reduce the use of virgin materials in new packaging and products⁶. Because low-quality recycling downgrades the quality of the material and significantly

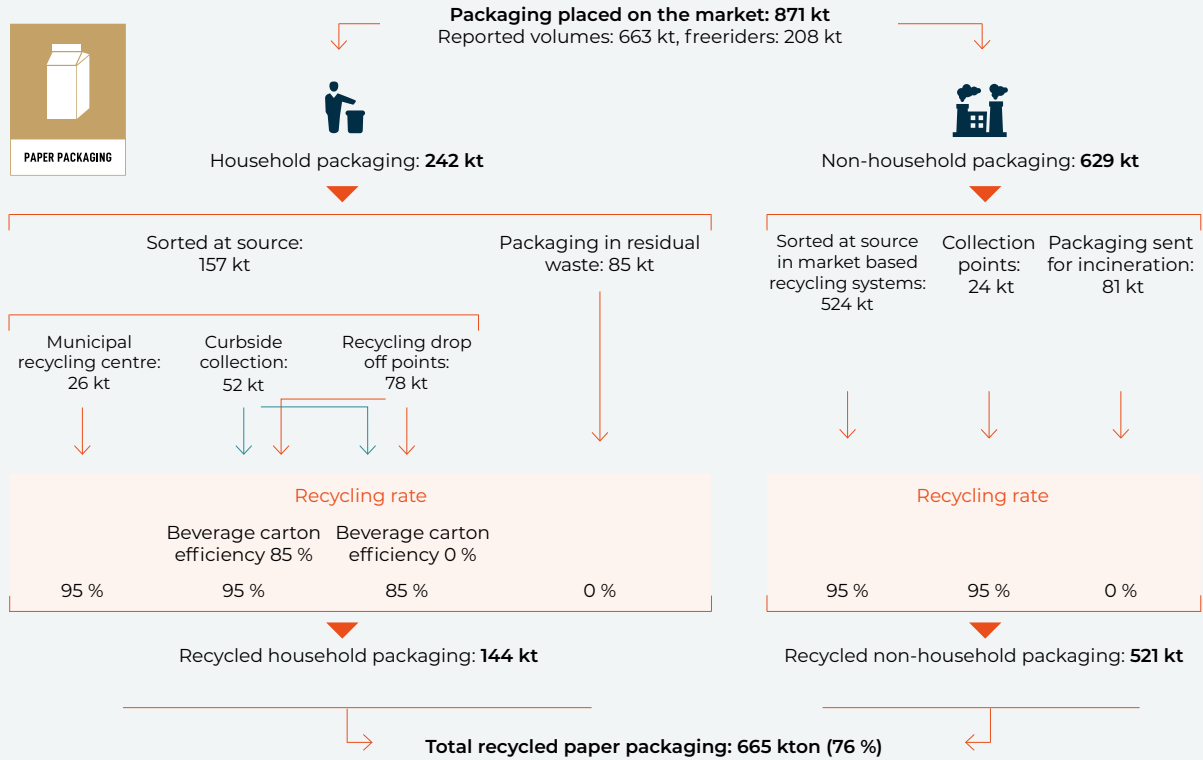
restricts its possible applications, this option is not included in the calculations beyond the extent to which it already occurs in the current system.

- ▶▶ **Fewer material types** – In principle, seven types of plastic are used for packaging. The challenge, however, is that there are many ways to blend and process them. When producing new packaging and products, the specification for plastic pellets is narrow, making it difficult to use recycled material as feedstock since such specific qualities cannot be guaranteed. Standardisation could help reduce the number of plastic types and improve the conditions for material recycling. Increased standardisation is unlikely to have significant effects by 2030 and is therefore not quantified in the analysis.
- ▶▶ **Tax on fossil plastics and CBAM** – A tax on virgin fossil-based plastics could help create the right economic incentives for using recycled raw materials. For such a tax to be effective, it would need to be introduced at the EU level, which is challenging because taxation is a national competence where each Member State makes its own decisions. Another possible measure to ensure equal treatment between plastic producers inside and outside the EU would be to include fossil plastics in the EU's Carbon Border Adjustment Mechanism (CBAM). It is unlikely that a fossil plastic tax will be implemented by 2030, and even if fossil plastics were included in CBAM in the short term, the effects are difficult to assess. Therefore, these measures are not quantified in the analysis.



⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52022SC0384>

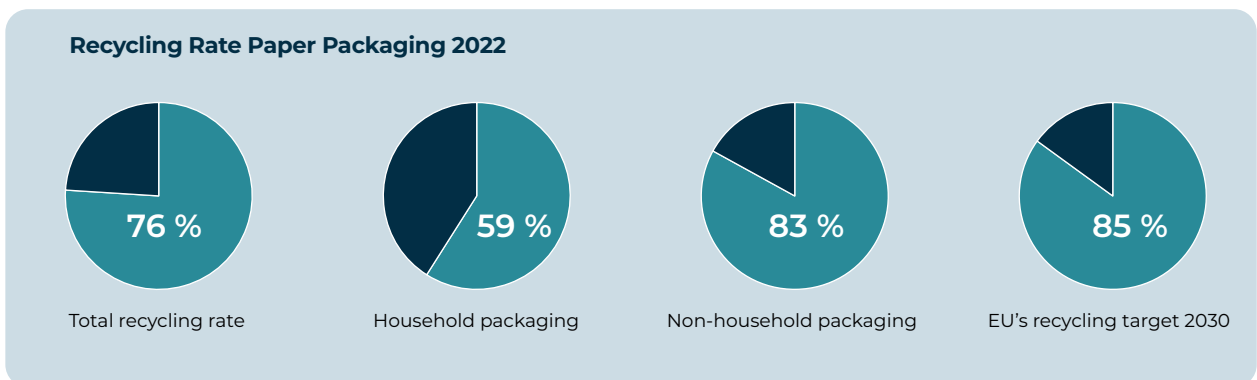
Paper Packaging Flow, 2022 (kilotonnes)



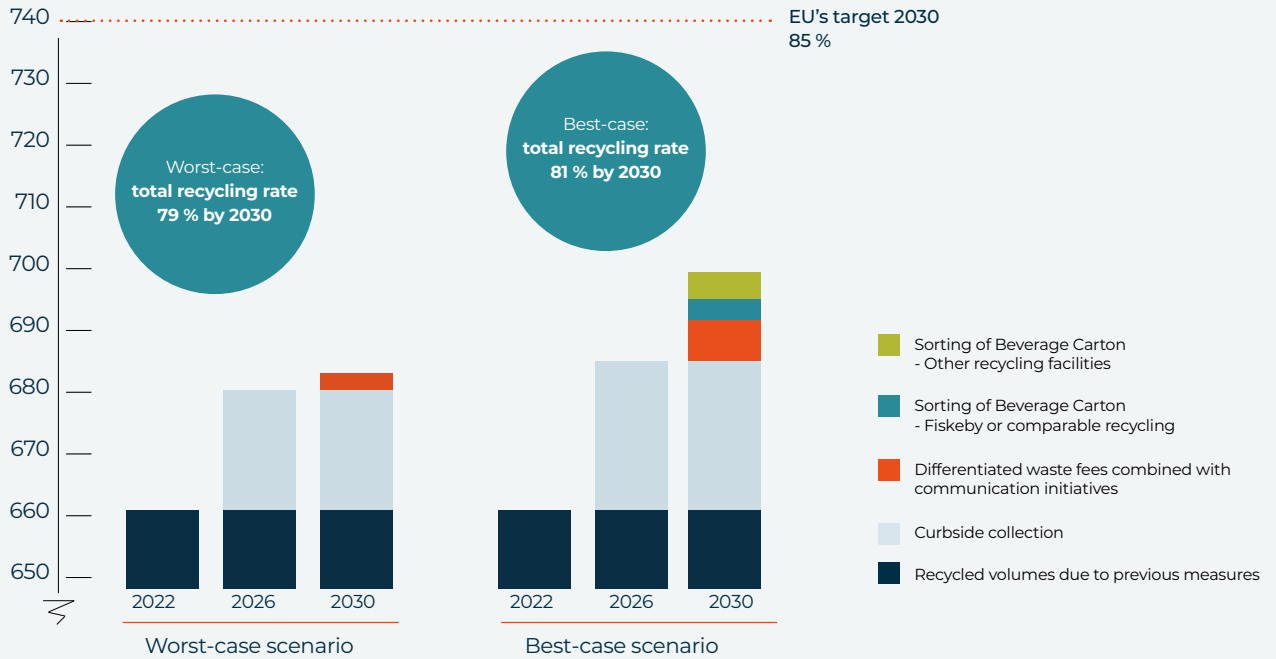
4. Increased Recycling of Paper Packaging

The calculations are based on paper packaging flows compiled using data from NPA and the Swedish Environmental Protection Agency. The analysis is based on data from 2022.

The EU recycling targets for paper packaging is 85 percent by 2030. Non-household packaging already reaches 83 percent today, while household packaging only reaches 59 percent.



Changes in total volumes of paper packaging (kilotonnes)



Except for beverage carton, virtually all paper packaging that is collected is recycled. This means that measures need to be taken within the sorting and collection of household packaging. In a best-case scenario, a total recycling rate of 81 percent can be achieved by 2030. In a worst-case scenario, the recycling rate reaches 79 percent by 2030.

that have already introduced curbside collection. It is uncertain whether paper packaging would be sorted to a greater or lesser extent.

4.1. Measures – Household Paper Packaging

4.1.1. Curbside Collection

The calculations are based on the average improvement in the sorting of packaging in the municipalities

4.1.2. Differentiated Waste Fees Combined with Communication Initiatives

When curbside collection is introduced, it is essential that waste fees create incentives for increased sorting of packaging. A combination of differentiated fees and clear, motivating communication is far more effective than implementing only one of these measures.

In a best-case scenario, all municipalities work effectively with differentiated fees and communication

BEST-CASE

22%

WORST-CASE

18%

Increased level of sorting at source for household paper packaging due to curbside collection.

BEST-CASE

5%

WORST-CASE

2%

Increased level of sorting at source for household packaging due to differentiated fees combined with communication initiatives.

initiatives, increasing the source-separation rate by 5 percent. In a worst-case scenario, municipalities representing around 40 percent of Sweden's population implement these measures, leading to a 2 percent increase in sorting at source.

4.1.3. Sorting of Beverage Carton

A beverage carton consists of approximately 74 percent cardboard, 21 percent plastic, and 5 percent aluminium. Some of the paper mills that receive paper packaging from the Swedish market can recycle beverage cartons, at least with respect to the paper fibres.

Paper recycling would benefit from these cartons being sorted separately. This could be achieved for instance

by freeing up a dedicated compartment within existing curbside collection, or by introducing a sorting facility capable of sorting all collected paper packaging into different fractions.

Household paper packaging currently consists of roughly 11 percent beverage carton. It is estimated that around half of the paper fibres in these packages are recycled today. In a best-case scenario, where separate sorting is introduced, the recycling rate for the paper fibres is expected to increase to the same level as for other paper packaging, estimated at 95 percent. In a worst-case scenario, separate sorting of beverage carton is not implemented, resulting in the recycling rate remaining at current levels.



Photo: Näringslivets Producentansvar, Veronica Foberg Gustafsson



Photo: Näringslivets Producentansvar, Jenny Brolin



Best-case scenario:

Improved recycling rate thanks to separate sorting of beverage carton:

- 4 percent for cartons previously sent to paper mills with an efficiency of 50 percent.
- 8 percent for cartons previously sent to paper mills with an efficiency of zero.

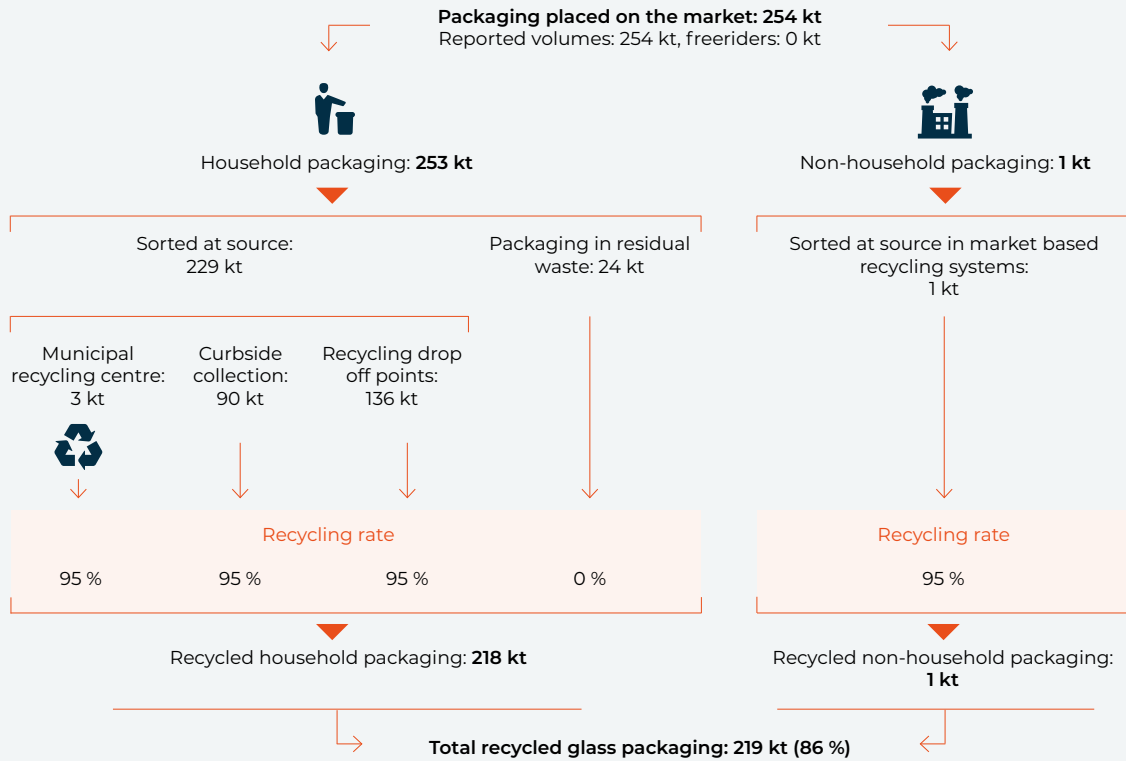


Worst-case scenario:

Unchanged recycling rate for beverage carton, remaining at approximately 50 percent.



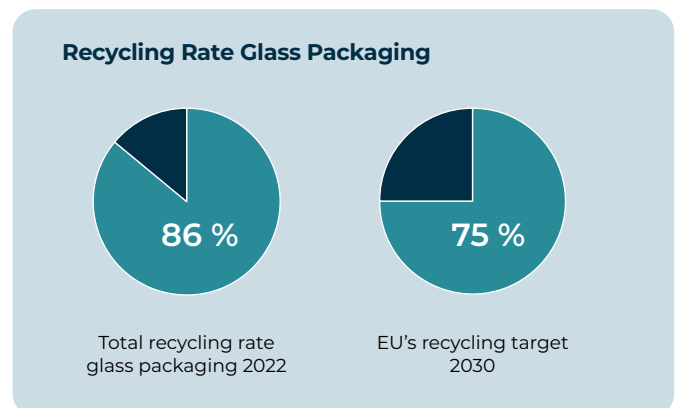
Glass Packaging Flow, 2022 (kilotonnes)



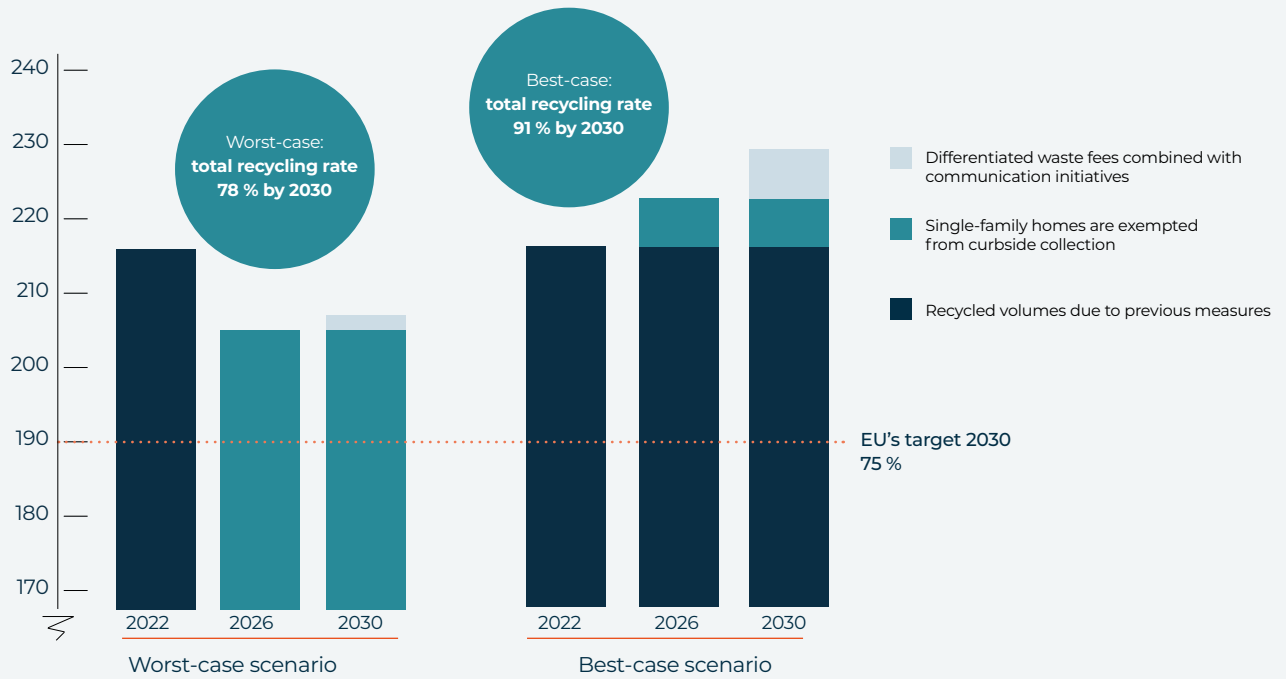
5. Increased Recycling of Glass Packaging

The EU recycling target for glass packaging is 75 percent by 2030. In Sweden, 86 percent recycling rate was achieved in 2022. There is very little glass packaging intended solely for business use. Glass packaging waste from businesses is therefore not included in the analysis. In Sweden, 60 percent of collected glass packaging is recycled into new glass packaging, 25 percent into glass wool, and 15 percent into foam glass.

The calculations are based on glass packaging flows compiled using data from NPA and the Swedish Environmental Protection Agency. The analysis is based on data from 2022.



Changes in total volumes of glass packaging (kilotonnes)



5.1. Measures – Glass Packaging

5.1.1. Curbside Collection

The quality of collected glass decreases in systems with curbside collection and may therefore lead to lower recycling rates for glass packaging. To avoid this, it is recommended that glass packaging should be excluded from curbside collection schemes and that glass receptacles at easily accessible collection points are made available. Studies from other countries show that split systems (where glass is collected at central

locations while other material fractions are collected close to the property) do not negatively affect the collection rate of the different fractions. The estimated effect of excluding glass packaging from curbside collection is based on Close the Glass Loop⁷.

5.1.2. Differentiated Waste Fees Combined with Communication Initiatives

As previously described, it is essential that municipalities' differentiated waste fees for residents incentivise increased sorting of packaging when

BEST-CASE

3%

Improved recycling rate thanks to collecting glass packaging via glass receptacles for single-family households (compared with full implementation of curbside collection): 3 percent.

WORST-CASE

-5%

Reduced recycling rate if all glass packaging is collected via curbside collection: -5 percent.

⁷ https://closetheglassloop.eu/wp-content/uploads/2021/10/CTGL_Brochure_digital.pdf

curbside collection is implemented. This will also have a certain effect on the collection of glass packaging. A combination of differentiated fees and clear communication is necessary. In a best-case scenario, all municipalities work effectively with differentiated fees and communication initiatives, increasing the source-separation rate for glass bottles by 3 percent. In a worst-case scenario, municipalities representing around 40 percent of Sweden's population undertake these measures, resulting in 1 percent increase in sorting at source.

5.1.3. Non-quantified Measures for Glass Packaging

- ▶▶ **Separate collection of packaging in squares, parks, and other popular public places** – There are indications that, in some cases, coloured and transparent glass will be collected in the same container, which reduces the quality of the material in subsequent processing.
- ▶▶ **Deposit-return systems for refillable packaging** – A challenge for Sweden is that such systems were almost entirely dismantled during the 2000s. Re-establishing them would require investments in infrastructure and processes.

BEST-CASE

3%

WORST-CASE

1%

Increased level of sorting at source for glass packaging thanks to environmentally differentiated fees combined with communication initiatives.





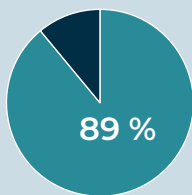
6. Increased Recycling of Metal Packaging

The EU recycling target by 2030 is 80 percent for ferrous metals packaging and 60 percent for aluminium packaging. NPA's calculations show that 89 percent of ferrous metals packaging was recycled in Sweden in 2022⁸. Aluminium packaging (including deposit-return cans) was recycled at a rate of 82 percent in 2022. The high recycling rate is primarily due to the substantial financial and climate benefits associated with recycling metal.

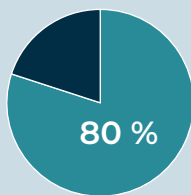
The calculations are based on ferrous metals and aluminium packaging flows compiled using data from NPA and the Swedish Environmental Protection Agency. The analysis is based on data from 2022.

A general challenge when calculating the recycling rate for metal packaging is the inflow of aluminium cans, primarily from Germany, as well as the outflow of both aluminium cans and steel food cans to Norway due to cross-border shopping.

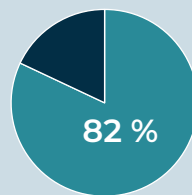
Recycling Rates Metal Packaging



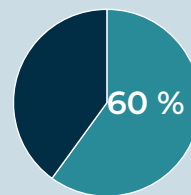
Total recycling rate ferrous metals packaging 2022



EU's recycling target ferrous metals packaging 2030



Total recycling rate aluminium packaging 2022

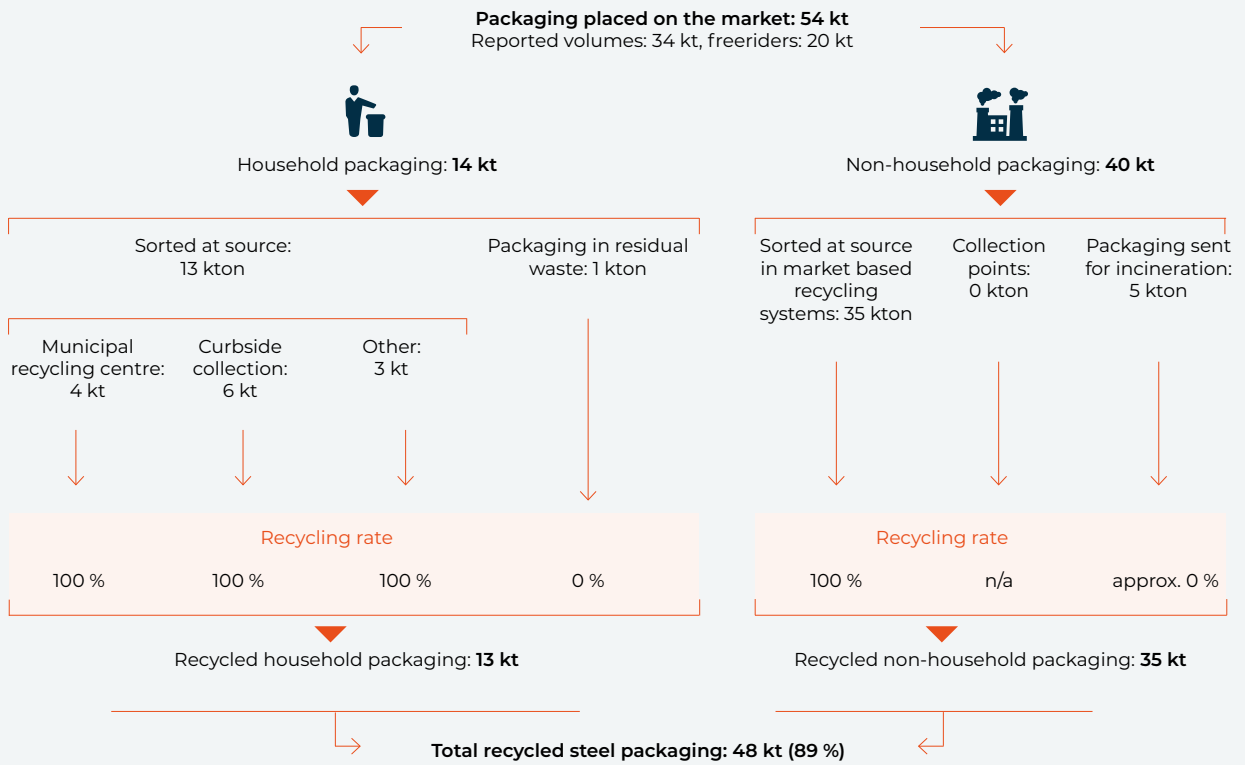


EU's recycling target aluminium packaging 2030

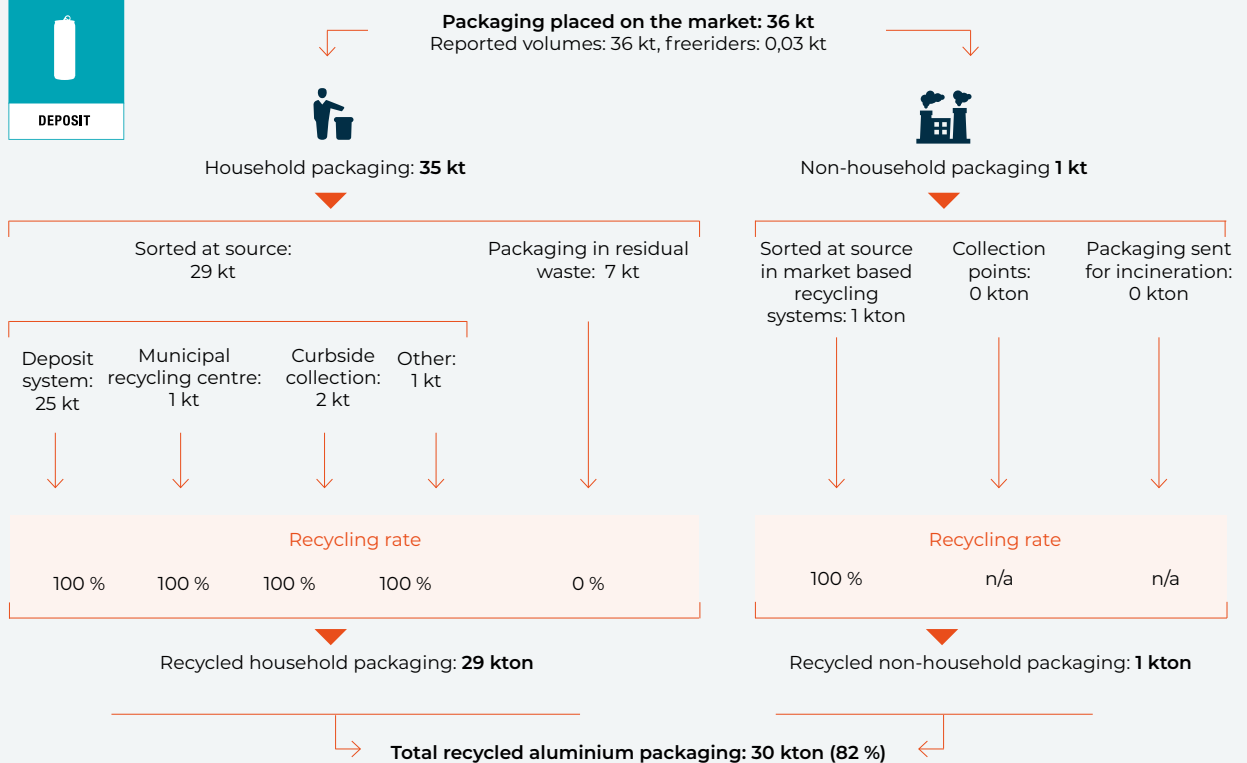
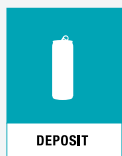
⁸ Metal packaging (waste) Sweden 2023, Hiestermann & Frömchen GmbH. Mandated by NPA.



Steel Packaging Flow, 2022 (kilotonnes)



Aluminium Packaging Flow, 2022 (kilotonnes)



Non-quantified Measures for Metal Packaging

The following measures have been examined but, for various reasons, have not been quantified:

▶▶ Curbside collection for metal packaging –

There are no reports showing how much metal is sorted in systems with collection at recycling stations compared with curbside collection. Due to the lack of reliable data, curbside collection is therefore not assumed to affect the sorting rate of metal packaging.

▶▶ Materials recovery facilities for separating metal from household residual waste –

Separating metal from household waste before incineration is relatively straightforward. Ferrous metals are in general recovered from the ash in incineration plants, but the quality is degraded. Aluminium cannot be recovered after incineration. It is uncertain how many municipalities in Sweden that already have some form of high-quality residual waste-sorting for metal waste, making it difficult to estimate the potential effect of further expansion of MRFs.

▶▶ Differentiated fees combined with communication initiatives – As with other packaging materials, a combination of environmentally differentiated fees and communication initiatives would improve household source-separation rates. However, statistics on the volume of metal packaging in residual waste are insufficient, making it difficult to estimate the effect.





7. Increased Recycling of Wooden Packaging

Since 2024, wooden packaging is included in the producer responsibility for packaging and must therefore be registered with an approved producer responsibility organisation, collected, and recycled to the greatest extent possible. A wooden packaging item that is reused should only be registered the first time it is placed on the market, to avoid multiple registrations of the same item.

The majority of wooden packaging placed on the market is not intended for households. Most is used by businesses for logistics purposes. Approximately 10 to 15 percent of Sweden's timber production is used to manufacture wooden packaging⁹. Wooden packaging may also include other types of packaging, such as wooden boxes for food like cheese or wine, but the most common types are various wooden pallets used for transport, as well as cable reels. One type of wooden

pallet is the EUR pallet, which is part of a circulating system and can be reused up to seventy times before being recycled. In Sweden alone, more than 30 million EUR pallets circulate each year¹⁰.

According to Statistics Sweden (SCB), 208 kilotonnes of wooden packaging were placed on the market in 2020, of which 11 percent was recycled. SCB itself notes that the volume placed on the market is likely underestimated (primarily due to free riders). No updated statistics after 2020 are available from SCB. According to NPA, 79 kilotonnes of wooden packaging were placed on the market in 2024. Even though the figures refer to different years, the discrepancy is so large that it is clear the statistics are unreliable.

The EU recycling target for wooden packaging is 30 percent by 2030.

⁹ <https://www.svensktra.se/siteassets/5-publikationer/pdfer/forpackningshandboken.pdf>

¹⁰ <https://www.svensktra.se/hallbarhet/tre-loften-for-en-hallbar-utveckling/forpackningar/>

8. Recommendations

Based on the interviews conducted, it is clear that there is a significant knowledge and information gap throughout the entire value chain and among both the general public and businesses. To ensure maximum recyclability and optimal sorting at source, several activities could be initiated. These should be coordinated and based on the same messaging platform but adapted to different target groups.

8.1. Collaboration

NPA does not have full control over the entire value chain. For the calculated measures to have full effect, it is essential that NPA and the other producer responsibility organisations cooperate closely with relevant stakeholders (municipal waste companies, energy companies, the construction sector, the healthcare sector, and packaging producers).

To reach the EU targets, a gap remains even if all calculated activities are implemented. To close this gap, NPA may need to further develop existing efforts and explore entirely new approaches. Some suggestions are outlined below.

8.2. Increased Support for Packaging Producers and Businesses

Large companies that package products often possess knowledge about materials and recyclability criteria, but smaller companies usually do not have such expertise in-house. It is crucial to distribute clear and detailed information, repeated regularly.

Information for packaging producers:

- ▶▶ What the packaging fees are used for and that paying the fee is a legal requirement.
- ▶▶ What criteria make a packaging recyclable.

Information for businesses generating packaging waste:

- ▶▶ Why they should sort at source.
- ▶▶ How packaging must be sorted to be recyclable.

There is a need for fast and reliable access to specialist expertise on packaging. This is currently seen as a bottleneck for producers and customers. Several business models could address this need, but there should be a connection to NPA to ensure coordinated efforts.

8.3. National Mobilisation

The major challenge, both for household and non-household packaging, is improving sorting at source. This is important for resource efficiency, ensuring Sweden meets the recycling targets, and reducing the share of fossil material in energy recovery, thereby lowering national greenhouse gas emissions.

Various actors carry out small-scale communication activities with differing messages. These initiatives are often short-lived and limited in scope, which reduces their impact. Media has also contributed to an inaccurate public understanding of recycling. Given the persistent shortcomings in sorting at source among both private individuals and businesses, despite long-standing legal requirements, extraordinary efforts involving many actors across society are required.

A recommendation for NPA is to explore the possibility of launching a national mobilisation effort lasting at least until 2030. Some proposed components of such a mobilisation include:



Communication directed at households

- New creative communication ideas. Reinforce messages about the recycling symbols increasingly found on packaging. These should form the basis of TV and social media campaigns. The Pantamera¹¹ campaign in Sweden is an example worth studying, a long-term, consistent message with evolving creative execution. Even though the deposit system itself provides incentives, the long-term communication of a consistent message has ensured widespread understanding of why bottles and cans should be returned.
- A long-term PR plan with a range of activities.
- A digital tool enabling households to use their phone camera to instantly determine how a packaging item should be sorted.
- Developing a high-quality home sorting kit (providing structure for sorting at home), distributed via property owners or sold through retailers.



Communication directed at producers and businesses

- A communication plan aimed at producers who pay packaging fees.
- Regularly highlighting producers who launch “good” packaging solutions.
- Regularly highlighting municipalities and property owners achieving high collection rates and low levels of packaging in residual waste.
- Partnership agreements with industry organisations, e.g.:
 - The Swedish Construction Federation (Byggförbundet), to reach construction companies
 - The Swedish Property Federation (Fastighetsägarna), to reach multi-family housing
 - The Swedish Association of Local Authorities and Regions (SKR), to reach healthcare, elderly care and schools

- The Swedish Waste Management association (Avfall Sverige), to reach municipal waste companies
- Municipal waste and energy companies
- The Recycling Industries Association (Återvinningsindustrierna), whose members handle non-household packaging.
- Collaboration with private actors involved in recycling of non-household packaging to develop space-efficient and smart sorting solutions (e.g., for construction sites).
- Collaboration with energy companies to increase understanding of the content of non-household waste sent to energy recovery, and how gate fees can be structured to minimise packaging being sent for incineration with the purpose to identify best-practice.
- Broad communication activities at trade fairs and national conferences (e.g. the Scanpack packaging fair in Gothenburg).



The above should be regarded as examples of elements that a national mobilisation could include. Key criteria for a national mobilisation effort:

- Must run long enough to have an effect (preferably until the target year 2030).
- Consistent messaging over time, motivating through both facts and emotion.
- Consistent visual identity to build recognition.
- Broad collaboration, engagement from many actors is essential, requiring willingness to build a shared platform.
- Focused work across multiple communication channels, reaching diverse audiences with consistent messages from different perspectives.

¹¹ The brand Pantamera is used by Returpack AB, that manages the producer responsibility for beverage packaging with deposits in the Swedish market.



To implement such a mobilisation, a business model with core funding and opportunities for stakeholders to contribute to the platform is required. To ensure competitive neutrality, all producer responsibility organisations must be involved in funding. Otherwise, competitive advantages will be created on the wrong grounds. To achieve this, producers should require their producer responsibility organisations to participate, as this is in the interest of the producers since future fines will likely impact them.

A national mobilisation effort with long-term, broad communication would probably also lead to significantly improved household sorting behaviour.

8.4. Measures to Reduce the Number of Free Riders

As described in section 2.4, a substantial amount of packaging is placed on the market by free riders, i.e. producers who do not report the packaging they place on the market or pay the corresponding packaging fees. Increased supervision and tougher sanctions would likely reduce the number of free riders. This would have the following consequences:

- ▶▶ The inflow of packaging fees would increase, enabling lower fees for all producers or increased funding for measures promoting material recycling.

- ▶▶ The official recycling rates would decrease when free riders start reporting, as they are not included in today's "placed on the market" figures, which are used as the denominator in recycling calculations.
- ▶▶ Given the system boundaries used in this report, where estimated free-rider volumes for both household and non-household packaging are already included, the recycling rates would not change significantly. Instead, the reliability of the "placed on the market" data would improve.

8.5. Adjustments to Curbside Collection

A coordinated approach is needed regarding potential adjustments to curbside collection. Since municipalities must implement this before December 31, 2026, the work should begin immediately. Producer responsibility organisations, packaging producers, the Environmental Protection Agency, Avfall Sverige, SKR, and government representatives should jointly agree on how glass, metal, and beverage carton should be handled, and whether additional adjustments are needed.

8.6. Need for Political Decisions

Several measures require political decisions to become reality. Expanded funding, stricter legislation, or other types of actions are needed in the following areas:

- ▶▶ If county administrative boards take over supervisory responsibility from 2026, they must receive sufficient funding to conduct supervision more effectively than today. Specific requirements should be placed on supervisory authorities to increase oversight of the construction sector, including on-site inspections rather than primarily inspecting waste-receiving facilities.
- ▶▶ Previous studies by the Swedish Environmental Protection Agency show that half of the plastic in mixed construction waste consists of packaging. Only one percent of total construction plastics is recycled. Packaging must be sorted separately on construction sites, but even when this is done, many diverse types of plastic packaging are mixed. Stricter requirements are needed to ensure that more plastic fractions are separated on construction sites.
- ▶▶ Since many construction projects are subject to public procurement, this could be used to drive change in the sector. Public procurement should routinely require proper sorting at source in construction projects, but similar requirements could apply across other sectors as well.
- ▶▶ Many regions have sorting systems for plastic packaging, yet 15 percent of combustible healthcare waste consists of plastic packaging¹². Requirements for sorting plastic packaging in healthcare should be clarified and enforced with sanctions.
- ▶▶ Today's sanctions do not meet the EU requirement that fees must be dissuasive. A fine of SEK 30,000 is not considered dissuasive. Therefore, sanctions for companies that fail to join a producer responsibility organisation, or fail to sort correctly, should be significantly increased.
- ▶▶ There is a need for expanded investment in infrastructure for sorting, baling, washing, and granulation. Given the low profitability in the sector, due to competition from cheap virgin plastic made from Russian oil in China, public investments to support domestic recycling industry may be necessary. Dedicated funding within The Industrial Leap (governmental funding to support Sweden's industrial green transition, Industriklivet) that supports infrastructure expansion without requiring innovative technology (as Climate Fund grants do) could be a solution. Another possible measure is reduced employer social security contributions for recycling companies. There should also be funding available for scale-up of facilities and market introduction.
- ▶▶ A barrier to producers switching to recyclable packaging can be prior investments in packaging machinery designed for composite plastics. To accelerate the transition, temporary financial support could be introduced for producers who replace packaging machinery earlier than planned in order to be able to produce recyclable packaging.
- ▶▶ Significant investments in R&D are needed to develop materials with improved recyclability, as well as technologies and systems enabling efficient sorting, logistics, separation, and recycling. Market actors alone cannot solve this; dedicated research funding is needed.
- ▶▶ Illegal waste handling undermines efforts to increase recycling. Enhanced inter-agency cooperation is essential to combat illegal waste activities.
- ▶▶ The government's memorandum (Reform of Waste Legislation for Increased Recycling and a More Circular Economy, November 2024) proposes requirements for waste suppliers and receiving incineration plants to document and inspect waste delivered to energy recovery. This is a crucial tool to improve sorting of non-household packaging and should be implemented.
- ▶▶ To ensure that virgin plastic produced in countries without emissions-trading requirements is treated equally with EU-based producers, the government should advocate for fossil-based plastics to be included in EU's Carbon Border Adjustment Mechanism (CBAM). Imported plastic would then be priced similarly to emissions under the EU ETS. The emissions generated during the extraction of the fossil raw material and in the production of plastic would be covered by the tariffs.
- ▶▶ To avoid substantial EU fines due to low recycling rates for wooden packaging, the government must either change the regulations to make incineration less attractive or seek an exemption from the target.

¹² Kartläggning av plastflöden i Sverige 2023, Naturvårdsverket, Rapport 7191, Juni 2025, page 9 and 106

▶▶ **2050**
Fast forward - together


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