

Waste and packaging

We have a long history of finding ways to make more from less and maximise the use of by-products and co-products from our operations. We believe that waste materials are simply products for which we have not yet found a use. With that in mind, our businesses are implementing practices to reuse, recycle or reduce food, plastic and textile waste.



Pressed sugar beet pulp, which is a by-product from sugar production, and dried animal feed, which British Sugar manufactures from the pulp, Wissington, UK

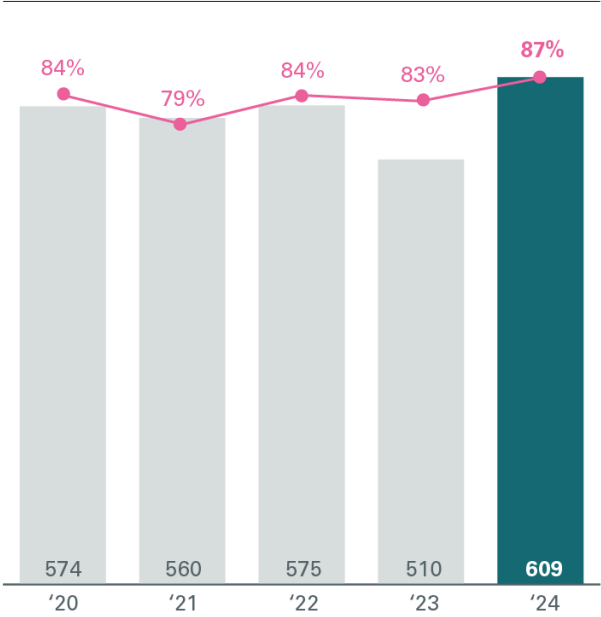
Waste and circularity

Our businesses produce many commercially viable products from sources potentially considered waste. For example, our sugar businesses have become a major supplier of raw materials for animal feed, an important feedstock source for many different sectors, and is a supplier of raffinate and betaine for use in the petrochemical and pharmaceutical sectors.

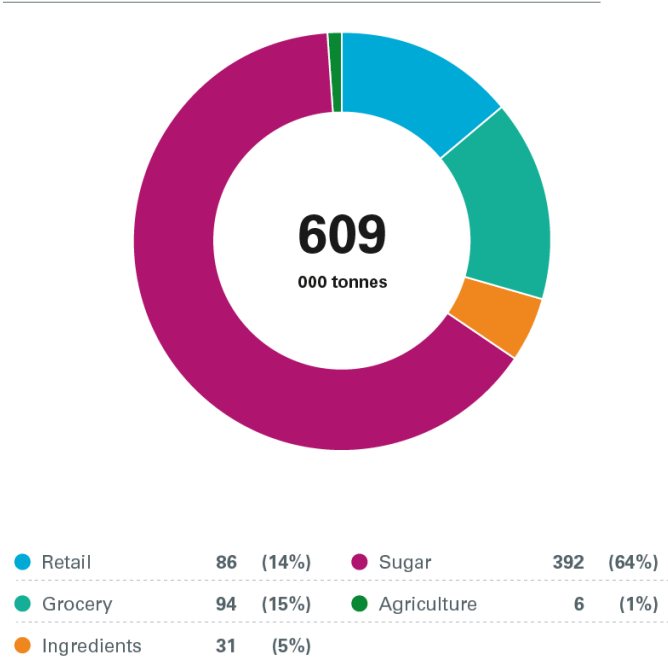
Across the Group, we generated 609 kt of waste in 2024 which is a 19% increase compared with the 510 kt tonnes generated in 2023. This increase is primarily due to our sugar business in Spain operating longer campaigns and processing larger quantities of sugar beet, as well as management of settlement ponds to maintain efficient operations. The soil from the settlement ponds is sent off-site for agricultural purposes as fertiliser and soil conditioning.

Of the total waste generated, 87% was sent for recycling or other beneficial use. In 2023/24, we registered a 9% annual decrease of waste sent to landfill from 88kt to 80kt which reflects the efforts of our businesses to reduce waste streams and find alternative uses for the materials. In 2023/24, 16% of all factories achieved zero waste to landfill and 38% recycled or reused 95% or more of their total generated waste. [See our data page](#) for more details on our waste data.

Total waste generated and the percentage sent for recycling or other beneficial use
(000 tonnes)



Total waste generated 2024, by segment
(000 tonnes)



Our food businesses are highly efficient and aim to avoid products going to waste by donating surpluses to food banks, community groups and charities. Once no longer fit for human consumption, food waste can be used as animal feed or in energy generation.

Some businesses use on-site anaerobic digesters to generate biogas from our waste streams. For example, our sugar businesses in Africa use bagasse, the dry fibrous material that remains after crushing sugar cane as feedstock to generate up to 87% of the annual power requirements of their own factories and to export surplus electricity into national grids.

In Retail, Primark has worked with the Ellen MacArthur Foundation since 2018 as part of its 'Make Fashion Circular' initiative. In 2021, it became a Network Partner of the Foundation and joined its Advisory Board for Fashion. Primark utilised the Foundation's design principles to create its [Circular Product Standard](#), a framework for how it intends to design products now and in the future. Primark has committed to strengthening the durability of its clothes by 2025 and to make more clothes that are recycled by design by 2027. It is focused on scaling circular design in certain categories, creating specific product guidelines and engaging and training colleagues and suppliers on progressing and scaling circular design.

Plastic and packaging

As a leading provider of food, ingredients and clothing, packaging contributes significantly to our groupwide environmental footprint. Paper is the main packaging material used across the Group, followed by plastic

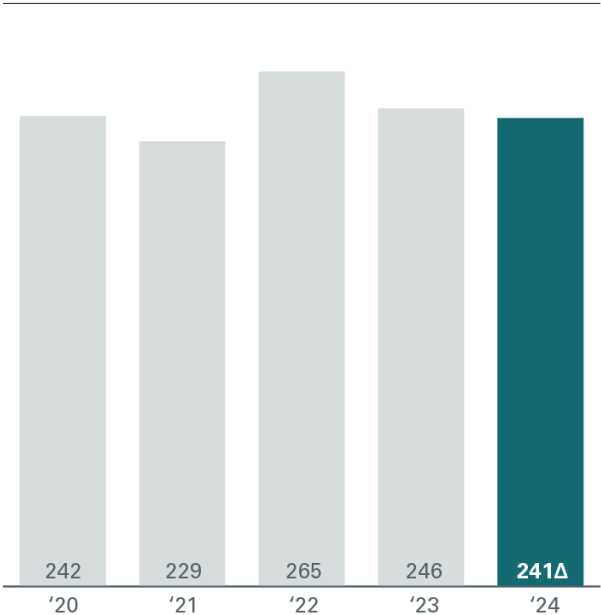
and glass. Our businesses also use wood, steel, aluminium and a number of other materials.

Though we fully recognise the harmful effects of plastic waste on ecosystems, plastic currently plays a vital role in both ensuring the safety and quality of products and reducing food waste by extending the shelf life of food. Our challenge is to use plastic materials responsibly and find solutions that balance the needs of our customers and our desire to reduce the impact of plastics on ecosystems. Where viable, our businesses are doing this by removing unnecessary packaging, switching to more easily recyclable types of plastic and increasing the use of recycled content in the plastics we use.

Our businesses also demonstrate their commitment to tackling plastic and packaging challenges by involvement with and support for a number of collaborative industry pacts and programmes, including the WRAP UK Plastics Pact and the Soft Plastic Recycling Scheme in New Zealand.

In 2024, our businesses used 241 kt of packaging compared with 246 kt used in 2023, marking a 2% decrease year-on-year. [See our data page](#) for more details on plastic and packaging. Our food businesses have contributed to this decrease by reducing packaging, improving recyclability and replacing plastic with alternative materials such as cardboard. For example, AB World Foods reduced the weight of Patak's glass packaging for a sauce range, eliminating approximately 192 tonnes of glass and 6.1 tonnes of steel. Twinings is removing plastic overwraps across its markets and switching to 100% recyclable paper envelopes on individual tea bags, and 97% of sugar packaging from our sugr businesses in Africa is now recyclable. As one of its main sources of non-clothing waste, product packaging is a priority focus area for Primark. The business has committed to removing all single-use plastic by 2027, and has developed short, medium and long-term packaging roadmaps to achieve this objective.

Quantity of packaging used
(000 tonnes)



Cardboard hangers on Primark's baby clothes range

Δ EY has provided limited independent assurance over the 2024 metrics. [See our data page](#) for the assurance statement.

Waste and packaging - Retail



From the raw materials it sources to the waste in its stores, Primark is striving to responsibly manage the natural resources it relies on.

Waste and circularity

Primark has made a commitment to give its clothes a longer life. Its ambition is to drive forward innovation and, through collaboration within the industry, to make its clothes last longer and reduce clothing waste.

Primark clothes will be recyclable by design by 2027. There is currently no single industry-recognised definition of the word 'recyclable' for textiles and clothing. Primark is focused on expanding the number of products that are circular by design in certain categories, creating specific product guidelines and engaging and training colleagues and suppliers on circular design principles. In other product categories, it is focused on testing, trialing and learning to overcome significant and inherent challenges. Some types of products and materials are much harder than others to move to a circular design.

Primark has worked with the [Ellen MacArthur Foundation](#) since 2018 as part of its 'Make Fashion Circular' initiative. In 2021, Primark became a Network Partner of the Foundation and joined its Advisory Board for Fashion. Primark has used the Foundation's design principles to create its [Circular Product Standard](#) (see more in circular product design). In 2024, Primark joined the Foundation's The Fashion ReModel to help the industry unlock the barriers to scaling circular business models.

In 2023, Primark launched its first circular collection and it continues to train teams to enable the business to expand circular design into key product categories such as denim and jersey, which are more simple to move into recyclable by design. Primark continues to translate these principles into tangible and practical guidelines for different clothing types and categories, such as knitwear. Approximately 3% of all Primark's clothing unit sales meet the criteria set out in its Circular Product Standard. Primark is now looking at circularity solutions for products made of blended fibres, recognised as one of the major inhibitors of textile-to-textile recycling.

Circular product design

Primark's Circular Product Standard (CPS) is a framework for how it intends to design products now and in the future. The CPS was launched in 2023 after a two-year project with three partners; the non-governmental organisation WRAP, the circularity think tank Circle Economy and the non-profit sustainability educator Sustainable Fashion Academy. The framework is built on the vision of the Ellen MacArthur Foundation, for a circular economy for fashion.

The CPS sets out that a circular product has three fundamental criteria:

- designed with recycled or more sustainably sourced fibres;
- designed for physical durability; and
- designed to be technically recyclable at commercial scale.

A key focus in recyclable textiles and clothing is moving towards 'mono-materiality', which means using single fibre/fabric compositions instead of blends, and using the same composition where feasible for stitching threads, trims and pocketing. The other principle is based on eliminating or reducing 'disruptors', which are elements of an item of clothing that could 'disrupt' the recycling process, such as labels, hard trims and prints. There is no single industry level or legislative definition of 'recyclable' clothing.

Primark has a Circular Design training programme, co-developed by Circle Economy and the Sustainable Fashion Academy. Its foundation course is mandatory for all product teams. To date 529 colleagues (80% of eligible colleagues) have taken the foundation level of this training, which is designed to orient and familiarise colleagues with the basic concepts of a circular economy for fashion. In order to apply the learnings to different product categories, Primark has since partnered with the Circular Textiles Foundation (CTF) to evolve the programme to create expert-level training. These sessions involve smaller groups of colleagues and select suppliers. The goal of this programme is to co-create specific Circular Design Guidelines for each product category.

Primark works with key suppliers to support them in making the necessary changes to support its circularity aims. These include briefings, training sessions and webinars on specific product guidelines, technical and design standards, and the data they need to provide for its validation processes. Primark also uses some of these sessions to discuss design techniques and strategies that support its ambitions for more recyclable and durable clothing.

As part of its desire to raise the bar for circular design where practical and feasible, Primark intends to periodically refresh and update the CPS based on new and emerging recycling capabilities, and its reflections from scaling circular design to date. Future legislation is expected to challenge existing assumptions and parameters of circular design and guide the evolution of the CPS.

Durability

Primark is dedicated to strengthening the durability of its clothes by 2025. Primark published its Durability Framework in July 2024. The framework is a set of guidelines for durability testing that can be embedded into business and contributes to the development of best practices as no industry standard currently exists. Primark consulted with WRAP and its Textiles 2030 initiative to establish this framework. Within it sits two pillars of testing, 'extended washing' and 'physical quality'.

Beneath each pillar and building on the minimum compliance levels that already existed, Primark has added three additional tiered levels: foundational, progressive and aspirational. Underpinning this framework is a

set of continuous improvement principles that support the integration of durability at every step of product production from design through to manufacturing. Since January 2024, eligible clothing has been tested to the aspirational level of 45 washes. There are some exemptions, for example anything that needs hand washing or dry cleaning is not currently part of the extended wash framework.

Primark has been working in conjunction with third party testing labs to implement extended wash testing. This will help establish standardised data across all partners, allowing the business to set a clear baseline. Primark has now collected a full year's durability data for denim, socks and jersey. This will enable it to build a full product performance baseline and truly understand how each product category is performing on durability. Since January 2024, 66% of clothing that was tested passed the aspirational level.

As part of its durability commitment, Primark has continued to roll out its repair workshops, supporting customers and colleagues to love and wear their clothes for longer. The free repair workshops are accessible and inclusive for all, and focused on quick, easy and practical skills that empower participants to complete their own repairs. Over the last year, these have been scaled further in the UK and ROI, and introduced in the Netherlands, France and Italy. Since 2021, Primark has run 393 workshops in total across the regions, with 7,157 free places to customers and colleagues¹. To maximise the reach of the repair workshops, Primark has created an online customer hub with repair tutorials.

Chemicals

Chemistry enables the creation of a wide array of materials and colours used in Primark's clothes. Chemistry can also improve the performance, safety and environmental impact of products, and plays a key part in raw material production. Most of the chemicals used are applied during the 'wet processing' phase, which includes dyeing, printing, bleaching, tanning or washing of materials.

Effective chemical management protects both consumers and workers in Primark's supply chains. It increases resource efficiency, contributes to cleaner air and water and can reduce impacts on biodiversity.

Primark has developed a 2030 Chemistry Strategy with continued focus on compliance and developing more sustainable chemistry. Capacity building and innovation are key priorities to equip the business and suppliers with the skills necessary and focus on meeting upcoming challenges.

Primark rolled out CleanChain's Compass Dashboard this year to improve data analytics of supply chain chemical information, such as chemical inventories and wastewater testing results, to improve monitoring, data-driven management and decision-making.

Primark has a Restricted Substance List (RSL) which is aligned with the [Apparel and Footwear International RSL Management \(AFIRM\) Group](#). It is also a board member of the [Zero Discharge of Hazardous Chemicals \(ZDHC\) Foundation](#). Primark's Chemical Management Guidance assists wet processors in complying with ZDHC guidelines. Primark is dedicated to supporting its suppliers with the tools and guidance needed to use chemicals safely. It has regional environmental teams across strategic sourcing countries, which engage directly with suppliers' factories to provide awareness and training in relation to chemical management. This includes requirements for factories to compile and submit chemical inventories so that Primark can evaluate its usage of chemicals in reference to the [ZDHC Manufacturing Restricted Substances List \(MRSL\)](#). In 2023, 251 key wet processors submitted their chemical inventories through ZDHC InCheck reports.

Primark delivers regular training on its chemical management requirements to suppliers and wet processors in the supply chain. With Primark's support, 198 factories in the supply chain completed ZDHC's [Supplier to Zero programme](#), focused on improving chemical management systems. ZDHC Chemical Management

System Technical Industry Guide training was delivered to 59 factories, working with a third party to implement improvement actions on the ground.

Primark launched a wastewater testing due diligence programme in 2023/24 targeted at 20 factories that had not recently tested to the ZDHC guidelines. Alongside working with the factories to improve the quality of their waste water and chemical management, the results have helped to refine its testing approach and analysis. In 2023, 241 key wet processors tested their wastewater to the ZDHC guidelines. Through the Brands Hardlines Collaboration, Primark has contributed to the foundation's work for the recently announced expansion of the ZDHC MRSL to broaden the approach to supply chain chemical management to further product categories. As part of this commitment, Primark completes an annual assessment of its chemical management programme. In 2023/24, its performance was rated in the second highest category 'Accelerator' by the ZDHC Foundation, which refers to organisations with the influence to increase the use of ZDHC tools in the industry².

Driving the use of more sustainable chemistry is essential to the Primark Cares strategy. Three wet processors are continuing to pilot [Aii's](#) Clean by Design Chemistry and Wastewater programme, with some promising improvements indicated through the mid-term reports. The final outcomes will help to guide future decisions on site-based efficiency improvements linked to Primark's broader Resource Efficiency Programme.

Plastic and packaging

As one of its main sources of non-clothing waste, product packaging is a priority focus area for Primark. The business has committed to removing all single-use plastic by 2027, and has developed short, medium and long-term packaging roadmaps to achieve this objective.

Primark has an in-house team of packaging technologists, who provide expertise on omnichannel packaging design, material selection and commercial considerations.

Primark has established a baseline of all of its packaging to enable it to accurately measure its footprint and future reductions. To create this baseline, it collected packaging data from 470 global suppliers between January 2022 and January 2023. Compliance with this data collection is a part of the supplier scorecard requirements from August 2024.

Plastic represents 19% of its total packaging tonnage. Any future packaging improvements will be tracked against this baseline and reported on, in line with the Primark Cares objective. Clothes hangers are estimated to account for around two thirds of total single-use plastic volumes used within Primark. The business is aiming to move to recycled materials for all hangers over time.

In 2023/24, hangers made from a minimum of 90% Certified Recycled Polypropylene were introduced for tops, bottoms, jackets and footwear. These are being rolled out on a phased basis, with completion expected in 2027. Lingerie and swim items are being converted to cardboard hangers by the end of 2025.

While Primark has always reused hangers in its stores wherever possible, it is now starting to collect un-reusable hangers to be recycled and made into new hangers in partnership with its recycling partner Mainetti. In July 2024, a pilot began in three UK stores to collect un-reusable plastic garment hangers, size markers and hanging accessories to be sent to a processing facility.

1. These include sessions held with the Fashion School.

2. ZDHC Knowledge Base: 'Accelerator' Definition. <https://knowledge-base.roadmaptozero.com/hc/en-gb/sections/360002796277-Glossary#15337053980701>

3. Only machine washable clothing is included. There are some products that are exempt such as underwear which should be handwashed.

Case study - Primark

Pioneering circular leisurewear



A T-shirt from the Primark Cares Collection made with cotton from the Primark Cotton Project

Beyond scaling circular design via t-shirts and denim, Primark has been using key collections to test and trial new approaches.

Previously, almost all of the leisure products produced by Primark, such as hoodies and joggers, were made from a polyester/cotton blend. This is currently a blend that is hard to recycle except under certain conditions that are not industrially scaled.

Through its Rita Ora collection, Primark is testing and trialling a small collection of leisure products made from 100% cotton, which is much easier to recycle. This includes its Rita stretch vest. Typically, stretch qualities in fabrics and products are achieved via the use of a percentage of elastane. However, elastane is widely regarded by most commercial recyclers as one of the most challenging disruptors to the recycling process.

A rib vest and tee collection was developed that uses no elastane, using a specific 'rib' construction to achieve a level of stretch. Through this pilot, Primark is now working to scale up similar fabrications, using cotton instead of cotton/elastane where feasible to achieve stretch. It is using this pilot to build more robust and concrete circular design guidelines and principles for leisure products, and will be working with its product teams to further test, trial, scale and embed these principles over the coming years.

Waste and packaging - Grocery



Our Grocery businesses continue to focus on making improvements in their waste and packaging.



Dorset Cereals packaging on the production line in Poole, UK

Waste and circularity

The principles of circularity and efficient resource usage align with the management ethos across our Grocery businesses, because alongside delivering environmental benefits they directly support operational efficiency and cost control.

This year, the Grocery businesses increased total waste generated by 11% compared with last year. The increase was driven mainly by George Weston Foods, which accounts for 76% of the Grocery segment's total recycled waste, with one site experiencing an increase in bread returns from retail stores. Of the total waste generated, 81% was recycled, recovered or sent for other beneficial use, which is an increase of 16% compared with 2023.

All businesses are actively working to reduce waste, with initiatives tailored to their specific operations. For example, Twinings Ovaltine is reducing its waste output by focusing on improved operational efficiencies, implementing various initiatives to reduce waste at source. These initiatives include improving machine efficiencies, reusing all production waste, returning plastic packaging materials back to suppliers after use

and promoting a waste segregation culture across the entire business. Its UK and Polish manufacturing sites achieved zero waste to landfill this year. ACH has made investment in reducing waste by enhancing production efficiency and recycling waste materials.

Grocery Group

With a product portfolio including staples such as bread, flour, rice, noodles, bagged sugars, tea, cooking sauces and breakfast cereals, reducing food waste remains a major area of focus for Grocery Group businesses.

Grocery Group businesses in the UK are signatories of the Courtauld Commitment 2030, an industry-wide initiative aiming for a 50% per capita reduction in food waste by 2030 against the UK 2007 baseline. Grocery Group is actively contributing to this goal by following the commitment's 'Target, Measure, Act' framework. Each business within the Grocery Group has established internal food waste reduction targets and is implementing strategies to minimise waste.

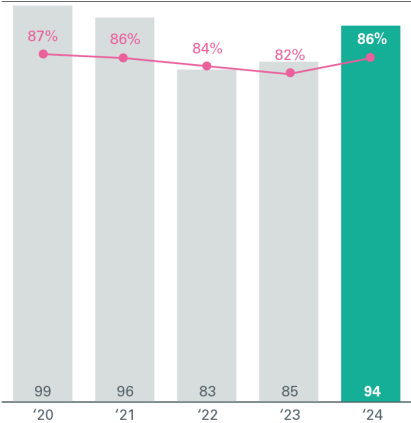
Between 2015 and 2023, food waste tonnage from Grocery Group businesses in the UK decreased by 23%. By the end of calendar year 2023, 92% of food waste went to the animal feed sector, and 6% of material unsuitable for feed was used for energy generation. Additionally, Grocery Group businesses in the UK have increased donations of surplus food to food banks, with over 580 tonnes donated in calendar year 2023.

George Weston Foods

Since 2022, Tip Top has been a signatory of the Australian Food Pact, which aims to halve food waste in Australia by 2030. Tip Top has an efficient resource use programme for reducing waste where most of the waste is either turned into breadcrumbs or used as animal feed. Tip Top currently sends less than 1% of its food waste to landfill. It is developing a Food Waste Action Plan to address reducing returns and food waste in customers' homes and at its bakeries.

Total waste generated vs proportion recycled

(000 tonnes)

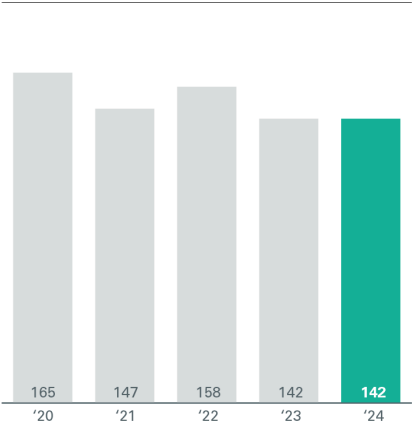


Plastic and packaging

Packaging has an important role to play in ensuring the safety and quality of products, but the Grocery businesses are also focused on minimising their environmental impact. Across many programmes and initiatives, the individual businesses are working to reduce packaging and increase recyclability and reusability.

During 2024, our Grocery businesses’ total packaging used remained consistent compared with 2023, while production output increased by 6%, demonstrating efficiencies in packaging use. This improvement is partially due to changes in production mix and volumes, as well as projects within the businesses to replace plastic packaging with alternative materials such as cardboard. Our Twinings, AB World Foods and ACH businesses use the largest quantities of packaging and therefore have the most influence on the segment’s packaging volumes.

Quantity of packaging used
(000 tonnes)



Grocery Group

Since 2018, Grocery Group’s businesses in the UK have been members of the UK Plastics Pact. Led by WRAP, the voluntary UK Plastics Pact commits signatories to eliminate problematic or unnecessary single-use packaging through redesign, innovation or alternative delivery models. The commitment requires food producers and other users of plastic materials to factor recyclability into the specification and design of their packaging, and the waste reprocessing sector to adapt to ensure that those materials that technically can be recycled easily are collected and taken for reprocessing.

Over calendar year 2023, our Grocery Group businesses in the UK continued to focus on the removal of packaging formats that use materials that are difficult to recycle. As a result, 89% of the packaging materials used over the past year were either fully recyclable in the UK or recyclable where facilities exist. Materials classified as difficult to recycle across its branded foods portfolio now account for less than 0.4% of all packaging and materials.

In 2023/2024, AB World Foods reduced the weight of Patak’s glass packaging for a sauce range, eliminating approximately 192 tonnes of glass and reducing carbon emissions by around 175 tCO₂e. Additionally, It eliminated approximately 6 tonnes of steel, further reducing carbon emissions by about 90 tCO₂e.

Silver Spoon has invested in a new palletiser and automated wrapping capability at its Bishop’s Stortford Flour Mill, which has reduced the supply chain waste of one of its major customers by 17% as a result of less handling and a reduction in damaged product.

Twinings Ovaltine

Twinings is working to minimise packaging materials and where possible use more sustainable alternatives, increasing the recycled content and removing single-use plastic, and in doing so also making sure more of its packaging is recyclable. Twinings has committed to ensuring that all consumer packaging is recyclable or reusable and that its tea bags are compostable by 2025. Packaging sustainability is built into its new product development and innovation process. Design for recyclability guidelines are available to all packaging developers, with targets and guidelines part of all packaging briefs, and used during approval processes.

All tea bags produced at its Andover and Swarzedz factories are certified as Industrially Compostable, with approximately 70% of the tea bags used at Swarzedz, including the tag, thread, and inks, certified as Home Compostable. To reduce plastic waste, Twinings has also removed plastic wrap from around 75% of its cartons. In terms of overall packaging at the Andover and Swarzedz sites, 20% is currently compostable, 71% recycling¹, 1% is designed for recycling, and 8% is currently not recyclable.

George Weston Foods

George Weston Foods is a signatory to the Australian Packaging Covenant Organisation (APCO) 2025 National Packaging Targets and a foundational member of the National Plastics Recycling Scheme (NPRS). The NPRS is being developed by Australia's food and grocery manufacturing industry, with funding support from the federal government, to create a new advanced recycling industry in Australia, aiming to turn plastic packaging back into new food-grade packaging. The NPRS is a critical part, but not the only part of George Weston Foods' plastics and packaging strategy. Businesses within George Weston Foods have formed a Packaging Management Team to address packaging issues more generally and develop communities of practice to share innovations.

1. Recyclable / Recycled - recycling needs to be 'in practice and at scale' for a package to be considered recyclable. At scale means beyond the lab, pilot test or small population size to demonstrate that the design of the packaging is not a barrier to recycling and can be replicated widely.

Case study - TipTop Bakeries

TipTop recycled and recyclable bread bag tags



A TipTop 100% recycled cardboard bread tag, Australia and New Zealand

TipTop successfully launched Australia's first 100% recycled and recyclable cardboard bread tags. Switching to recyclable tags, made from 100% recycled cardboard, across Australia and New Zealand will prevent approximately 300 million plastic tags from ending up in waste streams. TipTop has removed around 105 tonnes of polystyrene from waste streams every year as part of its commitment that by 2025 all its packaging will be 100% recyclable, reusable or compostable.

Waste and packaging - Sugar



ABF Sugar strives to be efficient in its use of resources across sugar beet and sugarcane production, from the field to the factory and to customers and consumers. ABF Sugar continually invests in new technology and process optimisation to make its factories more efficient, improve its use of raw materials, and move towards a more circular approach.



Production of the bagasse co-product at the Nakambala sugar factory in Zambia

Waste and circularity

ABF Sugar's ethos is that waste materials are products for which it has yet to find a use. This is demonstrated by its bio-refineries, which transform sugar beet and sugarcane waste into a range of commercially viable products thanks to innovative manufacturing processes. The business continues to work to maximise the quantity of sugar beet processed so as little as possible is left in the field.

In 2023/24, the business increased the total amount of waste produced through its activities by 47% compared with the previous year. This increase is primarily due to our sugar business in Spain operating longer campaigns and processing larger quantities of sugar beet, as well as management of settlement ponds to maintain efficient operations. The soil from the settlement ponds is sent off-site for agricultural purposes as fertiliser and soil conditioning. Over 60% of the total waste generated this year was recycled waste from our operations in Spain.

In 2024, only 14% of all waste generated was sent to landfill with the remaining 86% recycled or used in another capacity.

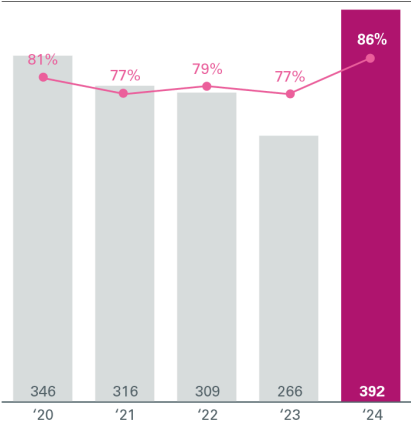
ABF Sugar businesses use by-products to generate electricity. British Sugar uses bio-methane produced from its fermented sugar beet pulp to generate electricity, and carbon dioxide and low-grade heat generated at its operations to grow medicinal cannabis under licence.

Our sugar businesses in Africa use bagasse, the dry fibrous material that remains after crushing sugarcane, as its feedstock to generate up to 87% of the annual power requirements of its own factories. It also provides the opportunity to co-generate electricity in Eswatini which goes into the national grid. In June 2023, the Eston plant in South Africa also started to export power into the national grid.

Among the commercially viable products its businesses produce, British Sugar is a major producer of animal feed and a supplier of raffinade and betaine for use in the petrochemical and pharmaceutical sectors. African sugar by-products include furfural, a natural chemical feedstock with numerous applications in the food and other industries.

Vivergo is the largest bioethanol plant in the UK and one of the largest in Europe. Vivergo Fuels is now operational, and at peak capacity it will use around one million tonnes of UK animal feed-grade wheat. One of the main co-products is protein for animal feed, and at peak capacity the business will also be the largest single-source animal feed supplier in the UK. The blending of bioethanol with petroleum is a key aspect of many governments’ greenhouse gas reduction strategies. At full capacity, it is estimated that the Vivergo plant will produce 420 million litres of ethanol product per year. The net benefit of using this product blended with gasoline to create E10 is the saving of approximately 500,000 tonnes of CO2 which would otherwise be emitted from vehicle tailpipes annually.

Total waste generated and proportion of waste sent for recycling or other beneficial use
(000 tonnes)



Plastic and packaging

ABF Sugar is committed to ensuring all its plastic packaging is reusable, recyclable, biodegradable or compostable by 2030. Plastic has a role to play in maintaining the integrity and safety of its products for customers, but it is striving to reduce packaging to minimise the impact on the environment.

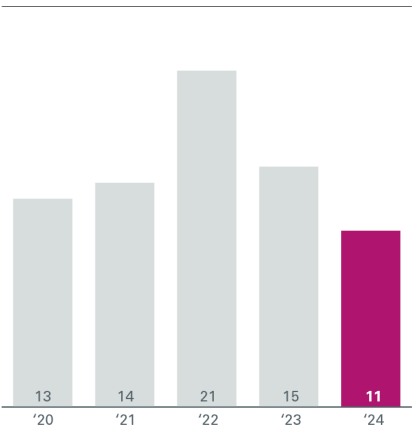
In 2023/24, ABF Sugar reduced its total packaging by 26% from 15 kt to 11 kt. This reduction is primarily driven by a decrease in plastic packaging in ABF Sugar’s operations in Africa. Additionally, our businesses continue to explore innovative packaging to reduce the volume of materials used.

Plastic use across ABF Sugar, which accounts for 51% of total packaging reported by ABF as a Group, reduced by 36% from 8.7 kt in 2023 to 5.6 kt in 2024. Paper packaging contributes 34% of the total packaging materials in 2023/24, and reduced by 10% from 4.2 kt in 2023 to 3.8 kt in 2024.

Azucarera has a long-standing strategy to reduce its packaging. In 2023/24, achievements included replacing the plastic pouch of its sugar for marmalades with a paper pack, reducing the plastic weight used in the film retractile of pallets, replacing its agave syrup jar with a 100% recycled jar, increasing the proportion of recycled material in its icing sugar jar to 50%, and using a plastic for its panela doypack and coconut sugar that is easier to recycle.

Our African sugar businesses’ strategy is to reduce packaging weight and use more packaging that can be reused or recycled. 97% of their packaging is recyclable. They have over 10 workstreams looking at packaging solutions, trialling new products and finding ways to enable customer recycling. One area of particular focus in 2023/24 was assessing solutions where local recycling is sparse, as not all of the countries where our sugar businesses in Africa operate currently have recycling facilities. In Tanzania, they are trialling Biaxially Oriented Polypropylene 25kg and 50kg bags without plastic liners. These bags are extremely durable and resistant to water. Without plastic liners, the business’s intention is to see if it can reduce the volume of packaging or remove other plastic liners and see if the new packaging can be used or recycled in the future.

Quantity of packaging used
(000 tonnes)



Waste and packaging - Ingredients



Our Ingredients businesses are committed to protecting finite resources and reducing the waste generated by their operations.



Anaerobic digestion plant at AB Mauri's site in Hull, UK

Waste and circularity

Across our Ingredients businesses, waste streams are increasingly repurposed for new uses and markets, and if waste cannot be eliminated or repurposed, it is recycled wherever possible.

In 2024, there was a 55% decrease in the generation of all waste materials across the segment from 70 kt the previous year to 31 kt. This significant reduction is primarily due to the AB Mauri site in Vietnam ceasing yeast production early in 2023, which greatly reduced the amount of waste generated by the business.

Of this waste, 67% of ABFI's and 77% of AB Mauri's total was recycled, recovered, reused or sent for another beneficial use. In addition to reducing overall waste, the businesses regularly explore positive ways to use the waste created, with examples in 2024 including fertilisers, animal feed and recycling of paper and plastics.

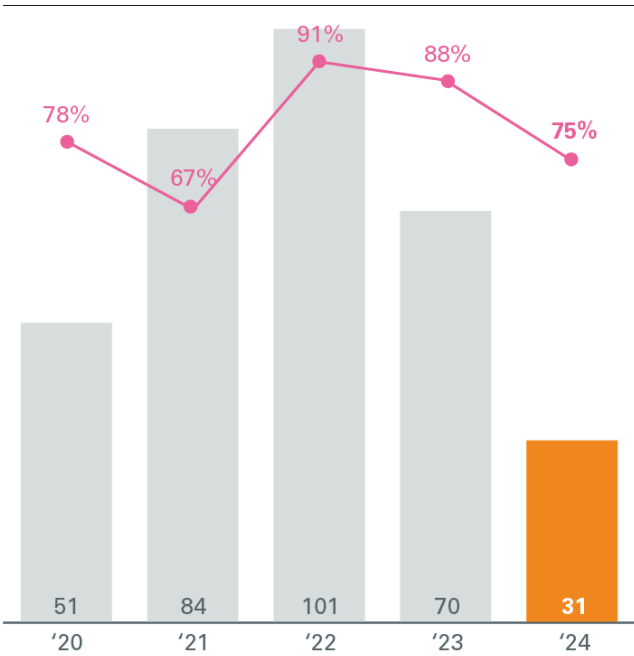
AB Mauri

AB Mauri aims to reduce waste by continuously improving the efficiency of its operations, such as through the smart design of its production lines. For example, some of its operations collect the waste created during the bakery ingredient manufacturing processes to sell as by-products in several locations.

AB Mauri has also formed a co-products technology team with a mandate to evaluate and develop a portfolio of technologies to better exploit these opportunities, overseen by a monthly steering group chaired by its global CEO.

An example of an effective use of one of these co-products would be vinasse, a part of AB Mauri's yeast process which is used to create fertiliser for agriculture and highly prized ruminant animal feed. Husks from its soya milling operation in Royston, UK, are sold for processing into animal feed, helping the site to maintain zero waste to landfill.

Total waste generated and proportion of waste sent for recycling or other beneficial use
(000 tonnes)



By repurposing waste streams into valuable co-products, the businesses are also displacing industrial processes. For example, a number of its businesses repurpose waste as an ingredient in organic fertiliser and others send waste for conversion into compost, replacing nitrogen-based fertilisers that rely on carbon intensive manufacturing processes.

Biogas from yeast wastewater treatment processes on-site is also captured and recycled back into operations, replacing natural gas as a source of heat and electricity generation.

ABFI

ABFI businesses are focused on eliminating waste and promoting recycling wherever possible. Training and education play a key role in raising awareness and understanding of waste management opportunities across operating activities. Each business is responsible for developing waste management initiatives tailored to their specific operational needs. These initiatives focus on elimination, reduction, reuse, and recycling, and often involve collaboration with value chain partners to convert waste into usable raw materials. For example, PGP International monitors its efforts to eliminate waste and employs a risk assessment process to track continuous improvement projects. Another example is SPI Pharma's innovative container tilting system at its facility in Septèmes, France. Using gravity to tilt and empty containers allows the site to reduce waste, cut costs and improve safety.

Case study - AB Mauri

AB Mauri site in Brazil achieves significant reductions in waste



AB Mauri's yeast site in Sorocaba, Brazil

AB Mauri's business in Brazil has reduced its waste to landfill through several initiatives that aim to repurpose waste streams into value-added new products.

At its site in Sorocaba, which focuses on egg-based products for its Sohovos brand, AB Mauri has developed processes to repurpose both of its main types of waste, empty eggshells and wastewater treatment sludge. The empty eggshells are cleaned, dried and crushed at the site into a fine powder, which is used as fertiliser by different partners.

To dispose of the viscous mix of water and waste solids, the Sorocaba site has been working with a partner in January 2024 who incorporates it as an ingredient in organic fertiliser products, replacing the previous practice of paying a contractor to transport and dispose of it through landfill. The two initiatives have helped the site drive down its landfill waste to zero.

Elsewhere in Brazil, waste previously sent to landfill has been repurposed for use in biomass boilers to create low-carbon energy for manufacturing operations, with residual waste sent to asphalt manufacturers. These initiatives form part of a programme that has enabled an overall reduction in waste to landfill in Brazil from over 40% in 2019/20 to just below 7% in 2023/24.

Waste and packaging - Agriculture



AB Agri takes pride in its heritage and track record of sourcing ingredients for animal feed that would otherwise go to waste, avoiding the use of primary products.



Testing the gas-yield potential of waste for use as anaerobic digestion feedstock at Amur Energy's lab in York, UK

Waste and circularity

AB Agri contributes to more responsible and efficient resource use in agriculture. Any co-products and food waste not suitable for animal feed are used to generate bio-energy through its specialist anaerobic digestion business, Amur.

In 2024, there was a 19% increase in the total waste generated by AB Agri from 5.3 kt in 2023 to 6.3 kt this year. Of this waste, 87% or 5.5 kt was recycled, with under 1 kt being sent to landfill. This increase is partly as a result of two sites cleaning large on-site equipment in the reporting year.

AB Agri's nutritional expertise ensures the optimal use of various food co-products, such as the fibre-rich pulp from sugar beet production and the nutritious grains left over from brewing beer and whisky.

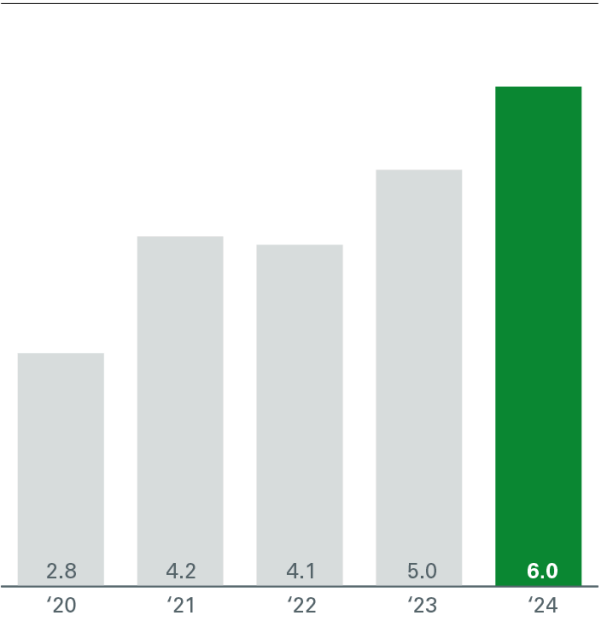
Plastic and packaging

In 2024, AB Agri used 6.0 kt of packaging, a 20% increase compared to 2023. This increase is in line with higher production output, improvements in the internal reporting of packaging volumes and weights, as well as the introduction of new product lines requiring different packaging materials. This year, AB Agri also measured its packaging usage across its UK businesses and it is now evolving this data to incorporate all of its non-UK businesses so that it can establish a global view of the packaging used.

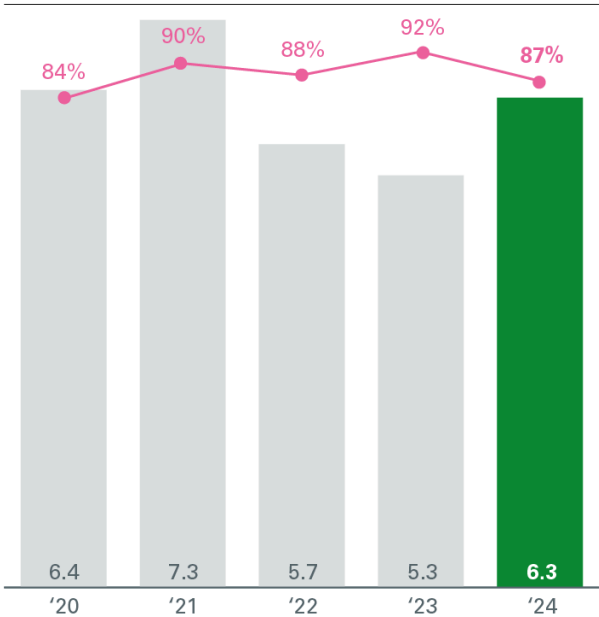
AB Agri remains committed to eliminating, reducing or redesigning the packaging it uses for its products. It has successfully conducted trials aimed at transitioning towards using recycled-content plastic packaging. Changes have been implemented across some of its UK businesses, such as using recycled materials in shrink wrap, tote bags, and plastic tubs within Premier Nutrition's equine range.

AB Agri has been mapping its packaging data to gain a precise understanding of its packaging usage and enable the identification of opportunities for improvement. This analysis has helped to set internal targets at business unit level aimed at reducing overall packaging use and increasing the volume of recycled plastic content.

Quantity of packaging used
(000 tonnes)



Total waste generated highlighting proportion of total waste sent for recycling or other beneficial use
(000 tonnes)



Case study - Amur

Amur turning waste into energy



Colleague testing feedstock sample at Amur Energy lab in York, UK

AB Agri's anaerobic digestion (AD) business, Amur, helps AD operators increase biogas production through performance products, feedstocks and technical advice. By maximising value from raw materials that would otherwise go to waste, Amur contributes to waste reduction and reuse, as well as reducing reliance on fossil fuels.

Amur uses AB Agri's AD facility in Yorkshire as a test site for its research and development. The site produces biogas from materials, including locally sourced food waste and material from animal feed mill sites that have failed to meet quality control standards. In the reporting year, the AD facility has produced 3.6 GWh of electricity and 30.8 GWh of biogas, which has been exported to the UK National Grid. Due to the lack of available feedstock during the reporting period, the amount of biogas exported in 2024 has decreased by 19%.

Amur continues to invest in developing new products to increase biogas production and replace currently used minerals and additives with materials that have a reduced environmental footprint. One example is the ADFe additive, an iron hydroxide-rich material sourced from disused coal mines in partnership with the British Coal Authority. ADFe is a recovered material and has a lower carbon footprint compared to other similar dry materials, as it is dried naturally in the sun rather than through energy-intensive methods. Iron hydroxide is an essential additive to manage hydrogen sulphide levels in biogas facilities. In trials, ADFe has been shown to be 30% more effective than conventional products.

Case study - Premier Nutrition

Premier Nutrition implementing more sustainable packaging solutions



Packaging product at our manufacturing site in Staffordshire, UK

Several years ago, AB Agri's business Premier Nutrition undertook a project to find and implement more sustainable packaging solutions for its equine product range. The project initially focused on its largest equine customer as a pilot.

During a comprehensive review of all packaging product lines, it was discovered that 40% of the plastic packaging used was in the form of plastic tubs and lids. The business worked with its supplier to successfully trial and implement an alternative with 30% recycled plastic content, leading to a significant reduction in the use of new plastic.

The success of this project inspired Premier Nutrition to explore other opportunities for improvement, resulting in 30% recycled content now being used in other types of packaging, such as tote bags and shrink wrap. This positive change extended beyond its Premier Nutrition business, benefiting other AB Agri businesses as well. The knowledge and experience gained from this initiative have led to ongoing trials on plastic bags, which constitute the majority of packaging used across AB Agri.