Welcome

Welcome to ThePackHub's Packaging Innovation Briefing Report for September 2023.

In this comprehensive and unique monthly report, created exclusively for Innovation Zone members, you'll find a wealth of information on the latest packaging innovations and industry news.

With 122 pages of content, including 110 new packaging innovations for the month, you can be sure that you'll stay informed and up-to-date on all the latest developments in the packaging industry.

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Summary

Our latest monthly report underscores the latest advancements in packaging innovation, highlighting key areas such as bio-based packaging, tech-enabled solutions, e-commerce packaging, functional packaging, recycling initiatives plastic reduction, and refillable and reusable packaging. Sustainability remains the primary focus, with approximately 80% of the latest initiatives being eco-centric.

The biobased packaging industry, particularly seaweed-based packages, is seeing rapid expansion, and consumer-centric packaging continues to be vital. Furthermore, the surge in e-commerce offers increasing opportunities for brands and retailers to provide packaging solutions specifically designed for this platform. The trend towards refillable and reusable packaging is picking up steam, with a plethora of initiatives observed in the dry food, household, and personal care sectors.

Recycling initiatives continue to be among the most dynamic sustainability actions, fuelled by the stringent commitments of global Plastic Pacts and packaging taxes.

The Nine Trends →

The innovations featured track ThePackHub's trend areas:

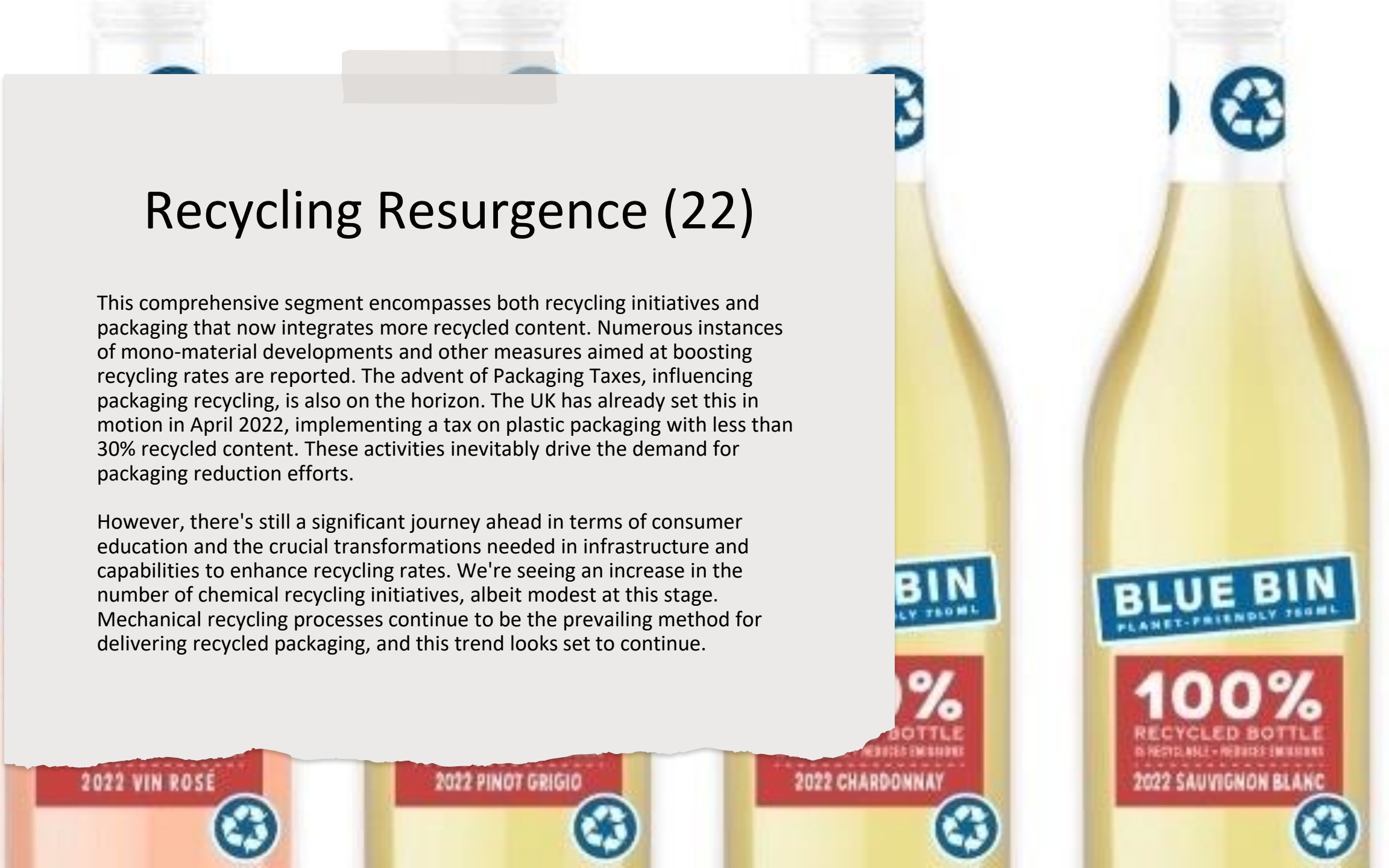
- Recycling Resurgence
- Refill Revolution
- Paperisation
- Bio Alternatives
- Miscellaneous

Naturally Done →

Recycling Resurgence (22)

This comprehensive segment encompasses both recycling initiatives and packaging that now integrates more recycled content. Numerous instances of mono-material developments and other measures aimed at boosting recycling rates are reported. The advent of Packaging Taxes, influencing packaging recycling, is also on the horizon. The UK has already set this in motion in April 2022, implementing a tax on plastic packaging with less than 30% recycled content. These activities inevitably drive the demand for packaging reduction efforts.

However, there's still a significant journey ahead in terms of consumer education and the crucial transformations needed in infrastructure and capabilities to enhance recycling rates. We're seeing an increase in the number of chemical recycling initiatives, albeit modest at this stage. Mechanical recycling processes continue to be the prevailing method for delivering recycled packaging, and this trend looks set to continue.



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Recycling Resurgence

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Partnership develops bio-based PET with superior performance

California-based Origin Materials, a carbon-negative materials company, and Husky Technologies, based in Bolton, Canada, have polymerised the bio-based chemical FDCA (furandicarboxylic acid) into PET (polyethylene terephthalate) for advanced packaging. Origin expects to develop and sell 100% bio-based, low-carbon PET and PEF (polyethylene furanoate) polymers offering full recyclability and what the companies say is superior performance compared to traditional 100% petroleum-derived PET. FDCA is a chemical building block with diverse applications, including polyesters, polyamides, polyurethanes, coating resins and plasticisers. The bio-based chemical is also the precursor for PEF. By combining FDCA with PET, Origin has produced PET/F, a “tunable” hybrid polymer offering performance enhancements and full recyclability. Husky moulded the PET/F hybrid polymer into preforms blown into bottles using Husky’s injection moulding technologies and manufacturing equipment. The technology provider applies a commercial manufacturing-scale level of processing. The PET/F can be integrated into existing PET production systems.

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Whisky packaging revamp reduces CO2 emissions by 30%

Scottish whisky brand Laphroaig has announced the revamp of its packaging, resulting in what it says is a reduction of CO2 emissions by 30%. The changes are said to support brand owner Beam Suntory's Proof Positive sustainability strategy, to achieve net zero carbon emissions across its value chain by 2040. The refreshed packaging retains the green glass bottle but a plastic bar top has been replaced with a beech wood alternative. An easier-to-recycle board carton has replaced a secondary packaging tube. The company says that the new packaging will reduce 1,184.74 tons of greenhouse gases per year – equivalent to growing 30,711 saplings over ten years. A spokesperson for the company said that the new packaging is a good step forward in their global sustainability ambitions while still maintaining Laphroaig's true character and high quality.

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Recyclable deodorant pack is made from monomaterial

Rayuen Beauty is a Chinese manufacturer of cosmetic packaging. They have announced the launch of a new recyclable mono material deodorant pack. The company says that the oval pack is designed to appeal to people with an active lifestyle. Both body and cap are made from PP (polypropylene). The 20g pack is expected to be used mainly for deodorants, but the company says it could also be suitable for body concealers and solid sunscreen applications. The new pack comes in a vibrant lilac colour creating a youthful vibe. The swivel feature makes it easy to access the product, while the oval shape reportedly saves space. The company states that the brand owner can customise the colour and decorate with printed graphics or hot foil stamping.

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Scientists develop new recycling method to produce high-value end products from waste plastic

In what is being described as ‘industry-changing’, scientists at the University of Wisconsin-Madison, US, have developed a new recycling technique to turn low-value waste plastic into high-value products. The method could increase the economic incentives for plastic recycling and introduce the recycling of new types of plastic. The researchers estimate their methods could also reduce greenhouse gas emissions from conventional olefins production by 60%. The technique relies on existing chemical processing techniques. Part of the process is pyrolysis, in which plastics are heated to high temperatures in an oxygen-free environment. The result is pyrolysis oil, a liquid mix of various compounds. In the new process, olefins are recovered from pyrolysis oil and used in a low-energy-intensive chemical process called homogeneous hydroformylation catalysis. The method can process high-value alcohols worth US$1,200-US$6,000 per tonne from waste plastics, which are only worth about US$100 per tonne.

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PET caps will allow 100% monomaterial bottle structure

California-based Origin Materials has developed PET bottle caps that will allow mono material packaging to be recycled without separating the cap and bottle. The patent-pending caps can be produced with any PET, from recycled PET (rPET) to Origin's 100% bio-based, 'carbon-negative' virgin PET. A spokesperson for the company said that they identified a global environmental sustainability challenge and an opportunity to solve it, with an all-PET bottle and cap and closure system being an obvious, necessary next step in beverage packaging and recycling. The EU's Single Use Plastics Directive mandates that caps and lids on beverage containers up to three litres must remain attached to bottles to incentivise the recoverability and recyclability of bottles. While traditional caps must be separated from PET bottles during recycling, Origin's PET caps would not need to be separated from their tethered containers and could thus be recycled easily.

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Innovative home pick-up scheme for plastic recycling launched

UK-based online retailer Abel & Cole has launched an innovative Plastic Pick-Up scheme to address the issue of plastic waste. Capitalizing on their pre-existing home delivery infrastructure, the company has found a seamless way to distribute products and collect plastic waste simultaneously. To make the process user-friendly, customers add a Plastic Pick-Up bag to their regular order and choose the frequency they want to receive them. Upon receiving the bag, the customer follows three straightforward steps to prepare their packaging for collection and recycling. Customers are instructed to separate plastic bags and wrapping from their items, regardless of the retailer. Once the plastics are rinsed clean of any food residue and dried, they are to be placed in the provided Abel & Cole Plastic Pick-Up bag and sealed. The full, sealed bags are then left out with their regular boxes for the delivery driver to collect. The collected plastic is sent to Abel & Cole's partner, Regent Hill, for sorting. It is then transported to Coveris for conversion into construction groundsheets, which play a vital role in providing waterproofing in building construction. They can be recycled post-demolition. As a part of their Packaging Promise, Abel & Cole is committed to assisting customers in reducing their waste footprint.

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Olive oil producer introduces rPET bottle

Australian olive oil brand Moro has launched its olive oil product in a new ‘Eco Bottle’, made completely from recycled plastic and fully recyclable, along with the label and cap. The 2.2-litre bottles are made from 100% recycled PET (polyethylene terephthalate). The bottles are produced with less energy than that generally required for conventional packaging materials, releasing lower amounts of greenhouse gases. New mandates were agreed upon by the Australian government in mid-2023 regarding packaging design, which would be subject to strict national rules to conform with international best practices from that point onwards. According to the new regulations, all harmful chemicals are to be eliminated from packaging, a move that would further encourage the use of only recycled materials in packaging. The Eco Bottles are available in Australian supermarkets and delis and are estimated to cost A$30 (£23.60).

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100% recyclable PET trays for overwrapping launched

Clearly Clean is a manufacturer of food trays based in Pennsylvania, USA. The latest addition to their range of recyclable food trays are two trays designed to be overwrapped. One is designed with 12 compartments for use with meatballs, the other has two compartments for patties or burgers, which can be customised if required. Both trays are made from PET (polyethylene terephthalate) and feature Clearly Clean's patented rolled smooth-edge design to prevent the overwrap film from tearing. Being made from PET makes the trays three times stronger than PS (polystyrene) while also reducing shrink. The trays can replace any existing plastic and foam trays on high-speed packaging machinery without having to modify equipment. As well as being available in crystal clear, which enables product visibility from all angles and improves shelf appeal, the trays are available in multiple colours.

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British spring water company uses recyclable board cartons

NOBL WATR is a London-based company on a mission to build the UK's lowest carbon footprint drinks brand. They do not use plastic to package their natural spring water, instead use 100% recyclable cartons. Their cartons are made from a mix of 75% FSC (Forestry Stewardship Council) certified paperboard and 21% plant-based plastics. The company says that they decided to pack their drinks in cartons because they feel it is important to reduce their reliance on non-renewable fossil-based materials such as oil-based plastics. A thin layer (thinner than a human hair) of aluminium in the carton creates an oxygen-free layer to protect the water. Also, with every purchase of a case of 12, NOBL WATR will fund the planting of a tree. Nobl sources its water from the Mendip Hills in Somerset.

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Bag-in-box format for Australian vodka reduces carbon footprint

The Mandatory Spirit Co., based in Brisbane, Australia has launched a range of flavoured vodkas in a bag-in-box (BIB) format, which the company says reduces its carbon footprint by eight times compared to glass bottles. The vodka comes in a compact one litre box, which the company claims uses 85% less plastic than rigid plastic containers. Also, more than 75% of the corrugated outer is fully recyclable, and the pack sees a reduction of 72% in fossil fuel usage compared to glass bottles. The format was a collaboration between Newborne Packaging, based just north of Melbourne, who used CAD to develop the specific mechanics of how the bag would be supported inside the box, with the internal bag being supplied by Scholle/Sig. The company says that what makes this BIB product stand out is the increasing consumer demand of convenient, ready-to-drink products, coupled with its portability.

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Printer toner bottles contain up to 60% rPET

Xeikon is a Dutch manufacturer of digital presses and also provides the inks to go with them. The company has announced that the latest version of its dry toner digital printing technology for labels and packaging is the Cheetah 3.0. A major development, as part of the launch is the company's next-generation, food-safe toner, known as Eco. This toner has been formulated with a bottle that contains over 60% high-grade rPET (recycled polyethylene terephthalate). According to Xeikon, this makes it the ideal solution for environmentally conscious packaging applications. The move to rPET reportedly reduces the CO2 output from Xeikon's printing technology by more than 10%. Although ECO toners have been developed for the new Cheetah 3.0 printer series, Xeikon will make them available to existing customers for use with Xeikon CX300 and CX500 printers in the coming years.

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Self-adhesive rPE labels are made with PCR material for maximum sustainability

German self-adhesive label manufacturer Herma has launched a new label whose three main components have been designed to use the lowest possible consumption of resources. The label itself is made from rPE (recycled polyethylene) which is made from 100% PCR (post consumer recycled) material. The adhesive reportedly leaves no CO2 footprint, while the newly developed backing paper (the details of which are confidential) has also been developed with maximum sustainability in mind. Herma rPE PCR white (grade 856) is used as the label material. Only plastics from post-consumer recycling are used to produce this white PE film. The new pressure-sensitive adhesive 72F was developed jointly by Herma and BASF specifically for this adhesive material. This pressure-sensitive adhesive produces no carbon footprint from its cradle to the BASF factory gate (zero PCF product carbon footprint).

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Launch of high-performance amorphous nylon aimed at Chinese market

Houston-based Ascend Performance Materials has launched a new high-performance amorphous nylon (polyamide) packaging film that the company says is ideal for shrink film in protein packaging, thermoforming films, and barrier layers for fibreboard packaging. The new film, called HiDura LUX, reportedly offers high oxygen and moisture barrier properties. The film also has international food contact approvals. HiDura LUX is designed to serve as a modifier and blend with other polyamides to enhance thermoforming, orientation for improved shrink performance, optical properties like high gloss and low haze, and organoleptic performance and oxygen barrier. A spokesperson for Ascend Asia said that there was growing demand for higher-performing packaging films in the greater Chinese market, to reduce the amount of food goods that never make it to consumers due to spoilage or damage.

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Award-winning PET water bottle is up to 50% lighter

German packaging and bottling machine manufacturer Krones has won an accolade at the German Packaging Prize awards in the ‘Sustainability’ category. It was given for the company’s Shoulderflex bottle which comes in at only 5.9 grams, up to 50% less than conventional 500ml PET (polyethylene terephthalate) bottles currently available on the market, helping water bottlers to reduce their carbon footprint. The design of the Shoulderflex bottle can be used to make containers that are more sustainable and weigh very little, but its advantages are also apparent during the bottle production and processing stages. The bottles have excellent stackability even without the stabilising effect of nitrogen pressurisation, with a filled topload of up to 40 kilograms. A spokesperson for Krones said that despite the smaller amounts of PET needed to produce them, these containers are in no way inferior to conventional bottles currently on the market as far as stability and convenience are concerned.

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Footcare brand moves from plastic clamshells to cartonboard

Dr. Scholl's is a US-based manufacturer of footcare products. Working with New York-based design agency Little Big Brands, they have redesigned their packaging to be more contemporary. They have unified their packaging structures as well as increased sustainability by moving to cartonboard. The new board packaging structure has cutouts on the front and a die-cut window on the back so consumers can see and touch the product. The paperboard structures replace Dr. Scholl's old plastic clamshell packaging. The result is a more cohesive brand family and a more shoppable product line. The new visual architecture also positions Dr. Scholl's to extend into new channels and categories. Apparently, the biggest challenge in executing the redesign was simplifying the communication to only what the consumer needs to see within the first three to five seconds of viewing the packaging. The new packaging began rolling out in May 2023.

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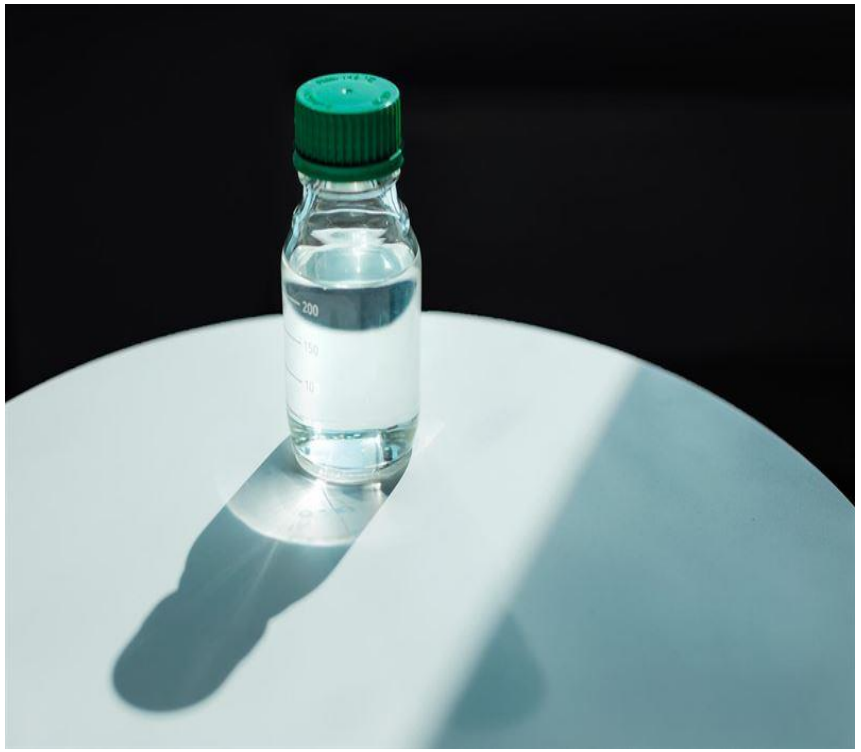
Japanese companies build supply chain for bio-based PET bottles

Three Japanese companies, Mitsubishi Corporation, ENEOS Corporation, and Suntory Holdings Limited, have partnered to build a supply chain for sustainable PET bottles derived from biomass such as used cooking oil, applying a mass balance approach to allocate bio-based materials. Finnish biomaterials manufacturer NESTE will supply bio-based feedstock produced to replace fossil naphtha. ENEOS will manufacture bio-paraxylene (PX) derived from this bio-naphtha at its Mizushima Refinery, producing high-purity terephthalic acid (PTA) and resin for bio-PET bottles using bio-PX. Suntory will then utilise the bio-PET resin to produce sustainable PET bottles for its products. Mitsubishi Corporation will be responsible for the management of the entire supply chain. This is reportedly the world's first production of sustainable PET bottles using bio-PX derived from bio-naphtha on a commercial scale. By the end of 2023, a bio-PX equivalent to approximately 35 million PET bottles will be produced for Suntory to use in 2024.



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UK supermarket switches to clear milk bottle caps to aid recycling

British supermarket Tesco has announced that it is moving away from coloured milk bottle caps to clear for its own brand milk, in a bid to make them easier to recycle. Previously, in line with convention, the bottles had either blue caps for whole milk, green for semi-skimmed, and red for skimmed, which enabled customers to differentiate between the different varieties. When the company moves to clear caps, the label will be predominantly in the previous colour the cap was. The move will affect around 425 million bottles a year across the company's range, including 4 pint, 2 pint and 1 pint bottles. Tesco says that changing to clear plastic milk bottle lids means 3,900 extra tonnes of recycled plastic can go back into making new bottles each year, and the recycling process can be repeated every time a customer recycles a bottle.

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Recyclable cold-seal solution claimed to be ‘first of its kind’

Global packaging solutions provider US-based Sonoco recently announced what they say is a ‘first of its kind’ cold-seal, recyclable packaging solution. In doing so, they have added two new products to their EnviroFlex Paper portfolio. The first is EnviroFlex Paper Ultimate (ULT) 1.0 CS packaging line, which features a high oxygen, moisture and grease barrier, making it ideal for moisture-sensitive products like pet treats and foods containing nuts. The second product is EnviroFlex Paper Advanced (ADV) 4.0 CS packaging, which features a medium-level oxygen and moisture barrier ideal for confectionery and powdered food products. A spokesperson for Sonoco said that their team had developed cold-seal paper-based structures that allow for the clean separation of cold seal and paper fibres, resulting in excellent paper quality after the standard paper recycling process. They also say that this was also recently confirmed through third-party testing.

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Home delivery coffee company moves to 100% recyclable monomaterial

Pact Coffee is a London-based home delivery and subscription service for coffee. The company has announced that it is to move its packaging to a 100% recyclable monomaterial, and will be made from 70% PCR (post-consumer recycled) material. The recycled material in the bags is repurposed plastic made from certified Global Recycling Standard (GRS) PCR LDPE (low density polyethylene). This content comprises things like supermarket carrier bags, poly bags and anything that was classed as LDPE in a previous life. The company said that they had considered compostable packaging. However, it is believed that 90% of homes do not have the facilities for composting at home, so they believe they have chosen the more sustainable option. Also, Pact Coffee says that for every 1,000,000 bags created, the equivalent of 53,000 600ml plastic bottles will be collected from rivers in the Philippines and Indonesia in collaboration with the ethical recycling programme Plastic Bank.

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American edible oil brand introduces recyclable aluminium bottle

California Olive Ranch has added a lightweight, recyclable aluminium bottle to its portfolio of oil products. The company had previously used both glass or bag-in-box formats. The company says that the introduction of the aluminium bottle is their smallest, most lightweight bottle yet, and they are able to not only continue building upon their sustainable packaging efforts, but also offer consumers a more accessible price point to their bestselling line of olive and avocado oils. Additionally, the size of the bottle allows for ease of use for packing while travelling, which is said to be highly appealing to their consumer base. The aluminum bottle is supplied by Chicago-based Trivium Packaging and comes in a handy 335ml size. The company reveals that in the North American market, nearly 80% of edible oil brands in packaging under 750ml, and the majority of larger containers are packaged in plastic containers.

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New mono material cosmetics jar features two chambers

Barcelona-based Quadpack has launched a double-chamber mono material packaging format for cosmetic products. The new jar, called the Duetto holds two different creams separately in 40ml compartments, making it ideal for mask sets, night and day creams, travel essentials or any other dynamic pair of products. The mono material container is made entirely of PP (polypropylene), ensuring easy recyclability and compatibility with the majority of skin care formulas on the market. The Duetto jar is also available with up to 44% PCR (post consumer recycled) material, which would give it an “advanced level of sustainability,” according to Quadpack’s PIP (positive-impact packaging) rating system. The Duetto jar can be colour-matched, spray-coated, hot-stamped, metalised or silk-screen printed, making it an attractive, compatible and recyclable packaging solution for two complementary products. The company says that Duetto is simple, minimalist, yet highly versatile, with its walls, chambers, and cap providing plenty of scope for creative decoration.

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UK supermarket to trial coffee pod recycling

British supermarket chain Morrisons has launched a pilot in-store coffee pod recycling scheme. The pilot is being carried out with Podback, a Southampton-based recycling concern for coffee pods launched in 2020. Customers can use Podback recycling bags, fill them with their used pods, and then recycle them in a designated bin at the store's entrance. Consumers will be required to use colour-coded bags – one for aluminium pods and another for plastic pods. These pods will then be separated and sent to distinct recycling processing plants within the UK. The trial will roll out in 29 stores in July 2023 and will include stores at Milton Keynes, Basingstoke, Reading, Shefford, Watford, and Wokingham, among others. The initiative is part of Morrisons bid to achieve its target of recycling 70% of plastic packaging by 2025.

Refill Revolution (24)

The trend towards refillable and reusable packaging is gaining momentum as more companies explore ways to reduce their use of single-use, hard-to-recycle packaging. This growth is partly driven by the goal of the Plastic Pact to deliver reusable packaging by 2025. Many of these initiatives are coming from startup and smaller brands, but multinational companies are also beginning to test the waters with small-scale trials and pilots. The dry food, household, and health and beauty sectors are currently the most active in this area.

Consumer attitudes towards single-use packaging are shifting, with a growing resistance to disposable packaging. The innovations in refillable and reusable packaging can be categorized into the four models outlined by the Ellen MacArthur Foundation: Refill at home, Return from home, Refill on the go, and Return on the go. The dry food, household, and personal care sectors are leading the way in this area. Many of the in-store examples of refillable and reusable packaging are currently small trials and pilots, as major retail chains test the waters with a limited number of initiatives in select outlets. The next steps of these major retailers will be watched with interest.

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Refill Revolution

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Global food and drink giants collaborate with foundation to assess future of returnable packaging
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Postal delivery service now offers reusable packaging as standard
Pharmacy products available in compostable pouches and refillable jars
Redesigned spray bottle is reusable and more user-friendly
German start-up replaces paper with reusable cotton bags for bakery products
Spirit supplier reduces CO2 emissions by using eco-boxes and refill pouches
Beauty and skincare packaging supplier launches refillable glass jar
Stackable cosmetic system is refillable
Coffee on-the-go change with new digital, returnable cup system
Pizza franchise trials reusable packaging in Dubai
Beverage giant pilots reusable packaging at large-scale events
Four-piece reusable cutlery set aimed at replacing single use items
New shower gel pack features compostable refills made from bamboo starch
Postal service introduces reusable shipping bags
Reusable crate pilot aims to remove paper bags for grocery home delivery

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Skincare company offers customers refillable option

London-based skincare company Necessary Good has partnered with OnRepeat to offer refillable skin care packs made from cellulose and a bio-based biodegradable film that can be deposited into glass bottles. The company's primary packaging consists of durable recyclable glass bottles. Consumers can order a refill pouch and receive it within two days. Necessary Good urges customers to decant the refills into glass bottles within five days because it has a limited shelf life once filled. The pouch is made from 100% biodegradable and compostable materials, which can degrade quickly once filled. The mixed bio-based material comprises layers of wood cellulose and aluminium, which can be composted at home or industrially. The pouch is certified as food-safe and can break down entirely in 32 weeks in a home compost heap.

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Luxury fashion brand launches its first refillable perfume

British luxury fashion house Burberry has announced that it is launching its first refillable perfume. Called Burberry Goddess Eau de Parfum, the fragrance is housed in an elegant bottle with a gabardine-inspired gold label on the outer casing, referencing Burberry's long-standing heritage, while the bottle is modernised with a gold medallion. The launch of Burberry Goddess is supported by a campaign featuring actress and new ambassador for Burberry Beauty, Emma Mackey. Burberry Goddess is available in a 30ml bottle, priced at £68, a 50ml bottle at £95, and a 100ml bottle at £130. The refill contains 150ml and is priced at £130. The range also features Burberry Goddess shower gel and body lotion. The fragrance is said to be a unique gourmand aromatic scent led by a powerful trio of distinct vanillas, which is then wrapped with notes of lavender essence from Provence and earthy notes of cocoa and ginger roots.

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Reusable cup system offers consumers incentives to return cups

Turn is a California-based reusable cup system for events and businesses and claims to be the world's leading scalable reuse system. The company's patented smart cups are fitted with digital tracking technology and come in all shapes and sizes. Built from recycled polypropylene, aluminium, or stainless steel, they can be reused up to 120 times, at which point they are then recycled. After using the reusable cups, consumers return their empty cup to a smart collection bin. By scanning the cup on the bin's entry slot, they get points toward rewards like discounts, prize draws, and so on. Consumers can keep track of their rewards using the TURN app, redeeming them from distributing businesses. The TURN system also features a washing operation. The company's patented smart washer is 500% more efficient than alternatives and can be transported to venues for mass on-site cleaning. Turn claim that the system benefits consumers, businesses, and the planet.

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Luxury perfume brand offers refill service

Le Labo, based in New York, was founded in 2006 by two friends wanting to “create a revolution” in a world of conventional perfumery. Tired of seeing soulless and unsurprising scents as the only options, they set out to disrupt the market and serve up something that exudes soul, difference and artistry, stepping away from any practice or idea that leans towards convention. The company now offers a refill solution for its range of Classic Collection perfumes. Available for either 50ml or 100ml sizes, the customer sends their empty perfume bottle in Le Labo’s dedicated packaging. Upon receiving the bottle, a lab technician will refill it with the same scent and an updated personalized label. Customers will be reunited with their favourite scent between 5 to 10 business days. This option is only available in the US at present.

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Hungarian startup refills deodorant cans

Hungary-based Respray Solutions has launched a refillable spray deodorant solution for existing deodorant brands. The solution consists of a refillable deodorant can and a refill station. These stations are expected to be placed in drugstores and supermarkets, where customers can refill their own cans. The company has launched its first pilot in collaboration with health and personal care retailer Rossmann Hungary. Its customers can purchase ISANA refillable deosprays in three different scents Blossom, Cosmic Breeze and Aloe Vera. Respray uses refillable packaging and uses compressed air as a propellant, which greatly reduces emissions from product use. To refill their cans, the customer removes the spray cap and actuator and then inserts the can into the refill station, where it is then refilled. After filling, a label is generated indicating what the can has been filled with, including a barcode, so that the customer can then pay for their refilled can.

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American company cleans and resells glass bottles for reuse

Conscious Container is a California-based company aiming to build a refillable glass circular economy by washing and reselling bottles to reduce CO2 emissions and mitigate supply chain issues. It is estimated that 110,000,000 glass bottles go into US landfills daily. Conscious Container receives used bottles from numerous sources, which the company then sorts, washes and inspects them to ensure they are suitable for reuse. The company then sells the bottles directly to beverage producers through their website. Refillables have an 85-95% lower carbon footprint, use much less water, and require significantly less energy than the production of single-use bottles. A Canada's Ontario Liquor Board study estimates that washing a ton of refillable bottles (4,000 12oz bottles) uses 92% less energy than is needed to manufacture a ton of glass.

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Global takeaway coffee company explores reusable cups

Global coffee chain Starbucks has started a pilot programme in California that offers customers reusable cups to go. When the cups are returned to a smart bin, they're cleaned and used again. The company is testing this new reusable model, which includes an option to take a free, reusable to-go cup home from the store and then drop it off the next time the customer gets coffee. The coffee giant has partnered with Turn Systems, a company that specializes in designing reuse systems, to set up the pilot. The "Borrow A Cup" pilot, which will last for 10 weeks, is one in a series of tests that the company has been running over the last few years as it works toward a larger goal to cut waste in half by the end of the decade. According to the company, it uses around 6 billion disposable cups a year worldwide.

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German bicycle manufacturer to start testing reusable packaging

German bicycle manufacturer Riese & Müller has announced that it is moving to reusable packaging for its e-bikes and small parts. German suppliers of reusable packaging Circular Logistics and rhinopaq will be supplying the packaging – the former supplying a solution for e-bikes, the latter for small parts – both solutions feature packaging made from PP (polypropylene). In September, the reusable packaging for e-bikes will first be tested with selected specialist dealers. In the first step, up to 60% of the e-bike packaging and up to 70% of the packaging in small parts shipping will be converted to reusable packaging by the beginning of 2024. The move will result in a saving of 905 tonnes of corrugated board per annum. The company expects the PP bike packaging to be reused up to 30 times, meaning a saving of around 80% CO2 compared to conventional packaging. The boxes are closed with Velcro fasteners, and no adhesive tape is used.

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Global food and drink giants collaborate with foundation to assess future of returnable packaging

The Ellen MacArthur Foundation's Plastics Initiative has announced that it will collaborate with Unilever, Pepsico and Danone to create a vision for the future of scaled returnable packaging systems. Modelling will predict scaled reuse systems' economic, environmental, and experiential performance compared to single-use alternatives. Although refillable and returnable packaging pilots are thought to be increasing and making positive progress, the foundation emphasises that isolated projects cannot make large-scale economic or social impacts. It is therefore pushing for system design at scale to help drive the development of a widespread returnable system. The foundation believes in a standardised vision for the future of returnable packaging, shared understanding, improved data, and a united stance to bring to policymakers. The work's conclusion will be finalised over the coming months, and the full modelling results will be published with a technical appendix later in the year.

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A sustainable path to a zero-waste antiperspirant

Life Supplies is a London-based refill scheme that offers a zero-waste, sustainable, and refillable antiperspirant deodorant. The scheme works through the use of ‘Lifetime Bottles’. Shoppers purchase the bottle, which has reportedly been designed to look good in the bathroom and not just on a supermarket shelf. Life Supplies will fill the bottle with a one-month supply of plant-based formula and deliver it to the customer’s door. Customers can switch to Life Supplies’ refill system, which is claimed to cut plastic waste by up to 98%. Life Supplies delivers refills in recyclable paper-based cartons, each containing content that lasts for months, meaning fewer deliveries. It is claimed that by using Life Supplies’ refill system, customers can reduce their plastic waste and contribute to a more sustainable, circular future.

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Postal delivery service now offers reusable packaging as standard

Austrian Post is now offering a new reusable packaging option called Post Loop for all of its business customers. Online shops can now use it to send their products in reusable packaging. Recipients remove the product, fold the packaging and return it via mailboxes, post partners, post offices or self-service machines. The packaging is collected by Swiss Post, inventoried and processed for the next shipment. Depending on the packaging items, it is expected that up to 30 shipping cycles can be successfully completed. Post Loop packets and bags come in multiple sizes of packaging made from wood pulp and recycled PET. Thanks to sustainable production and professional recycling, the packaging causes fewer emissions than comparable disposable boxes from the second use. Each additional shipment saves additional CO2 emissions and raw materials. The reusable packaging was developed with the Danish packaging specialist RE-ZIP and the German start-up Hey Circle.

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Pharmacy products available in compostable pouches and refillable jars

Cabinet Health is a New York-based online provider of pharmacy products. The company is on a mission to make the industry more sustainable by replacing standard plastic with refillable shatter-resistant glass bottles, which consumers refill from compostable pouches. Topping each bottle is a colourful child-resistant square plastic cap with a bayonet locking closure and integrated magnet. Nestled inside a concave area on the top of the closure is a separate, removable magnet upon which is printed directions for the medication, expiration date, lot number, and other required information, as well as a QR code consumers can use to order medication refills. The bottles are available in small and large sizes. They are also stackable for easy organization on consumers' medicine shelves. Also, having a low, square profile, the Cabinet system takes up a fraction of the space in a medicine cabinet than traditional bottles.

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Redesigned spray bottle is reusable and more user-friendly

Florida-based Nexshift is a company focused on designing products that improve and outperform offerings currently on the market. The company's flagship product is PIVOT. It was developed because current spray bottles waste time and energy pumping unwanted air, waste money by discarding unreachable levels of fluid early and waste plastic by being mass-produced for single-use. With PIVOT, there's apparently no more need for priming or excessive pumping, and no more product wasted or plastic mounting in the landfill. PIVOT's patented self-adjusting handle freely pivots 180º, allowing users to spray at any angle until the last drop. Its ergonomic design makes for a more efficient spray tool. The patented pivoting trigger head keeps the bottle vertical, preventing air from entering the supply tube. PIVOT is also around 40% lower in height than most bottles, making it less prone to tipping over and spilling.

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German start-up replaces paper with reusable cotton bags for bakery products

WECARRY is a Munich-based startup that supplies bakeries and their customers with reusable bags in a smart, deposit-based format. The customer can choose the WECARRY reusable bag at the counter – available in two sizes for a deposit of €1 each. The customer can use their WECARRY reusable bag for shopping as often and as long as they want. The customer can receive their deposit payment on return of the bag at any participating partner. A WECARRY reusable bag can replace up to 300 disposable paper bags and are made of 100% cotton. WECARRY is reported as more sustainable than usual disposable packaging. With every reusable bag, the shopper actively saves energy, water and wood. For bakeries, WECARRY bags strengthen the bakery's sustainability image while also anticipating potential legal tightening of the packaging law on single-use packaging. WECARRY also organise the collection and cleaning of bags as required.

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Spirit supplier reduces CO2 emissions by using eco-boxes and refill pouches

London-based Sapling Spirits say they exist for three reasons – to lead the way with sustainability in the drinks industry, tackle climate change, and make world-class spirits. The company focuses on reforestation, regenerative farming, waste reduction and sustainable packaging. The company supplies bars and restaurants with 5 litre eco boxes so that bottles can be refilled and reused. As bottles are carbon-intensive to create, by eliminating glass waste, the company says it is reducing its carbon footprint by around 37%. One eco box saves seven bottles from being created, with one bottle using about 1.03kg to produce. Their eco boxes have reported saved over 17,400kg of CO2 from entering the atmosphere. The company also supplies customers with pouches to refill their bottles. Removing the glass bottle reduces the company's carbon footprint by 25%. The customer refills their bottle and puts the empty pouch in the nearest post-box for recycling, no postage is required.

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Beauty and skincare packaging supplier launches refillable glass jar

Florida-based APC Packaging has announced the launch of a new sustainable jar. Called the Glass Refillable Jar (JRGP), it is a further development of their double-walled glass jar (JGP), which was launched in February 2023. The JRGP incorporates additional sustainability features, making it a desirable choice for skincare and beauty brands worldwide. The outer jar, made from durable glass, provides an elegant and substantial feel. Complementing this is a customizable PP inner jar and cap that can incorporate PCR (post-consumer recycled) material, further enhancing the sustainability of the packaging. One of the key advantages of the JRGP jar is its ability to be refilled, a feature that resonates strongly with many conscious consumers and environmentally conscious brands. The Glass Refillable Jar has a 50ml capacity, making it ideal for various skincare and beauty products.

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Stackable cosmetic system is refillable

Pittsburgh-based cosmetic brand Subtl was launched in 2019 with one aim – to create an entire makeup routine that fits in the palm of a hand and that can be refilled for consumer convenience. The company has now launched Stak 2.0, allowing customers to build a custom makeup collection with revamped pods and packaging. Subtl used customer feedback to redesign its formula to meet clean beauty standards. The products underwent “meticulous reformulation while maintaining the quality of their colour selections.” The refillable design utilises a mono-material and bezel technology which extends the packaging’s lifecycle. The Stak 2.0 is designed to fit seamlessly into the lifestyle of on-the-go individuals, travellers, working professionals and beauty minimalists seeking a personalised and convenient makeup routine. The available stackable products include a jojoba-infused lip and cheek tint, concealers, blushes, highlighters and eyeshadows. Each stackable product costs US$14 (£11).

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Coffee on-the-go change with new digital, returnable cup system

The Re-Universe Cup System, a digital, returnable cup scheme, aims to mitigate the environmental impact of single-use cups. Each cup is identifiable through a multi-brand intelligence system, tracing its origin and eventual return destination, facilitating joint and individual brand participation. Customers can return these cups at specified points, with their deposit reimbursed via a mobile app. Starting summer 2023, Blenheim Palace in the UK will implement the Re-Universe technology alongside Circular&Co. returnable cups. Visitors purchasing hot drinks will receive them in these reusable cups, with a £2 deposit included in the price, and single-use cups will be eliminated. The deposit can be reused, converted into a Blenheim voucher, donated to charity or refunded. The initiative aspires to eliminate 400,000 single-use cups, reduce carbon emissions by 32 tonnes, and offer visitors insight into their individual contribution and wider sustainability efforts.

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Pizza franchise trials reusable packaging in Dubai

Dodo Pizza is an international franchise chain that operates in 17 countries. They have teamed up with PIZZycle, a German start-up that created a minimalistic container that can be reused up to 500 times, saving up to 500 disposable pizza boxes. Tests were conducted by both Dodo Pizza and PIZZycle to ensure pizzas were kept warm and in good condition during delivery. It is claimed that the packaging keeps food warm for an hour. Dubai was seen as the ideal place to test reusable packaging since it is an innovative and flexible market, and customers in Dubai are said to be also quite concerned about the environment. Dodo Pizza is the first food and beverage company to offer this option in the Middle East and the first worldwide to make it free of charge for customers. The company is known for its digital-first approach and new sustainability initiatives.

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Beverage giant pilots reusable packaging at large-scale events

Coca-Cola North America is accelerating pilot schemes to replace single-use cups with end-to-end reusable cup solutions in large-scale sports and entertainment venues, cinemas, festivals, and events. Coca-Cola is entering into a partnership with r.Cup, who claim to be the number one provider of reusable cups in the US. Concessionaires have the option of several durable PP (polypropylene) cups. Once the cups are binned and collected from each location, r.Cup collects, washes, sanitizes, inspects, and repackages the cups to be used again. With support from Coca-Cola North America, r.Cup will expand its infrastructure and frontline capacity in key cities, including opening new wash facilities later this year and directing a portion of profits to local nonprofit organizations working to address the packaging waste crisis. Coca-Cola recently committed to a goal of 25% of its global product volume being served in reusable packaging by 2030.

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Four-piece reusable cutlery set aimed at replacing single use items

Chilly's is a London-based company that began by selling bottles that could keep drinks cold for 24 hours. They have now launched a 4-piece full size reusable cutlery set. The set comprises a fork, knife, spoon and telescopic straw, made from rPET (recycled polyethylene terephthalate) and comes in a sleek aluminium container. The set was designed by Studio Wood, based in Bournemouth. A spokesperson for Studio Wood explained that cutlery and straws are still often used and discarded in their single-use form. Their challenge was to create a solution that people are happy to use over single-use alternatives. They also remarked that while there are cutlery sets on the market, they tend to lean into utility rather than usability, comfort and familiarity. The target audience is specifically those looking to reduce the need to use single-use cutlery when eating/drinking on the go.

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New shower gel pack features compostable refills made from bamboo starch

British sustainable deodorant company Wild have collaborated with London-based Morrama Design to develop packaging for their new range of shower gel. The packaging, which has been designed to withstand warm and wet bathroom conditions, is comprised of a compostable refill that is housed inside a reusable aluminium outer bottle. Following a research and development phase, bamboo starch was chosen as the primary material for the refill due to its waterproof properties and that it is fast-growing. The shower gel refills are made from 70% bamboo starch, with the remaining 30% made up of plant starch from agricultural waste, chosen to reinforce its structural integrity. Once the refill is empty, it can be put on the compost heap or in general waste, where it will reportedly biodegrade faster than a banana peel. The only plastic part of the product is the pump, made from 50% post-consumer recycled plastic. It's not clear if this is recyclable.

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Postal service introduces reusable shipping bags

Austrian Post has become Hey Circle's biggest customer since the company was started in April 2022. Following a public tender, the Munich start-up, a provider of reusable shipping packaging for e-commerce, will provide 40,000 reusable shipping bags in small, medium and large sizes. The bags can be easily folded and returned via the mailbox. For empty returns, the return address is already attached to a sticker on a fold-out flap. Conventional returns are returned to the shipping customer with a return label. Consumers can find return shipping instructions directly on the bag and at postloop. The mailing bags have individual branding, come in light grey with a linear leaf print, and bear the Austrian Post logo. The reusable packaging was subjected to a tough, practical test with scientific support. All of Austrian Post's business customers now have the opportunity to switch to a more sustainable packaging solution.

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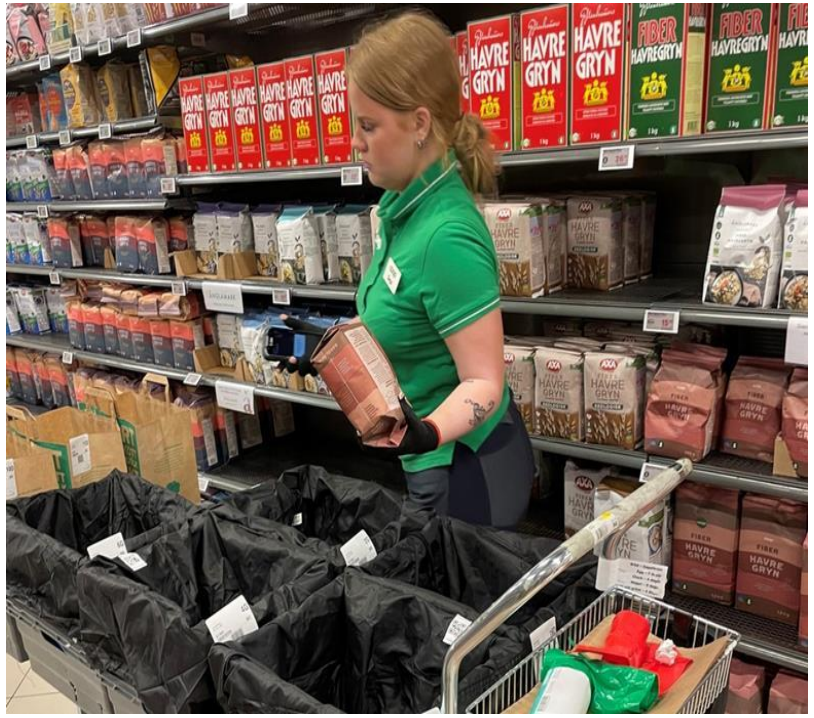
Reusable crate pilot aims to remove paper bags for grocery home delivery

Co-op Sweden has joined forces with Gordon to trial home deliveries of reusable crates and bags in a scheme to reduce the climate impact of paper bags. Gordon is a last mile company that delivers refrigerated goods to consumers' homes in four Nordic countries. Alongside physical packaging, it offers logistics and tech solutions designed to ensure traceability and communication with consumers. Its partnership with Co-op marks the first time a grocery chain has piloted the system, known as Gordon Circular. The packaging features a solid outer crate to protect the goods during transit and a soft reusable bag for picking and handling during the delivery process. Gordon then collects the used packaging on the next delivery, whereupon the crates are washed for reuse. A life cycle analysis suggests that five loops of the crate results in a lower climate impact than the single use of a paper bag.



Paperisation (10)

The packaging industry is experiencing a substantial shift in materials, primarily driven by objectives centered around sustainability. The replacement of plastic remains a priority for many brands and retailers, as they seek alternatives that may provide a smaller environmental footprint or at least be more favourably received by consumers focused on anti-plastic. This month, we tracked 10 new initiatives in this direction.

ThePackHub continues to document numerous cases of brands and retailers transitioning primarily from plastic to paper-based alternatives. While some substantiate their moves with positive environmental impact data, not all changes can withstand rigorous environmental examination. The truth is that we're currently in a period of substantial transformation, where recyclable plastic is often replaced with different materials because consumers perceive it as the environmentally conscious choice. Most material changes typically follow significant investments in machinery and novel processes. These changes are made with a long-term view, and any backtracking seems far in the future.

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Paperisation

Organic protein sports bars switches to paper wrapper
Leading Australian tea producer switches to paper packaging
Paper-based packaging chosen by health food company
German biscuit maker moves to sustainable board carrier tray
Laundry scent booster moves from plastic to board packaging
Joint development results in fibre-based frozen food packaging
Partnership produces all-fibre bottle that is ready for scale-up
German sushi maker switches to paper-based packaging
Global beverage brand introduces paper pack for coffee
Laundry detergent sheets in board-based box are light and compact

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Organic protein sports bars switches to paper wrapper

Moonvalley is a Swedish sports nutrition brand that produces organic protein and energy bars, sports drinks, and post-workout mixes. They have announced that they are now moving the packaging for their chocolate-covered protein bars from plastic to paper. The new paper-based packaging is being supplied by Swedish pulp and paper manufacturer Billerud, and uses the company's Recyclable Flow Wrap paper, which is based on renewable and recyclable wood fibres sourced from sustainably managed forests. According to the company, moving from plastic packaging to paper packaging reduces CO2 emissions during the production phase. Because it is made of paper, consumers can recycle the wrappers with other paper products at kerbside, making it more sustainable than other packaging in this segment. The paper packaging is now available on Moonvalley's 18-pack Chocolate Dipped Raspberry bars, Cocoa Protein Bars, and the Mixbox.

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Leading Australian tea producer switches to paper packaging

Madura Tea, one of the largest tea estates in Australia, has moved away from its previous plastic-based packaging and into a pack made from paper. The new packaging is supplied by German companies Koehler Paper, in conjunction with printers and converters Gundlach Packaging Group. Madura Tea chose Koehler NexPlus Seal Pure MOB 72 gsm, which has a mineral oil barrier and offers protection against MOSH/MOAH (mineral oil saturated hydrocarbons/mineral oil aromatic hydrocarbons). After several promising tests, the products are now available on the Australian market. A spokesperson for Koehler said that NexPlus Seal Pure MOB, made from 100% virgin fibre pulp and therefore suitable for contact with food, impressed everyone involved in the project thanks to its outstanding barrier properties. The new paper-based solution, which has a significantly reduced carbon footprint and is 100% recyclable, replaces the previous packaging, a multi-layer metalised OPP (oriented polypropylene) structure.

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Paper-based packaging chosen by health food company

German health food and wellbeing store Vom Achterhof has successfully converted the packaging for some of its product lines to sustainable solutions manufactured by global packaging solutions provider Sonoco. The company will move some of its natural food and supplement products into paper-based packaging with cork lids. Sonoco's packaging was apparently chosen for its contemporary design, 'exceptional' shelf appeal, ability to maintain product freshness, and overall environmental friendliness. A spokesperson for Vom Achterhof said that as well as allowing for a new range of product sizes and prices, the company believes that the new packaging will get a positive response from consumers. Vom Achterhof has calculated that it distributes up to 1,500 packages to its customers every day. As such, the new packaging is hoped to positively impact waste reduction efforts.

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German biscuit maker moves to sustainable board carrier tray

Griesson – de Beukelaer is a German manufacturer of sweet and savoury biscuits. For some of their Cereola range of biscuits, the company has opted for more sustainable packaging by moving to a carrier tray made from plastic to board. The tray, made from FSC (Forestry Stewardship Council) certified board can now be recycled with the consumer's other paper and board items at the kerbside. The tray will be used for the following products: Cereola The Classic, Cereola Oat Cookie and the new Cereola Banana Bread Cookie. The company has also moved its Cereola Classic, Oat Cookies, Milkys and Choc & Berry cookies into a resealable stand up pouch, which is easy to repeatedly open and close, making sure the cookies always stay crunchy and crispy. A company spokesperson said they were pursuing the goal of as little packaging as possible, as much as necessary.

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Laundry scent booster moves from plastic to board packaging

Procter & Gamble, owners of the Lenor fabric softener and in-wash scent boosters, has announced that in Germany, from September 2023, the entire range of Lenor laundry perfumes, including the Unstoppables variants, will be available in fully recyclable cardboard packaging. The new packaging is made of cardboard from FSC mix-certified forests and recycled materials and is fully recyclable via waste paper. It does have an inner layer of less than 5% plastic, which the company says is to preserve the effectiveness of the scent booster. According to the company, if all German users of Lenor laundry perfume switched to the new cardboard packaging, this would save up to 390 tons of plastic per year. The company also says choosing the right scent is even easier because you can smell the fresh scent through the closed packaging.

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Joint development results in fibre-based frozen food packaging

Helsinki-based Ahlstrom is a global leader in sustainable fibre-based materials. They have announced a partnership with The Paper People LLC, a Maryland, US-based company that was formed in 2019 to fulfil the retail demand in the US for 100% recyclable/compostable packaging. Together, they have developed and launched an innovative and sustainable solution for frozen food packaging. This new line of fully fibre-based, recyclability-certified packaging is specifically designed to replace traditional fossil-based plastic and films for frozen food packaging. The new packaging is designed to be used on existing packaging equipment including vertical form-fill-seal (VFFS), stand-up pouches and SOS (self opening satchel) style systems. The paper is available with the Paper Peoples' Paperlock G technology, an FDA-approved direct food contact heat-seal material and grease barrier that keeps grease from migrating off such food products as fries, tater tots, onion rings, and is also PFAS-free.

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Partnership produces all-fibre bottle that is ready for scale-up

Scotland-based CelluComp, and RyPax, based in California, have joined forces to develop an all-fibre bottle. CelluComp produces a product called Curran, a microfibrillated cellulose product, made from the waste stream of root vegetables, primarily from sugar beet pulp. Using Curran as a starting point, the companies added bamboo and bagasse, making a material with great strength but with minimal porosity. A thin impermeable coating is added to the bottle's interior, allowing manufacturers to take the next important step in sustainable packaging by eliminating the need for a plastic liner. The partnership is poised to scale production for industry applications from beverage, beauty, health, medicine, food and other retail brands to help manufacturers deliver a more sustainable product to reduce waste and meet both consumer needs and their own sustainability goals. RyPax and CelluComp will explore additional fibre packaging solutions, including fibre screw threads, caps, and thinner coatings.

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German sushi maker switches to paper-based packaging

German suppliers of freshly rolled sushi-to-go Eat Happy have announced that they are moving away from single-use plastic packaging and will introduce paper-based packaging with a viewing window made from cellulose. The new packaging is recyclable with the waste paper stream. The conversion to a fully recyclable packaging solution in the Eat Happy shops will take place throughout Germany for the entire sushi range, which also includes several vegan alternatives, by October 2023. By introducing the solution, developed with the help of packaging specialist UK-based DS Smith, the company has calculated that it will save more than 1,250 tons of plastic and around 3,000 tons of CO2 per year if implemented nationwide based on packaging consumption in 2022. The new packaging solution also considers the EU regulation to avoid single-use plastic.

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Global beverage brand introduces paper pack for coffee

JDE Peet's is an American-Dutch company with beverage brands, mostly coffee, tea and hot chocolate, including Douwe Egberts, L'Or, Jacobs and Tassimo. They have announced that they intend to launch a new paper pack for their soluble coffee ranges. This new solution, which the company says will be the first of its kind in the coffee market, will be recyclable. It is designed to create a more sustainable ecosystem in the soluble coffee market by incentivising the reuse of existing glass jars and tin formats. Moreover, the coffee from this new paper pack will generate the lowest carbon footprint within the existing range of JDE Peet's products. The new paper pack directly supports the company's goal of moving towards 100% of packaging designed to be reusable, recyclable, or compostable by 2030. The new range will be available in selected markets across multiple JDE Peet's portfolio brands as of 2024.

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Laundry detergent sheets in board-based box are light and compact

Global consumer goods company Unilever is bringing laundry sheets to the mass market under its Dirt Is Good (Persil in the UK) and Robijn brands. The company says that laundry sheets offer ‘ultra-convenience’. The user doesn’t have to consider whether they’re putting in too much or too little of the product. Each sheet delivers just the right dose of detergent for an optimum clean, avoiding waste through over-dosage. Also, a sheet can be halved (they are perforated down the middle) for lighter loads or a second sheet can be used for larger or more soiled laundry. The sheets are packaged in a recyclable, paper-based box which is compact and lightweight (on average 80% lighter than other formats), which means they also take up less space and are easier to carry, use and store. Robijn’s sheets launched in the Netherlands early this year, while Persil launched exclusively on Amazon in the UK in July.

Bio Alternatives (25)

This month, we've seen a continued emphasis on biobased packaging, with an introduction of 25 initiatives in this area. The development of biodegradable, compostable packaging, and novel biobased substitutes to plastic are continuing unabated. Nevertheless, the absence of widely available industrial composting infrastructures in many markets significantly hinders widespread adoption.

Moreover, there is an ongoing concern that compostable and biodegradable packages will contaminate existing recycling processes. Despite these hindrances, the bio-based packaging industry is experiencing strong growth, with numerous new projects underway, many of which may never hit store shelves.

However, the adoption of these innovative packaging solutions is not yet widespread among major brands, and their use is primarily confined to small, emerging brands seeking to establish a unique sustainable angle.

In recent times, the development of seaweed packaging has emerged as a particularly robust area.

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Bio Alternatives

Introduction of ‘thermoplastic starch’ increases compostability of PLA
Organic salad producer switches to biodegradable bags
Compostable fibre netting made from cellulose replaces plastic for fruit and vegetables
UK supermarket moves own-brand tea bags to PLA
Polymer producer introduces PHA bioplastic for coffee pods
Ready-to-drink coffee cups incorporate 30% bioplastic
Graphene-enhanced PE stretch film reduces virgin resin use
Compostable foodservice items are lined with PLA
Patented additive makes conventional plastics biodegradable
Food service packaging manufacturer moves to biodegradable technology
Sustainable trays are made from rice production by-product
Spanish single-use olive oil pots are compostable
Food tech startup creates edible coatings inspired by fruit skin
Supermarket uses sustainable packaging made from silphium fibres
Unique textured label for wine includes volcanic rock
EPS alternative is made from grain husks
Startup wants to use bioplastic to replace single-use medical devices
Partnership will develop sustainable aqueous barrier solutions for food service packaging
Self-healing plastic is also biodegradable
Printable laminating film made from PLA is compostable
Companies collaborate to bring plant-based water-soluble sachet to market
Dead flies could be used to make biodegradable plastic
Start-up launches packaging made from starch-based biodegradable material
Dried fruit producer opts for compostable packaging
New Zealand supplement producer switches to bottles made from sugar cane

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Introduction of ‘thermoplastic starch’ increases compostability of PLA

A team of researchers from the Michigan State University (MSU) School of Packaging have developed a new method to make sustainable bio-based plastics more biodegradable. The team has created a biobased polymer blend that can be composted at home and in industrial settings. To conduct this research, the team worked on PLA (polylactic acid) derived from plant sugars and not petroleum. PLA is a widely used component in sustainable packaging. However, to break down optimally, PLA requires industrial composters, which provide higher temperatures and more conducive conditions for the PLA to break down, unlike in-home composters. PLA can remain inactive for approximately 20 days before microbes digest it in an industrial composting environment. To reduce this 20-day wait, the team integrated a carbohydrate-derived material called ‘thermoplastic starch’ into the PLA. The results showed that completely compostable biobased plastic packaging was achieved.

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Organic salad producer switches to biodegradable bags

California-based ErthCycle are a provider of organically biodegradable plastic packaging alternatives. They have announced a partnership with Jayleaf, also based in California, who are a family owned and operated food distributor providing fresh, organic leafy greens. The companies claim that this partnership represents a significant step forward in the mission to reduce plastic pollution within the food production and distribution industry and create a more sustainable future. ErthCycle says its patented, third-party tested technology offers a solution to plastic pollution by creating an organically biodegradable plastic alternative. This packaging is said to use 25% fewer fossil fuels on average and, in a simulated landfill environment, has been shown to organically biodegrade 76.7% in 695 days. A spokesperson for Jayleaf said that they use over 1.3 million bags annually, and by switching over to biodegradable bags by ErthCycle, they are completely eliminating conventional plastic and prioritising environmental responsibility.

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Compostable fibre netting made from cellulose replaces plastic for fruit and vegetables

CompoPac is a German manufacturer of compostable natural fibre net made from 100% renewable raw materials and produced in a process that is claimed to be environmentally friendly. Developed to replace the plastic netting used for packing fresh fruit, vegetables and nuts, the netting is made from cellulose derived from locally sourced beech trees. The compostable fibres are certified according to DIN EN 13432:2000-12, and completely dissolve in composting plants in around twelve weeks. CompoPac nets are breathable, tear-resistant and deliver what is reported as both a natural look and a supple feel. They are available in a range of colours using food-safe dyes. For CompoPac to reduce their ecological footprint, they use renewable energy sources and process water. Aside from food products, CompoPac's netting can also be used for packing live Christmas trees and used in greenhouses as aids for climbing plants.

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UK supermarket moves own-brand tea bags to PLA

Lidl GB has announced that it is to switch to compostable tea bags for its own-brand tea bags. The new bags will be made from PLA (polylactic acid), a polyester typically made from fermented corn or sugarcane starch. The move is expected to divert up to 800 million bags annually from traditional waste bins to food or green bins. A spokesperson for Lidl said that plastic reduction was a huge priority for the company, and this one change will reduce the amount of plastic in each pack by two-thirds, culminating in the elimination of over 250 tonnes of plastic from packaging a year. The announcement is part of Lidl's ongoing efforts to reduce its own-label plastic packaging by 40% by the end of 2025. Own-brand products that will make the move include Lidl's Deluxe Fairtrade Assam Tea and Knightsbridge Gold Blend Tea.

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Polymer producer introduces PHA bioplastic for coffee pods

Portuguese polymer producer Cabopol has announced a new addition to its range of sustainable coffee capsules. Cabopol already offers capsules made from Sofiprime (Recyclable PP compounds with barrier properties) and Biomind (biodegradable and compostable compounds). Now the company has announced the launch of capsules made from Biomind PHA. PHAs (polyhydroxyalkanoates) are degradable, biocompatible, thermoplastic polyesters derived from microorganisms. Capsules made from Biomaind PHA are also biodegradable and compostable, produced from renewable resources, but in addition, they are designed to break down naturally in both soil and water environments. Biomind compounds were designed for capsules to achieve OK Compost and OK Home Compost certification, thus ensuring that they meet rigorous standards for biodegradability. Despite their sustainable nature, these capsules offer comparable performance characteristics to traditional plastic capsules. Cabopol strives to contribute to the packaging industry by providing sustainable alternatives that balance functionality, performance, and environmental responsibility.

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Ready-to-drink coffee cups incorporate 30% bioplastic

Lactalis Nestlé Spain has reformulated the make-up of its ready-to-drink latte coffee cups to improve its sustainability profile. The new cups incorporate plastic that contains 30% of second-generation biobased PP (polypropylene). The change follows previous moves to reduce the amount of plastic used, namely by removing the plastic overlap, and plastic label with one made of board, making them easy to recycle. The company says that these measures make them the first brand in the category that uses bioplastics in the composition of its cups. Nestlé also says that the move gives a second life to waste from renewable natural resources and significantly reduces carbon footprint. The new cups also have an increased capacity of 8%, moving to 205 ml instead of the previous 190 ml, thus offering a greater quantity of product without the total plastic used in the packaging increasing.

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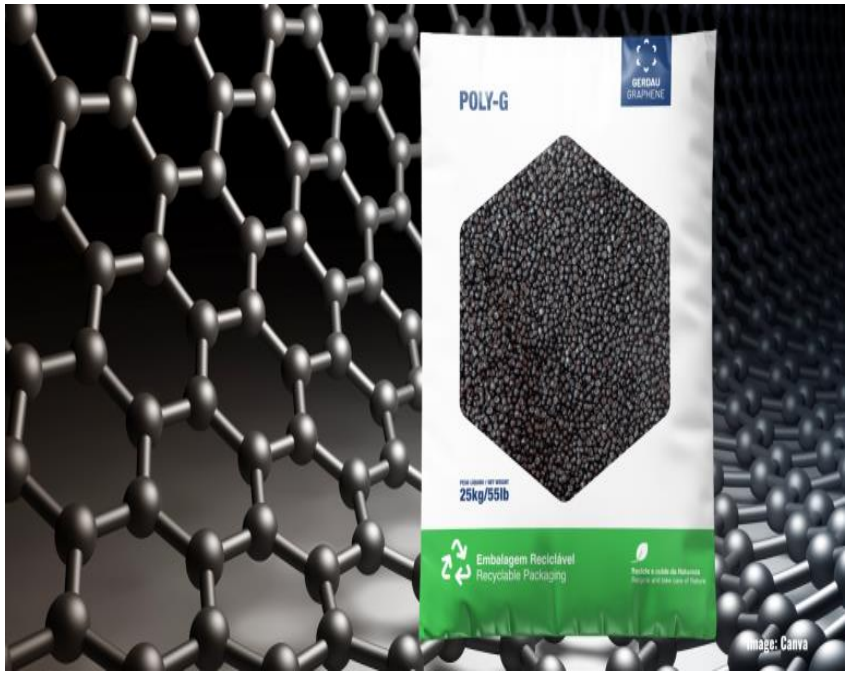
Graphene-enhanced PE stretch film reduces virgin resin use

Two Brazilian companies have joined forces to develop a new graphene-enhanced stretch PE (polyethylene) film, in what is said to be a world's first. Developed using Gerdau Graphene's specialised technology, the film produced with Packseven, one of Brazil's largest flexible film makers, is ultra-thin and, reportedly, more durable than standard alternatives. As a result, it expects to reduce the amount of material consumed per pallet, and it is claimed that using Gerdau's graphene masterbatch reduces virgin resin use by 15% to 30%. As one of the strongest materials on Earth, graphene consists of an atomic monolayer of carbon atoms in a hexagonal structure similar to a honeycomb. Gerdau Graphene states that, when blended with plastics, it enhances a material's physical and mechanical properties, including its strength; barrier properties against liquids and gases; protection against weather, oxidation, and UV light. The new film is expected to be available for sale by Q3 2023.



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Compostable foodservice items are lined with PLA

Cambium Distribution is a Montreal-based supplier of foodservice products such as cups, bowls, tableware and bags made from unbleached board. Where a barrier is required for some products, such as coffee cups and food bowls, instead of using plastic made from fossil fuels, the company uses PLA (polylactic acid), which is derived from corn starch. The company is keen to point out that other packaging available on the market which declares that its petroleum plastic lined packaging is recyclable may not be. Although petroleum plastic and cardboard are initially recyclable materials, once these two materials are combined, the containers then become non-recyclable, since the two materials are inseparable for sorting centres. Cambium does not make the claim that their items are recyclable, but states that because their board items are lined with PLA, this makes their products compostable.

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Patented additive makes conventional plastics biodegradable

ECO Packaging is part of the Natupharma Group of companies, with its roots in Scandinavia. The company is a leading innovator and supplier of food supplements for humans and animals and sports nutrition. The company claims that their packaging solutions are truly biodegradable and break down to CH4 (methane), CO2, biomass and water, guaranteed by the manufacturer for the additive to break down in less than ten years. The company takes a polymer, PE (polyethylene), PP (polypropylene) or PS (polystyrene) and adds an additive in a patent pending process to create this biodegradable solution. The additive can work on either blow moulding or injection moulding machinery and is added just like a manufacturer would a colour by weight as a percentage (at a level no less than 2% in this case). Apart from pots, the additive can also make biodegradable blister packs and pouches.

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Food service packaging manufacturer moves to biodegradable technology

WinCup, a Georgia-based manufacturer of disposable food service products, has announced it will transition its core traditional products, including foam cups, food containers, bowls, lids, and polypropylene straws, to its Vio biodegradable technology platform. A spokesperson for the company said that they felt that the time was right for them to take a sustainable leadership position in the industry by investing in and transitioning all of their WinCup branded foam, lids, and polypropylene straws to the Vio biodegradable technology, not because it would be easy, but because it is seen as the right thing to do. They said that customers were demanding more sustainable options. Vio cups biodegrade 92% after four years, Vio lids biodegrade 86.8% after nearly 8 years, & Vio straws biodegrade 88.5% after seven years.

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Sustainable trays are made from rice production by-product

Israel-based compostable and sustainable packaging supplier TIPA has added a range of food-safe trays made from waste straw from rice production, known as ‘paddy straw trays’. Previously this material was considered a waste material and often burned, causing air pollution and environmental degradation. However, with the advent of sustainable practices, this agricultural residue has now been repurposed into sustainable packaging. These paddy straw trays can be used for various purposes, such as packaging fruits, vegetables, dry food, and even holding hot meals for up to 48 hours. As they are made from natural materials, when placed in a composter at the end of their life, they become nutrient-rich compost. They can also be disposed of with paper waste in the appropriate bin. TIPA says that the trays meet the highest sustainability standards, making them the ideal packaging for businesses that care about the environment.

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Spanish single-use olive oil pots are compostable

Two Spanish companies have joined forces to bring a compostable single-use pot for extra virgin olive oil to market. The pot, from ADBioplastics, based in Valencia, is made from a material called ‘PLA-Premium’ (polylactic acid) is said to have improved elongation at break, making it less brittle and more elastic. It is also said to have similar water vapour and oxygen transmission qualities as PET (polyethylene terephthalate). It is an industrially compostable bioplastic and can be disposed of in the organic bin (where local guidelines permit it). These single-use products will be marketed by oil and dressings producer and marketers Capricho Andaluz in the coming months, initially under the Capricho Andaluz and Borges brands. The grades of this bioplastic are OK Compost certified by TÜV Austria, which guarantees that, under industrial conditions, the material reaches the disintegration stage within a maximum of 3 months.

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Food tech startup creates edible coatings inspired by fruit skin

Foodberry is a food tech start-up based in Boston, USA. The company has developed edible coatings inspired by fruit skin that can extend the shelf life of moisture-rich foods. The company is mimicking the work of Mother Nature by creating barriers for foods like hummus, coffee, ice cream, yoghurt and peanut butter through design principles and natural chemistries found in fruit skins and peels. The technology the company is using applies two concepts – microencapsulation when small capsules coat active substances, and controlled release, which is when substances are released at a programmed rate. As a result, Foodberry creates edible, non-permeable, plant-based coatings meant to replace wasteful packaging such as plastic. The hummus product is covered in a skin made from the fibres of roasted red peppers, and the ice cream product has a range of coatings.

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Supermarket uses sustainable packaging made from silphium fibres

In Poland, supermarket chain Kaufland, part of the German Schwarz Group, is using a board for its K-Bio salmon made from silphium fibres from PreZero, called OutNature. Silphium has been cultivated in Germany for several years, until now as an energy crop used to produce power, gas and heat. Compared to trees that grow for many years, the Silphium plant grows up to 3.5 m in a year, and thanks to its deep root system, silphium plants extract all the necessary nutrients from the soil and do not require artificial fertilisers. This prevents the leaching of nitrates from groundwater, and not using artificial fertilisers also contributes to preserving a fertile humus layer. In addition, unlike wood processing, no chemicals are used in the extraction of the fibres. The silphium fibres are mixed with conventional pulp or recycled papers to at least a level of 35% content.

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Unique textured label for wine includes volcanic rock

The 277 winegrowers of the Achkarren winegrowers' cooperation in the Kaiserstuhl area of Germany produce their wine from soil that was volcanic 16 million years ago, which they believe makes their product unique. To reflect this, their local label supplier Vollherbst has created an equally unique textured label that features traces of volcanic rock for their "ripened on volcanic rock," Pinot Gris wine. The label company pulverised parts of the volcanic rock, mixed it with varnish and applied it with screen printing, using fine-mesh sieves, which enabled the components to stick together easily. The three-part label is made of "Mariele Blanc" paper, which has a slightly hammered texture. For aesthetic effect, fine silver particles were also mixed into the varnish. If you run your hand over the textured volcanic area, it apparently feels like sandpaper. In total, 60,000 bottles were available for sale at German supermarket Rewe Feine Welt throughout Germany.

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EPS alternative is made from grain husks

Proservation is a German company that has developed an innovative packaging solution out of grain husks. Their product, called RECOU, is an alternative packaging cushioning material based on grain husks, the wrappings of cereal grains. For certain types of grain, the husks are separated from the grain during the first processing step and accumulate in large quantities at regional hulling mills. The company uses the naturally grown cavities of the husks for the necessary cushioning and insulating effect of the packaging material. RECOU is completely biogenic and biodegradable. It can be produced in a few simple and low-energy process steps and disposed of in the organic waste garbage bin. Thanks to a specially developed ecological binder, RECOU can be shaped as desired, and due to comparable material properties, it has the potential to substitute petrochemical packaging solutions such as EPS (expanded polystyrene) and represent a sustaibale alternative for many applications.

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Startup wants to use bioplastic to replace single-use medical devices

SymbioTex is a British startup hoping to revolutionise the production of packaging and medical devices currently made from single-use plastic. After seeing the extent of single-use medical plastic waste whilst on placement in the NHS, the founder started SymbioTex. They discovered that every year in the UK alone 73 million inhalers are distributed and only 0.5% ever get recycled. Cosmetics packaging is also being targeted as a potential market. SymbioTex uses seaweed – a renewable material source which sequesters carbon as it grows. Unlike some bioplastics, SymbioTex's material is completely home-compostable. The production process also reportedly requires little energy compared to petroleum-based plastics or existing bioplastics that often require temperatures of 170°C+. Seaweed production requires no pesticides, and no special care is required. There is no harm to biodiversity or habitats, nor any harmful by-products. There are also opportunities for those communities that rely on seaweed cultivation.

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Partnership will develop sustainable aqueous barrier solutions for food service packaging

Kemira, a Finland-based leader in sustainable chemical solutions for water-intensive industries, and US-based Jain Chem, a leader in manufacturing customised chemical solutions, have announced an ongoing partnership to develop and market aqueous barrier coatings for recyclable paper and board products in the Americas region. The partnership will focus on barrier solutions that create moisture, oil, and grease resistance, primarily for food service packaging. These solutions help replace commonly used polyethylene (PE) and per- and polyfluoroalkyl substances (PFAS) in paper and board end-use applications, such as cup stock, wrapping paper, and folding carton packs that are microwavable, oven-safe, and suitable for frozen food. Jain Chem barrier technology is based on recycled raw materials and enables recyclable and repulpable end-products. Rapid growth for aqueous barrier coatings is anticipated in the Americas, where the companies note that consumers and brand owners are focusing on plastic packaging alternatives.

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Self-healing plastic is also biodegradable

In 2016, researchers at the University of Konstanz, Germany, developed a plastic that was harder than common plastics, non-flammable, and even had self-healing properties. Potential applications for the material could include, for example, a scratched phone screen that could be repaired with a drop of water. It was also energy-efficient as it could be produced at room temperature, and before hardening, it could be manipulated into any shape, like chewing gum. By adding water, it could be converted back to its pliant state and reused. The issue was that this new material did not degrade. The team have now solved this issue by moving from petroleum-based polyacrylic acid to polyglutamic acid, which can be produced with the help of microorganisms and is completely biodegradable. In degradation experiments, the biologists showed that microorganisms found in forest soils, for example, began metabolising the mineral plastic after just a few days. After only 32 days, the microorganisms completely degraded the plastic.

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Printable laminating film made from PLA is compostable

LAM’ON is a Bulgarian start-up that wants to disrupt the printing and packaging market with two innovative products – a bio-based and biodegradable laminating film called LAM’ON and a packaging film called PACK’ON. Both are made from corn and have the full performance capabilities of plastic film but are based on PLA and are therefore, compostable. No recycling is required. They are completely compatible with current printing and packing industrial machines for immediate large-scale market entry and do not require changes to machine settings. LAM’ON is reported as the only solution for print finish lamination suitable for composting, applicable on standard machines currently used by printers, and available at a competitive price. The polymer threads in LAM’ON’s products are biaxially oriented, which makes them stronger, more durable, and less prone to tearing, unlike other PLA-based films, and allows for much more diverse use.

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Companies collaborate to bring plant-based water-soluble sachet to market

MACK is a biotech cleaning solution supplier based in Dorset, UK. They have collaborated with London-based Notpla who provide sustainable alternatives to single-use packaging through the use of seaweed and plants. Together the companies have unveiled a sustainable clothes detergent sachet. Claimed to be an industry-first, the packaging incorporates Notpla's plant-based, water-soluble film. This is Notpla's first commercial application of its film material into a refill cleaning product line. Designed for homeware and laundry products, the seaweed-based packaging solution dissolves in water and naturally biodegrades without leaving microplastic residue. The material was subjected to a nine-month biological degradability assessment, which surpassed industry-standard tests. Seaweed is one of the planet's most abundant biomass sources, growing at up to one metre per day. Its production does not compete with food crops, requires no fertiliser or freshwater to produce and actively sequesters carbon dioxide.

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Dead flies could be used to make biodegradable plastic

At a meeting of the American Chemical Society (ACS), it was announced that dead flies could be used to make biodegradable plastic. Insect carcasses are an abundant source of chitin, the biopolymer that strengthens the exoskeletons of crustaceans and insects. It has been suggested that waste product left over from farming black soldier flies could be a source of chitin as it has no other competing uses, such as food. The larvae of the flies contain proteins and other nutritious compounds so they are being raised for animal feed, and they also break down waste so they are being bred for that, too. However, adult flies are less useful and are discarded after their short life span. Flies seem to have advantages over other animals that supply chitin, such as crabs or shrimps, as it seems to be purer while eliminating any issues with shellfish allergies.

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Start-up launches packaging made from starch-based biodegradable material

Russian start-up UNUM has announced the launch of biodegradable packaging made from starch-based reusable material. One of the main features of the new packaging is the possibility of repeated use. The packaging material is covered with a special protective layer. This prevents the biodegradation of the product when exposed to different temperatures and moisture: the packaging only begins to decompose after the physical destruction of the protective layer, for example, when crushed. If the protective layer of the packaging is broken, 30% biodegradation will occur in 10 days, and after 110 days, only starch will remain, which can be used as fertiliser or animal feed. The packaging will be made from agricultural waste, and as a result, a coffee cup with a lid reportedly will cost less than 1 ruble (8.4p). The packaging is formed entirely in specially designed moulds. An investment totalling 350 million roubles (£2.95m) is planned for the project.

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Dried fruit producer opts for compostable packaging

Yorkshire packaging company Parkside Flexibles has provided a new home-compostable flexible packaging solution for New Forest Fruit's new 'plant to packet' dried strawberries range. Parkside will provide the company based near the south coast of England with packaging made from its established Park2Nature film, a triplex material manufactured from renewable resources such as plant fibres, and has PEFC (Programme for the Endorsement of Forest Certification). Parkside says this material has also been certified as home compostable by German standards organisation Technischer Überwachungsverein. This certification means that Park2Nature takes a maximum of 26 weeks in normal home conditions and 12 weeks in an industrial setting to degrade into compost. New Forest Fruits' products are referred to as 'plant to packet', as they are grown, processed, and packed entirely on the company's farm in Hampshire, ensuring the carbon footprint of each product is kept to an absolute minimum.

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New Zealand supplement producer switches to bottles made from sugar cane

Lifestream, a New Zealand producer of plant-based supplements, has redesigned its packaging to appeal to a more contemporary and ‘millennial’ target market. Part of the redesign is a move to bottles made from sugar cane. The bottles are being supplied by Auckland-based Forward Plastics, which are produced from non-genetically modified sugarcane, which is sustainably and ethically sourced from Brazil as a by-product of the sugarcane industry. The sugar cane is milled and transformed into sugarcane ethanol, which is then used to create sugar cane plastic. Curious Design Consultants designed the new bottles, also based in Auckland, with the labels being printed by Label & Litho in Wellington, which the company says are made from biodegradable paper. A spokesperson for Lifestream said they are proud of their long-standing commitment to delivering the highest quality, plant-based supplements on the market and protecting the environment.

Miscellaneous

The packaging industry is seeing a wave of innovative solutions aimed at improving efficiency, added functionality, and user-friendly design. Brazilian brewery Cervejaria Masterpiece and US can supplier Ball Corporation have launched the world's first beer can featuring the Aluminum Stewardship Initiative (ASI) certification seal, highlighting sustainable practices. MIT scientists have developed BrightMaker, a technology that embeds invisible, infrared-readable fluorescent tags in objects for tracking and security. Researchers at Case Western Reserve University are working on self-powered smart packaging to monitor perishable food conditions during transport. German smoothie maker True Fruits has introduced a bottle cap with a cannabis grinder, retailing for €25 plus postage. Meanwhile, General Mills is engaging young consumers with thermochromic packaging for its Yoplait Go-GURT product, which reveals hidden graphics when frozen. These innovations are typical of those that touch on various aspects of sustainability, security, and consumer engagement in packaging.

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Thermal hood and water blanket combination maintains required product temperature
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Thermally hardened bottles are 30% lighter and more durable
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Self mixing delivery technology used for ready-to-serve cocktails
Plastic stickers on fruit and veg replaced by laser coding
Chewing gum packaging features integrated bin
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Printing tech allows precise dosing for pet care supplements
Supermarket chain trials 'pillow pack' format for minced beef
Australian tech tracks beer kegs and provides usage data
Supermarket introduces non-visible watermarks to its packaging to optimise recycling
Luxury water brand chooses flat bottle for on-the-go use

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Brazilian brewery launches world's first beer can that features ASI certification

Brazilian brewers Cervejaria Masterpiece, and US can supplier Ball Corporation have announced the world's first beer can that features the Aluminum Stewardship Initiative (ASI) certification seal. The ASI certification seal on the can conveys to consumers the certainty that companies follow environmental, social and governance principles, in addition to production standards and traceability of aluminium throughout the entire chain, from extraction or recycling to the final consumer. Cervejaria Masterpiece is a brewery that already has the B Corporation, which denotes a company that has voluntarily met the highest social and environmental performance standards. The company chose its Donatello beer as its first release with the ASI seal, a barley wine that has won three national awards. A spokesperson for Masterpiece said that In the beer market in general, the launch of ASI-certified cans could influence other microbreweries and even larger breweries to consider more sustainable practices in their packaging.

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Invisible embedded codes can be read with infrared technology

Scientists at the Massachusetts Institute of Technology (MIT) have developed what they are calling BrightMaker, a technology that embeds fluorescent tags into objects that can be viewed and tracked through an infrared camera. The process works the same way as barcodes and QR codes, but hides the code inside the object being tracked, so it can't be tampered with – or even seen. But if you pass an infrared camera over it, suddenly, the tag appears, along with the information it encodes. As the code is hidden within the item, it means that they can't be replaced with codes that link to scams or viruses. The team says BrightMarkers could be used to track an object's history, verify authenticity, monitor movements during shipping, or other uses that barcodes or QR codes currently fulfil. Security-wise, they could also watch out for objects when they're potentially being stolen.

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Smoothie bottle cap doubles as cannabis grinder

German smoothie maker True Fruits has released a smoothie bottle with an extra feature – a bottle cap that features a cannabis grinder. Aware that some of their customers use their empty smoothie bottles to safely store their cannabis, they have developed what is called the Bottle Stopper Grinder. The bottle attachment is made of aluminium and is said to be much more efficient than cheaper plastic versions. True Fruits states on its website that “not a milligram of your precious flowers is lost”. The two-part grinder can be screwed onto all 99 and 250 ml bottles from True Fruits. Since it has no holes, it also works without bottles, into which the ground up flowers would otherwise fall. The Bottle Stopper Grinder is priced at €25 plus postage. The company also sells a cap that doubles as an ashtray (€20), and another that has a tea strainer (€17).

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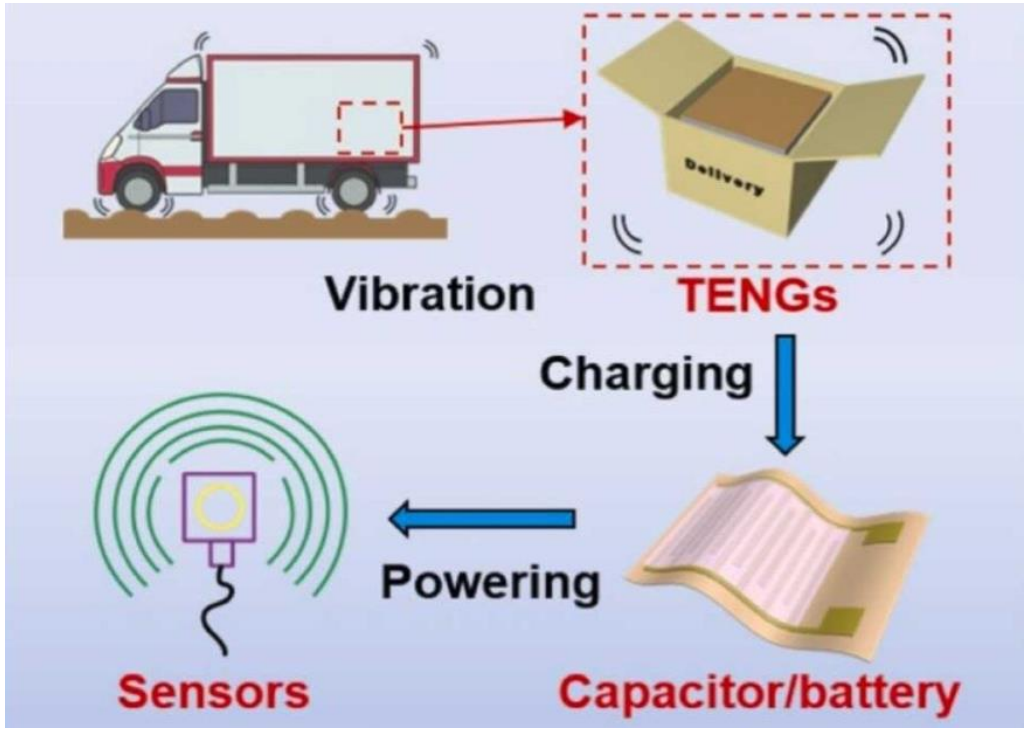
Smart packaging generates energy to monitor fresh product quality in transit

Researchers at the Case Western Reserve University in Cleveland, Ohio, are developing smart packaging that generates its own power supply, which is then used to monitor any fluctuations in temperature, moisture and pathogens in perishable food products during transportation. A central feature of their system is a small, self-powered monitoring device consisting of flexible sensors and an energy harvester that uses desiccants – the small packets of silica gel pellets found in packaging to absorb moisture – for harnessing and storing ambient energy. In this system, the energy is generated from the vibrations of the food delivery vehicle. The researchers point out that while some modern transport companies already use sensors to record temperature, humidity and carbon dioxide, the traditional batteries required to operate those systems are costly, heavy and can contribute to environmental pollution.German smoothie maker True Fruits has released a smoothie bottle with an extra feature – a bottle cap that features a cannabis grinder. Aware that some of their customers use their empty smoothie bottles to safely store their cannabis, they have developed what is called the Bottle Stopper Grinder. The bottle attachment is made of aluminium and is said to be much more efficient than cheaper plastic versions. True Fruits states on its website that “not a milligram of your precious flowers is lost”. The two-part grinder can be screwed onto all 99 and 250 ml bottles from True Fruits. Since it has no holes, it also works without bottles, into which the ground up flowers would otherwise fall. The Bottle Stopper Grinder is priced at €25 plus postage. The company also sells a cap that doubles as an ashtray (€20), and another that has a tea strainer (€17).



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Freezing new yogurt pack activates temperature-sensitive inks

US multinational consumer foods manufacturer, General Mills has launched packaging that features thermochromic packaging intending to engage with their young audience. Yoplait Go-GURT Freeze to Reveal has a trio of usage occasions. It can be chilled, frozen, or frozen and then thawed, so the company was inspired to use temperature-sensitive inks that reveal hidden graphics only when the tubes are frozen. Using temperature-sensitive inks means that hidden graphics are revealed only when the 2-oz.(56.7g) tubes are frozen. A spokesperson for the company said that the ‘revealed’ designs on frozen tubes were primarily text or small creative additions to the ‘refrigerated’ tube artwork. There were themes around ‘ice’ and ‘frozen’ shown through Yeti, penguin, and other designs. Yoplait Go-GURT Freeze to Reveal has several flavours, including Berry, Strawberry, and Orange Cream. Boxes hold 8 or 16 tubes.

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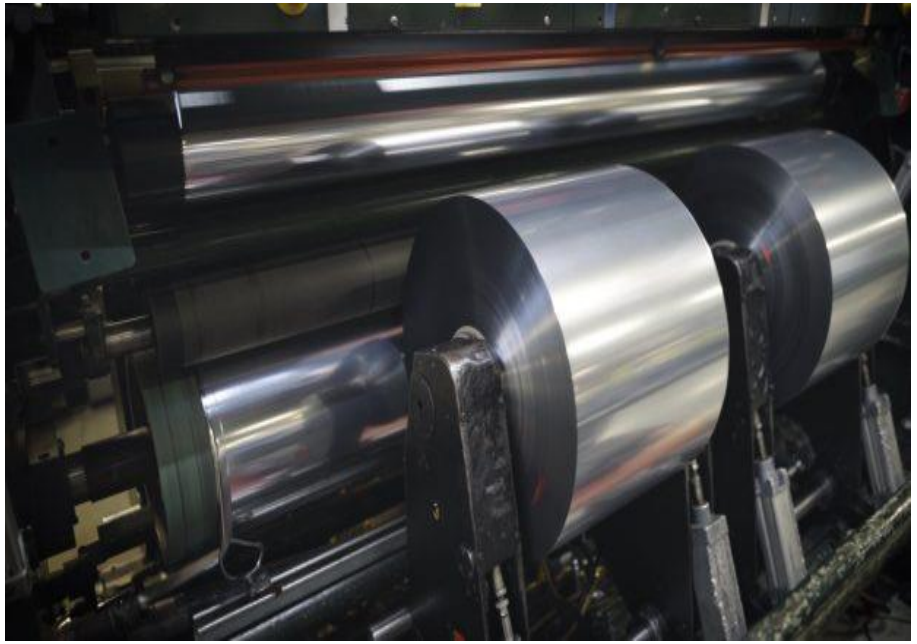
Metalised laminate features high performance throughout supply chain.

Norfolk-based Camvac have announced the launch of a new multi-layered metallised laminate, which features light, moisture and gas barrier that maintains high performance throughout the supply chain. The new product, called Camfoil, was created as an alternative to aluminium foil and is suitable for multiple flexible packaging applications. The company says that the film is tailored to heat seal through contamination, making it ideal for powdered products such as milk and infant formula, protein and whey powders. Camvac says it is also perfect for foodstuffs such as peanuts and other snacks requiring robust light and gas barriers. Applications for Camfoil include bags, sachets, pouches and lidding film for products as wide-ranging as dry food, dry powder packaging and bulk shipment of high oxygen and moisture-sensitive products. Camfoil removes the risk of pin-holing while providing an excellent gas and water vapour barrier and providing the potential to extend product shelf-life.



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Alcoholic drink features can that doubles as a lie detector

Molson Coors has launched a new alcoholic lemonade drink in Canada called Simply Spiked. Their ‘Keep it Real’ Can is a promotional campaign for the new brand, featuring what is being billed as the world’s first lie detector in a can. It uses a heart rate sensor and a galvanic skin response sensor to tell if people are, in fact, “keeping it real” for real. To administer the test, the can is connected to a smartphone via WiFi and is conducted via a browser app. The test taker holds the can with fingers over the sensors, and when a lie is detected, a ring of light at the bottom glows red. When the can reads the truth, the light turns green, and blue indicates an inclusive response or error in reading. The Keep it Real Can will be popping up at sampling events in BC, Ontario and Quebec throughout the summer.

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Spanish mussel co-operative switches from mesh bags to thermoformed trays

Opmega is an organisation made up of Spanish mussel producers. Following a collaboration with Madrid-based Teixpac, a thermoforming equipment and materials supplier, they have developed an alternative to the previous packing method of mesh bags to increase the shelf life of the mussels by 40%. The new tray format has taken a year of development, and a twin line was developed to ensure continuity of supply in case of production issues. By moving to a tray format, Opmega has acquired a process with a production capacity of 30,000 kilos of mussels per day and is available in two tray sizes, 750g and 1kg. A bonus of the new format, apart from the fact that it preserves all the nutritional properties of the mussel for longer, is that the products are now also microwavable.

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Brewery uses ‘zombie cans’ for its first canned beer release

Small Colorado-based brewery Hello Brew Co. has found a way of launching its first canned beer release by using ‘zombie cans’. Canimal, also based in Colorado, is the supplier of these special cans. These already-printed cans are an over-purchase, over-run, or misprint that would otherwise end up in the recycling stream. Using a patent-pending process, the cans are sprayed with a food-safe, water-based varnish the company refers to as “zombie juice,” which makes re-use possible. During the process, the top of the can is sealed to keep the varnish on the exterior only. Canimal says that environmentally, the creation of zombie cans, versus the creation of new cans through recycling and remanufacturing, saves on water and creates less CO2. Canimal was able to provide Hello Brew Co with the small quantities it needs, at roughly 25% less per can than purchasing new empties.

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Australian researchers to use native essential oils in antimicrobial food packaging

A researcher from the Deakin CASS Food Research Center, Australia, uses native essential oils to develop a prototype for antimicrobial food packaging that could help extend product life and reduce food waste and illness. In the study, they use the native Australian essential oils Tasmanian mountain pepper and lemon myrtle, for sustainability reasons and due to the growing demand for natural products. It turns out that the essential oils activity is better than tea tree oil, which has historically been used extensively as an antimicrobial. They also stumbled upon the fact that not only are these oils antimicrobial in the liquid phase, but their volatiles, or gases they release, are equally as effective. Next, encapsulated essential oils will be integrated into biodegradable plastic formulations to produce packaging that will release the essential oils, killing or inhibiting the bacteria and fungi growing on food and extending product shelf life.

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Patent-pending avocado packaging maintains optimal freshness

Indian avocado importers Abacate have created patent-pending packaging for its single and twin-packs of avocados, and will be known as Abacate Mini Gems. The design of the punnets is said to keep the fruits elevated and improve airflow, thereby maintaining optimal freshness of the fruit. The company says that traditionally avocados arrive in 4kg boxes to retailers who then sell them by weight or individually. Abacate says that their punnet packaging offers a personalised, user-friendly approach, perfectly sized for a single avocado or twin pack, which the company expects to be a hit with consumers in India. The company also says that their single-serving avocados provide convenience and freshness in every bite. They also say that their smaller size ensures minimal wastage, making them an ideal choice for health-conscious individuals seeking a satisfying, on-the-go snack.

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UK meat-free brand adopts technology to aid visually impaired customers

British meat-free brand Quorn is the latest company to adopt Navilens technology to help visually impaired consumers. Quorn will use the technology on two new products in its frozen range – Tomato & Mozzarella Escalopes and Mini Vegan Sausage Rolls. The Navilens technology will make the Quorn range more accessible and inclusive to blind and visually impaired shoppers. The barcodes allow shoppers to easily access key product information and nutritional details up to 12 times farther away than standard QR codes. A spokesperson said that they wanted to make their products as widely accessible as possible so everyone can enjoy more meat-free choices. NaviLens technology is a huge step in Quorn's journey toward making things like the weekly food shop a more inclusive and smoother experience for the visually impaired. More Quorn products will be rolled out with the NaivLens technology over the next 12 months.

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Australian technology monitors quality of fruit in transit

Piñata Farms, based in Queensland, Australia, is using smart trackers to track the temperature and location of its premium berries and mangoes throughout its supply chain. The company is using trackers supplied by Sydney-based Escavox, and every consignment leaving Piñata's main packing operation in Wamuran has them. The Escavox devices, about the size of a mobile phone, are placed by Piñata Farms in a carton or container on loading and are retrieved by Escavox for reuse after the consignment's arrival. The tracking technology enables the fruit producer to have real-time data for each carton, giving its exact location and its current temperature. Temperature information includes whether produce is too hot, too cold or exposed to too much light, humidity or movement, based on what the category requires to retain optimal quality and freshness. Another function of the GPS tracker is that the customer can be notified if the driver is running late.

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Beverage brand stands out in a crowded market

In the diverse beverage market, Match Tonic Water aims to stand out as a brand rooted in innovation with a strong commitment to quality. The brand, produced by Glattbrugg, Switzerland-based Curius, is notable for its distinctive bottle design, which seeks to captivate consumers with a stand-out design. The brand utilises 100% post-recycled glass. The tonic water isn't merely a thirst-quencher; it's enhanced with a blend of superfood liquid, adding a nutritious dimension to the beverage. Retailers have recognised its potential, with a reported average 20% increase in shelf presence, reflecting its ability to stimulate sales and pique consumer interest. Match Tonic Water is also e-commerce ready, its packaging ensuring the product arrives undamaged to online shoppers. As retail landscapes shift, Match Tonic Water positions itself as a trendsetter, adapting and leading in an evolving market.

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Thermal hood and water blanket combination maintains required product temperature

Ecocool Is a German manufacturer of thermal hoods for temperature-sensitive products. Their Eco-Safe+ combines a thermal hood for pallet goods with a so-called WaterBlanket, a blanket filled with water-based gel. It has been designed to be used in port areas where a power supply is not always available. Palletised goods are delivered to the port in an actively temperature-controlled reefer. However, the sea containers must often be temporarily stored at the quay for several hours before they get on the ship. The reefers cannot always be parked at sites with a power connection, so the power supply to the refrigeration unit is sometimes interrupted for several hours. This is where conventional thermal hoods reach their limits in the narrow temperature range of 2 to 8°C. For a recent pharmaceutical customer, the Eco-Safe+ was the only product that could meet the customer’s stringent requirements.

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Lip balm launched in unique spherical container

Brazilian personal care brand FreeBrands has launched Beta, a lip balm, which comes in a unique spherical container, the only one of its type manufactured in Brazil. The company says that the shape makes it easy for the consumer to use, while also reducing waste. FreeBrands lip moisturiser has 9.5 grams of product, containing twice as much as its main competitors, for around the same price range. The product has a sun protection factor and is available in four flavours: vanilla, coconut, mint and strawberry. According to the manufacturer, Beta was inspired by the natural riches of Brazil to compose its aromas, “which brings a strong national identity to the brand”. The choice for the name Beta was based on the inspiration of the “always beta” concept, which means “being in constant transformation and always evolving”.

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Thermally hardened bottles are 30% lighter and more durable

Vetropack, based in Switzerland, has announced the development of what it says is the next generation of returnable glass bottles. The bottles, produced by their Echovai production process, boast a weight reduction of up to 30%, greater stability and significantly less scuffing than on a standard bottle. For the first time, the Echovai process allows glass bottles to be hardened thermally. It was developed over almost ten years at the Vetropack Innovation Centre in Pöchlarn, Austria. Since 2019, Echovai bottles have been extensively tested in the market as part of a pilot project in collaboration with Austrian brewery Mohrenbrauerei based in Vorarlberg. The project has been a resounding success: thanks to the lightweight bottles, the logistics effort for the varieties sold in Echovai bottles was reduced by around 1,000 tonnes per year. The CO2 emissions per bottle dropped to only a quarter of a conventional returnable bottle.

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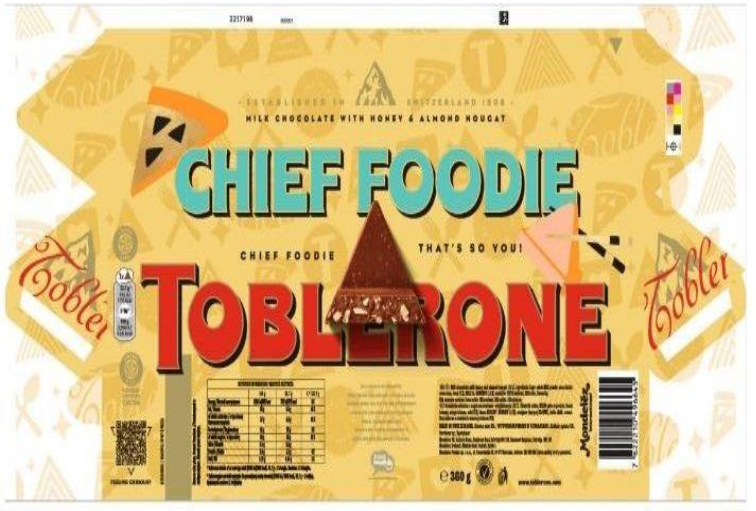
Digital press used to create customised chocolate packaging

German print service provider Pfaffle has used its HP Indigo 30000 digital press to create customised printed boxes for Mondelēz International's Toblerone chocolate brand, in an effort to elevate its presence across UK supermarket shelves and 'build an emotional connection with consumers'. The project has seen the creation of more than 170,000 unique designs for the 'That's so You' marketing campaign. Created by London-based agency Bulletproof, using the Spark element of HP SmartStream Designer, each design features a different type of personality, as well as having the background design and featured icons personalised according to the personality described on the packaging. By tailoring packaging designs and messages to cater to individual consumers, it is felt that brands can create a deeper connection and enhance the overall customer experience. The special edition 'That's so You' Toblerone campaign is available exclusively in Sainsbury's stores all across the UK from the end of June until mid-August 2023.



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Self mixing delivery technology used for ready-to-serve cocktails

Premium international spirits company Pernod Ricard has announced that they will launch a new line of self-mixing cocktail bottles in the USA. Using Arizona-based Vessl's patented closure and delivery technology, twisting the cap creates an instant batch of cocktails in a moment. Unlike other ready-to-serve cocktails, The Glenlivet Twist & Mix cap keeps its signature Single Malt Scotch Whisky separate from the natural cocktail flavourings until the consumer is ready to drink it. The cocktails are ready-to-serve in three steps: twist the cap, watch it mix, and pour over ice. The company hopes this process will help consumers avoid the hassle and waste of leftover ingredients, complex recipes and the need for bar equipment. The collection is debuting with the Old Fashioned and New Manhattan, bringing the two most popular whisky cocktails served in restaurants to consumers' homes.

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Plastic stickers on fruit and veg replaced by laser coding

Melbourne-based Result group is offering an alternative to the plastic stickers commonly used on fresh fruit and vegetables – laser printing. The technology was originally developed by German company EcoMark as an ink-free option for identifying car parts used in the automotive industry. Interest in the waste-free, non-contact labelling option has been growing following moves in France and New Zealand to ban plastic fruit stickers with plans to follow in South Australia. Result Group has been investing in their own research and development to equip the laser technology to deal with a wide range of produce and to enable it to add a two-dimensional product code (a new format which is a square code, a bit like a QR code, rather than a traditional bar code). Extensive testing shows the EcoMark technology can now work well on both thick and thin-skinned fruits and vegetables.

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Chewing gum packaging features integrated bin

London-based Gumipod have recognized the ever-growing nuisance that chewing gum and bubble gum has become in terms of its disposal. The company claims that their Gumipod is the world's first chewing gum packaging with an integrated gum bin. The company says that 87% of global gum-chewing consumers dispose of their gum in public/private places because they have nowhere to discard it when they need to dispose of it. As examples, this leads to gum residue on public flooring and under chairs and tables. Gumipod is hygienic, pocket-sized, and comes in various colours and finishes. The company is launching their "flip it bin it" anti-chewing gum litter campaign later this year, as they want to achieve a 30% reduction in chewing gum litter by 2025. Gumipod comes in black, pink or white and retails at £4.99 for a pack of five.

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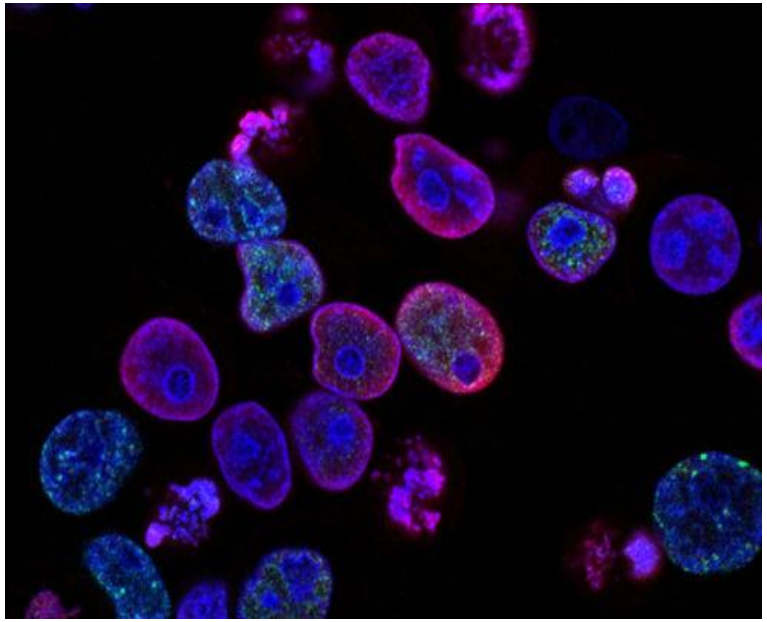
University spin-off uses industrial byproducts to produce PHAs

Ourobio began in early 2019 as Transfoam, an iGEM research project at the University of Virginia, and was spun out in March 2020. The company develops engineered microorganisms to turn industrial byproducts into low-footprint, bio-based biodegradable plastic resins and additives. The microbes that Ourobio uses are unique in their ability to produce complementary biomaterials in a single fermentation process, and their proof of concept uses dairy processing byproducts to co-produce bio-based, biodegradable plastic resins and colourants – lowering the cost, footprint, and difficulty of producing marketable, fully bio-based biodegradable products and packaging. The company produces polyhydroxyalkanoates (PHAs), a class of bio-based, biodegradable polyesters that can help replace petrochemical plastics in nearly every product and package they are found in today. Ourobio says it is working to help brands adopt more sustainable materials and waste management practices.



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Printing tech allows precise dosing for pet care supplements

California-based Smart Cups has partnered with pet care and nutrition company Compana Pet Brands to supply a new solution for pet owners, enabling precise dosing and enhanced nutrient absorption. Through Smart Cups' printing capabilities, Compana Pet Brands says it can deliver an "unprecedented" solution for pet owners, enabling enhanced nutrient absorption through printed pet supplements, ensuring pets receive vital nutrients for optimal health. Utilising Smart Cups' printing technology, they will directly print accurate doses of pet supplements onto recyclable pet bowls, designed to encourage hydration and deliver convenience and precision in pet care. Smart Cups are a sustainability-driven printing technology that eliminates the need to bottle and ship liquids, significantly reducing a company's carbon footprint. A truck that ordinarily carries 100,000 traditional bottles can instead carry 2.1 million Smart Cups thanks to the stackable, waterless design.

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Supermarket chain trials ‘pillow pack’ format for minced beef

British supermarket chain Tesco has announced that it is trialling a new ‘pillow pack’ format for two of its minced beef range. The company says that the fact that the pack has a slightly inflated appearance is thought to keep the meat in perfect condition without compressing it. This design is smaller than the previous tray solution resulting in a 70% reduction in plastic, thus requiring fewer delivery vehicles to transport them and optimising space on supermarket shelves to increase availability. The packs contain the same amount of mince as the previous packaging. The company’s own brand 500g Beef Lean Steak Mince 5% fat and 500g Beef Mince 20% fat products will be trialled in the new format and will roll out across more stores and lines if it gains a positive response from consumers. Tesco also reports that the PE pack is recyclable with other soft plastic at front-of-store recycling units. Germany-based retailer Feneberg Lebensmittel also introduced a pack like this **in December 2020**.

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Australian tech tracks beer kegs and provides usage data

Konvoy was launched in 2019 across Australia and New Zealand. Through its subsidiary, Katch, it has developed a passive tracking beacon and software system to track the location of beer kegs at all times across the globe. For breweries, this means scan free tracking of all kegs, and information about how long kegs stay at various locations. The company's kegs are also product and batch capable, allowing customers to drill into their data and learn more about which products and batches perform best. The Katch device was built based on a deep understanding of kegs and the supply chain. The Katch team has +20 years of experience in keg management through founding Konvoy and previous pooling businesses. As well as its tracking technology, Konvoy also offers short or long-term keg leasing and keg repair and maintenance.

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Supermarket introduces non-visible watermarks to its packaging to optimise recycling

Netto Germany is adding Digimarc watermarks to its own-brand food packaging to enable more effective recycling in the future. Netto has more than 2,000 items on shelf with Digimarc Barcode and plans to expand this application to all its own label products. Digimarc Barcode is an imperceptible barcode that is part of the packaging artwork – and because it is repeated across the packaging – it can be scanned at any angle, increasing checkout speed and accuracy. This improves the procedure at the cash desk by eliminating the search for conventional barcodes. A spokesperson for Netto said that the non-visible watermarks have the advantage that they can design their packaging to be more valuable. By linking the digital watermarks with the stored information about the packaging materials used, Digimarc overcomes the limitations of today's optical sorting technologies and is intended to gradually improve the quality and quantity of the recyclate.

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Luxury water brand chooses flat bottle for on-the-go use

Indiana-based Berry Global is supplying Danish luxury mineral water brand NEUE Water with a 100% recycled PET (polyethylene terephthalate) bottle. The bottle, from the company's 'Agile Solutions' division has been designed to be used on-the-go, with a flat, ergonomic shape to fit into pockets, bags, and seatback storage on public transport. The bottle has also been designed to be solid enough to enable refills for reuse, and, at its end of life, the pack is said to be recyclable. An uninterrupted convex window on one side is intended to magnify the label area, with limited-edition artist labels being applied across the fashion seasons to draw attention to the product on the shelf. Berlin-based artist Studio Raaad has designed six one-of-a-kind prints for the first set of labels. Berry had to adapt their technology as the flat shape initially caused issues during the production process.

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About Us

ThePackHub is a UK-based packaging innovation consultancy that provides packaging solutions to brand owners, retailers, and packaging suppliers. They offer technical support for packaging projects of all sizes, with a strong reputation for assisting start-ups to multinational organizations.

ThePackHub manages a comprehensive innovation database called The Innovation Zone, featuring over 7,600 packaging innovations worldwide, with 25 new initiatives added weekly. They have a vast network of packaging contacts across the industry that helps inform much of their consultancy work. Additionally, they have published several packaging reports, covering sustainability, packaging trends, supplier guides, seasonal packaging, and more. ThePackHub hosts face-to-face seminars that provide insight from expert speakers and bring the industry together to network and collaborate.

ThePackHub has a wealth of experience helping many major companies with their packaging innovation. Clients include Arla Foods, Waitrose, Barilla, Coca Cola, PepsiCo, Mondi, Premier Foods, AB InBev, Kraft Heinz, Mondelez, Mars Wrigley, Church & Dwight, PZ Cussons, Starbucks, Walgreen Boots Alliance, Marks & Spencer, Lidl, Muller and many more.

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