Planet Tracker

Don't lose your bottle over the label

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Key Takeaways

- Few disagree that plastic recycling is desirable, but rates remain woefully inadequate at only 9% globally and at a marginally better 15% for plastic packaging.
- As regulation tightens, demand for recycled feedstock is rising and this is reflected in recycled product prices. The EU market is showing a c.51% premium of recycled feedstock over fossil-based.
- In the UK, manufacturers prefer to pay the £200 (USD 248) per tonne plastic tax as it is cheaper than using recycled content in their packaging.
- There is a supply constraint for recycled feedstock so greater efforts are needed to satisfy rising demand.
- Brands and consumer companies could adopt a self-help approach by thinking about both their containers and labelling:

– Numerous colours make the sorting and recycling process more complicated than it need be.

– Ensuring that the label is easy to remove and compatible with the container's material would also improve recycling.

- As self-regulation looks unlikely – driven by fear that a competitor will be advantaged by remaining unsustainable – policymakers need to fill the gap.
- Recycling is an important step in improving circularity, however we should remain mindful that it will not solve the global plastic pollution problem on its own.

BRIEFING PAPER
January 2023

Executive Summary

Few doubt that the plastic recycling rate needs to improve. Only 9%[i] of plastic waste is recycled. At the forefront of recycling are plastic bottles, particularly those made of PET. Most of the attention is focused on the container's material. In this paper we recommend a similar focus on the type of label.

Planet Tracker believes that the consumer brands, which set the specifications for the packaging and container industry, could adopt a self-help approach. One obvious approach is by tackling the labelling issue. By using full shrink sleeve labels on packaging (see page 19), which are of the same material as the container, brands could improve recycling rates.

Photo courtesy of packagingconnections.com

Sleeve labels increase recycling rates

Initially we need to address the issue of high demand for recycled plastic and whether labelling will ease present supply constraints.

Currently, 141 million tonnes[ii] of plastic packaging is produced each year, with Coca-Cola, PepsiCo, Nestlé, Unilever, Mars and L'Oréal some of the world's leaders in plastic packaging consumption, using over 7.7 million tonnes in 2021.[iii] An increased number of regulations and commitments for higher recycled content in packaging have led to a rapid rise in the demand of recovered material.

Unfortunately, the availability of recycled plastics is not sufficient to cover the current demand, mainly because only 15% of all plastic packaging waste finds its way back to the packaging sector. The lack of supply is resulting in increasing prices across different recovered commodities; in 2022, in Europe the recycled PET pellet is sold 51% higher than virgin (at a premium of €797 (USD 868) per tonne).[iv] Presently, manufacturers prefer to pay the UK Plastic Tax at £200 (USD 248) per tonne as it is cheaper than using recycled content in their packaging.[v]

As the current supply situation worsens, the industry needs to find solutions to reduce the pressure. Planet Tracker believes that the brands could adopt a self-help approach as they set the specifications for the plastic packaging and container suppliers. If these consumer companies added a sleeve label to the bottle, the containers could be a standard colour as all the branding would be expressed through the label. In turn, this would reduce the pressure on the recyclers of meeting a tight colour consistency target, boosting the availability of recycled material. Furthermore, the container would be more sustainable, flexible, weather resistant and a stronger end product.

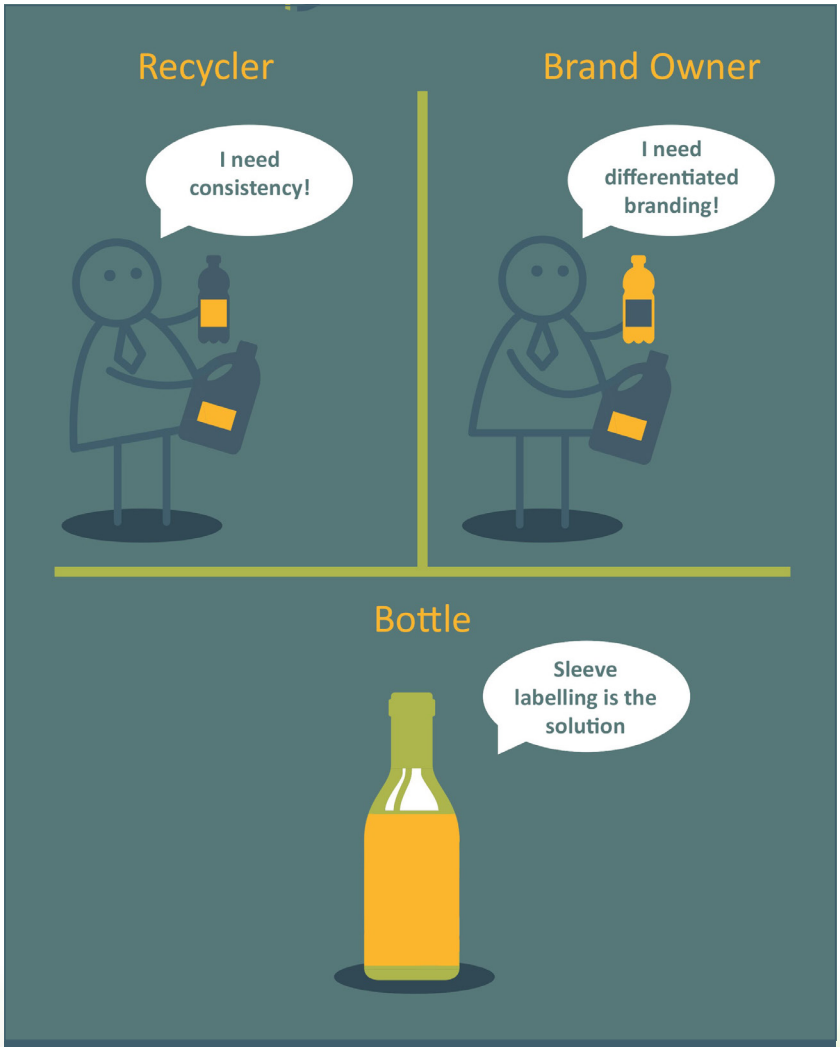


Figure 1: Sleeve labels are the solution. Source: Planet Tracker.

Identifying the Recycling Challenge

In the existing market where for the same brand of shampoo, some bottles are white, some cream and some ivory, it would look odd, wouldn't it? Retailers and brand owners are very particular about the colour of their bottles as present perception is that consistency is paramount. However, when the bottle is made from recycled material, the colour shade is highly dependent on the feedstock used, and consequently **achieving consistency is not always easy**.

Currently when the colour in the recovered flake or pellet is inconsistent with the buyer's specification, the material can be rejected. Therefore, it will either need to be reprocessed, which will lower the yield through the reprocessing – approximately 17% yield loss from resin bale[1] to flake/pellet[2] can be expected – see Figure 2. Alternatively, it can be sold as a lower specification product reliant on spot prices. Clearly, both options will add recycling delays to the supply chain.

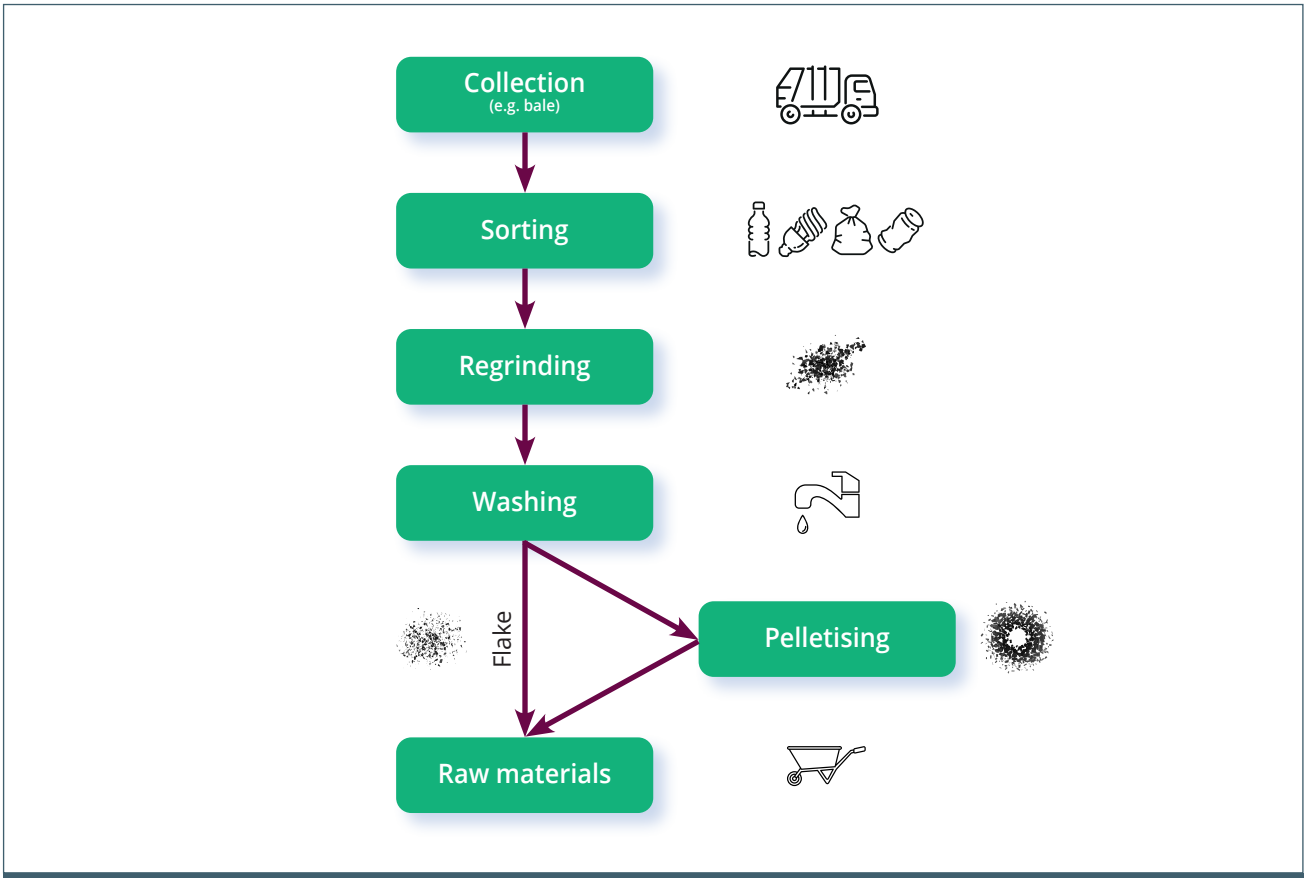


Figure 2: Mechanical Recycling Process. Source: Planet Tracker.

[1] For the purposes of this document the term resin bale refers to a bale containing only HPDE, PET and PP in the form of bottles and other non-bottle rigid packaging.

[2] For the purpose of this document, the term flake/pellet refers to the end-product of recycling process that following sorting and washing, the bottles are put into a grinder or shredder and turned into flakes or compounded back into pellets.

PET process and its footprint

Often facilities receive post-consumer recycled (PCR) PET as individual resin bales. Bales are broken down and the material sorted to remove foreign material. Some reclaimers pre-wash sorted material before it is flaked, and some accept it in a flake form. All flake is washed to market specifications as part of reclaimer processing operations. Even though the feeding material has been pre-sorted before it is received, there are other materials that may have entered as well along with the PET.

Some of the non-PET material is commercially viable, like polyolefin cap (HDPE, PP) and aluminium, while others are categorised as contaminants. Non-PET valuable materials consist of approximately 14% of the total feedstock, while contaminants are approximately 15% of the total weight – see Table 1.

Table 1: PET Reclaimer Operations – Material and energy requirements per 1kg of post consumer PET Flake output. Source: The Association of Plastic Recyclers.[vi]

Bale to Flake	Per 1 kg	Unit
Incoming Material		
Collected and sorted post-consumer resin[3]	1.18	kg
Chemical Inputs	0.0176504	kg
Sodium hydroxide, 50%	0.0095	kg
Washing Agents[4]	0.0027	kg
Defoamants	0.0031	kg
Chemicals with aluminium compounds	6.80E-04	kg
Ferric chloride	6.80E-05	kg
Hydrogen peroxide, 35%	5.40E-06	kg
Acid	1.00E-03	kg
Salt	4.80E-04	kg
Wastewater treatment polymer	9.90E-05	kg
Other confidential chemicals	1.80E-05	kg
Water Consumption	0.88	litre
Energy		
Electricity[5]	0.34	kWh
Natural gas	0.067	cu m
Diesel	6.60E-04	litre
LPG	0.0011	litre
Propane	0.0031	litre
Incoming Transportation		
Combination truck transport, diesel (resin)	0.7	tonne-km
Combination truck transport, diesel (chemicals)	0.0033	tonne-km
Solid Waste		
Incoming contaminants removed by reclaimer[6]	0.18	kg
Wastes generated by reclamation processes	0.011	kg

Bale to Flake	Per 1 kg	Unit
Emissions to Air		
Particulates, unspecified	7.40E-06	kg
Emissions to Water		
BOD (Biological Oxygen Demand)	0.0018	kg
COD (Chemical Oxygen Demand)	0.0016	kg
Suspended solids, unspecified	7.80E-04	kg
Dissolved solids, unspecified	3.60E-05	kg
Flake to Pellet		
Process Inputs		
Nitrogen	0.0031	cu m
Energy		
Electricity[5]	0.48	kWh
Natural gas	0.034	cu m
LPG	8.30E-05	litre
Propane	2.90E-04	litre

[3] Incoming transport of resin includes the weight of incoming contaminants allocated to the resin based on its share of total weight of saleable outputs (resin and other recovered materials).

[4] Washing agents include a variety of detergents and surfactants; not listed individually due to confidentiality.

[5] Includes electricity reported by participating reclaimers in US, Canada, and Mexico; kWh by country not listed individually to protect confidentiality.

[6] Weight of contaminants in incoming material allocated to the resin based on its share of total weight of saleable outputs (resin and other recovered materials)

The Recycling Marketplace

The Existing Market

Before we explain why the correct label is so important, we need to understand the situation in the market and the reasons why it is crucial to find alternatives to reduce the existing constraints in the supply chain.

Currently the market is struggling to access good quality feedstock and further constrained by demanding colour specifications – see Figure 3.

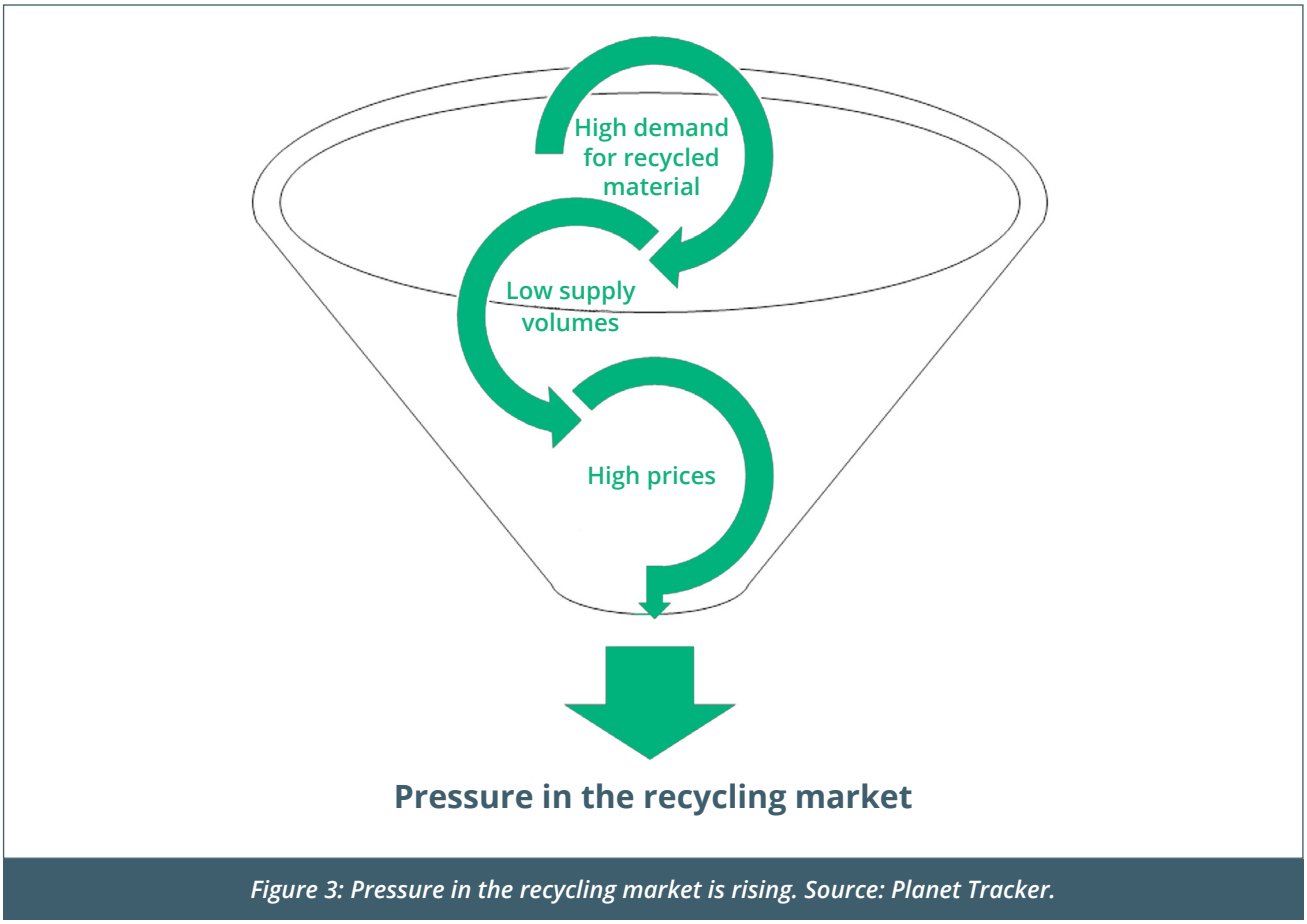


Figure 3: Pressure in the recycling market is rising. Source: Planet Tracker.

In Need of Ever More Recycled Feedstock

The demand for recycled plastic packaging is growing. The world produces 141 million tonnes of plastic packaging a year.[vii]

During 2020, the Coca-Cola Company consumed 2.96 million metric tonnes of plastic packaging on its own, increasing to 3.2 million tonnes by 2021. PepsiCo also increased its plastic packaging consumption from around 2.35 million metric tonnes in 2020 to 2.5 million tonnes in 2021. Unilever, Mars Inc. and L'Oréal added further 54 thousand tonnes of plastic packaging in 2021.[viii] The exception is Nestlé which decreased their packaging requirement to 0.9 million tonnes in 2021, down from over 1.2 million tonnes in 2020 – see Figure 4.

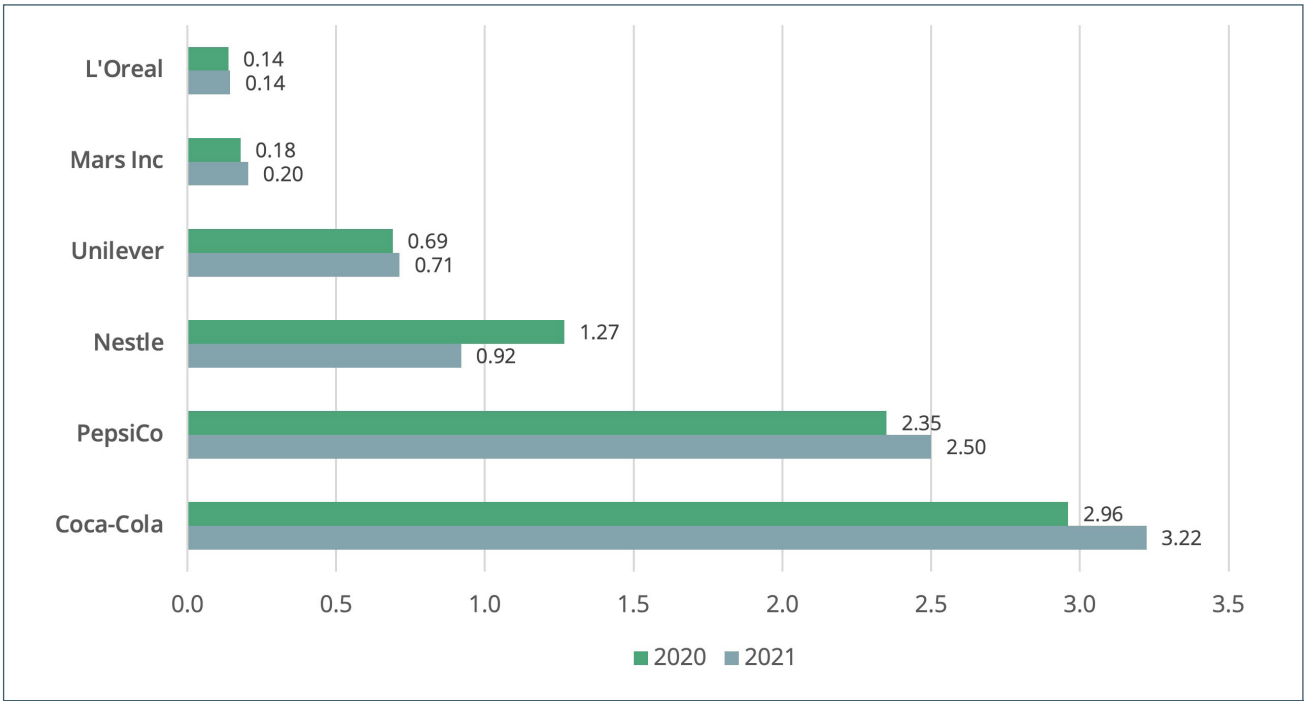


Figure 4: Annual plastic packaging volume used by select companies worldwide in 2020 and 2021 (in Mt Source: Ellen MacArthur Progress report 2021, Ellen MacArthur Progress report 2022, Planet Tracker.[ix, x]

In 2021, these leading fast-moving consumer goods (FMCG) companies consumed 793K tonnes of PCR plastic in their packaging, with Coca-Cola Co and PepsiCo together using 600K of recycled plastic (mainly PET bottles) – see Figure 5.

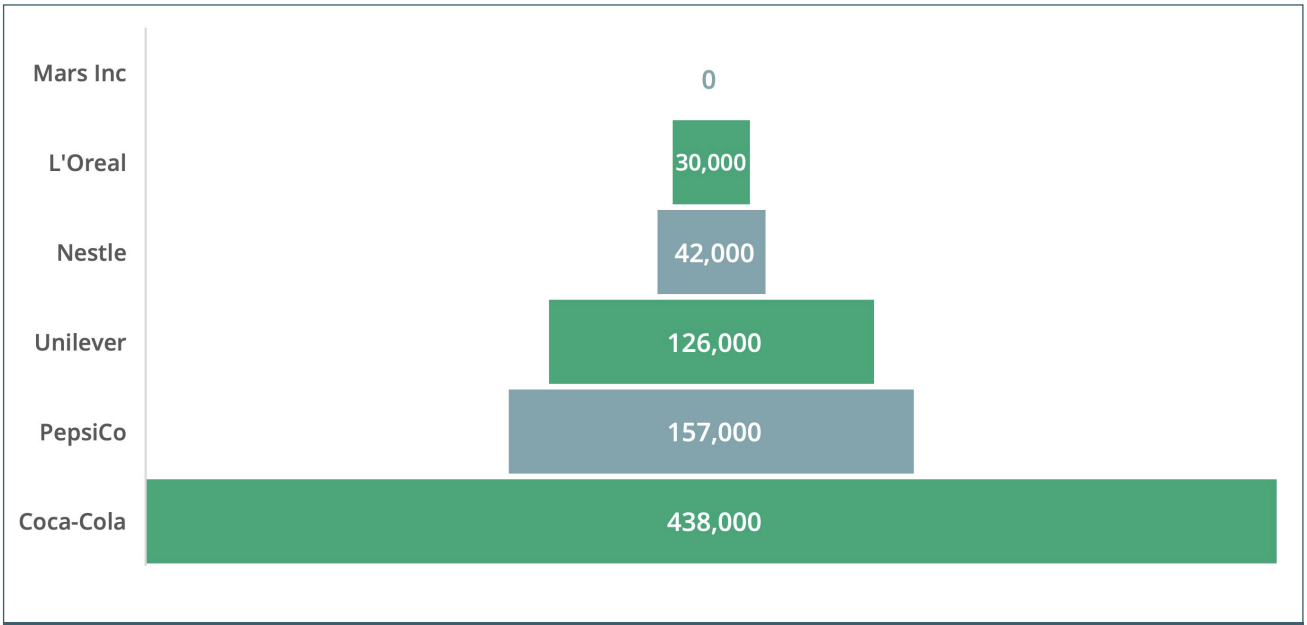


Figure 5: 2021 PCR Content volume in tonnes. Source: Ellen Macarthur Global Commitment Progress Report 2022.

Interestingly, these companies, with the exception of Mars, which is privately owned, share 191 common shareholders, showing that concerted engagement on packaging and circularity has the potential to change the top consumer companies simultaneously. See more about the concentration of the market in **Paying for Transition** by Planet Tracker, April 2022 – see Figure 6.

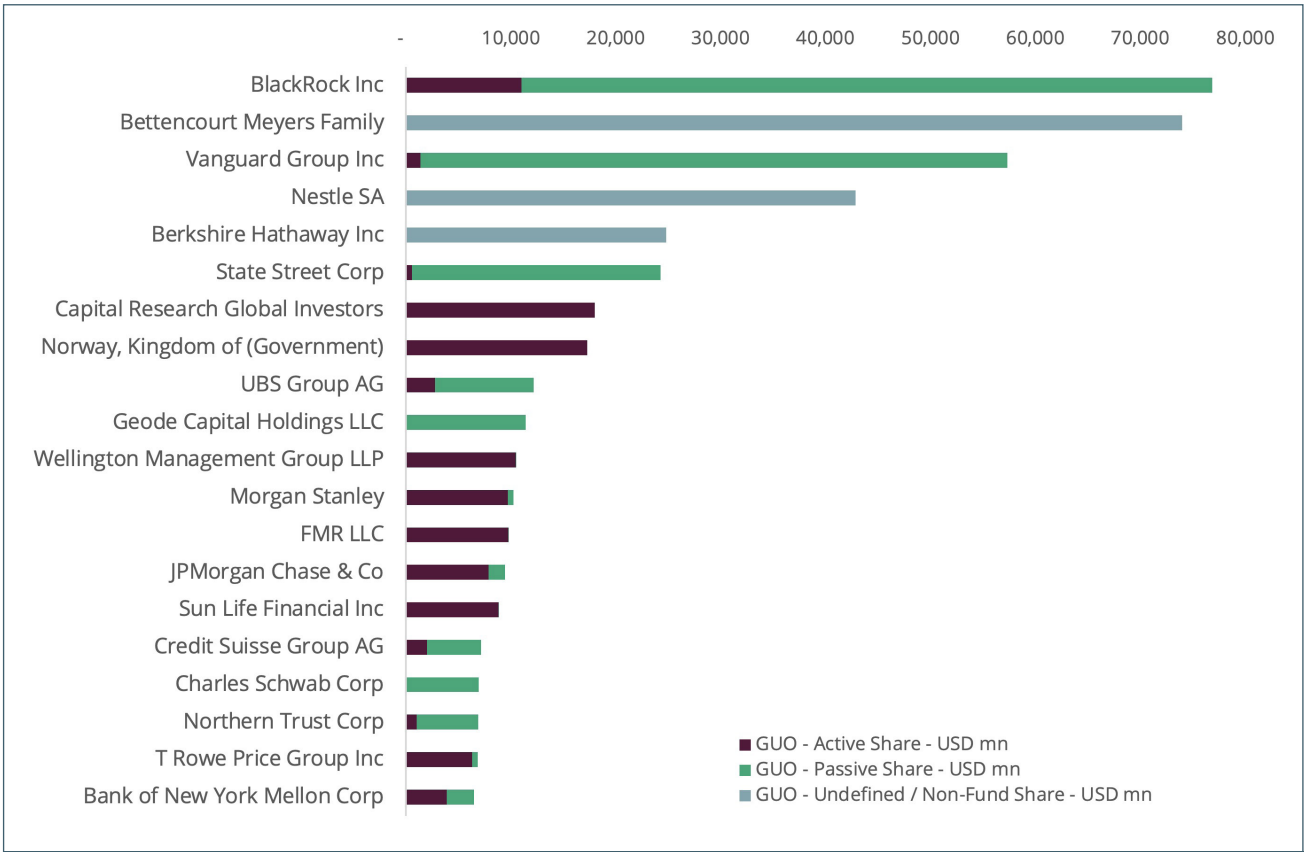


Figure 6: Top 20 shareholders. Source: Eikon Refinitiv. GUO = global ultimate owner.

Further demand pressure has resulted from Europe's plastic tax which was introduced in early 2021.

Finally, there are significant commitments by brands and retailers in all sectors to incorporate recycled content in their products. There is also a voluntary commitment made as part of the UK Plastics Pact where participating companies have a target to incorporate an average of 30% recycled content by 2025. The UK Plastic Packaging Tax additionally sets out a 30% recycled content requirement for packaging companies by April 2022. All of these have led to a significant demand for recyclates.

Commitments by brands[xi]

PepsiCo announced in its 2020 Sustainability Report that 22 global markets already offer a PepsiCo product in 100% recycled packaging. They have committed to use 25% of recycled PCR in their packaging by 2025; in 2021 they used just 6.3% of PCR.

Coca-Cola has committed to use at least 50% recycled plastic by 2030 and 25% by 2025; in 2021 they used 17.7%.

Mars are targeting 30% recycled content on average across their plastic packaging portfolio; in 2021 they used 0% of PCR.

Unilever are expecting to use minimum 25% by 2025 in their Household and Personal Care range; in 2021 they used 17.7% of PCR material.

L'Oreal has committed to use 50% by 2025; in 2021 they used 21% of PCR.

Nestlé has committed to use 30% by 2025; in 2021 they used 4.6% of PCR.

The demand for recycled grades is rising rapidly, but can the available supply cover these commitments?

High Demand Faces Low Supply

As discussed above, the current availability of recycled plastics cannot keep up with the existing demand. This issue is unlikely to be resolved soon.

This imbalance exists because currently only 15% of all plastic packaging waste returns to the packaging sector and the majority of this is PET bottles.[xii] The remainder is downcycled[7] into different applications.

For the brand owners to meet their recycling targets, they are currently forced to compete against others from different sectors, whether they be food, textile, or automotive companies. For example, the textile sector is using rPET from bottles in their supply chains – see Figure 7.

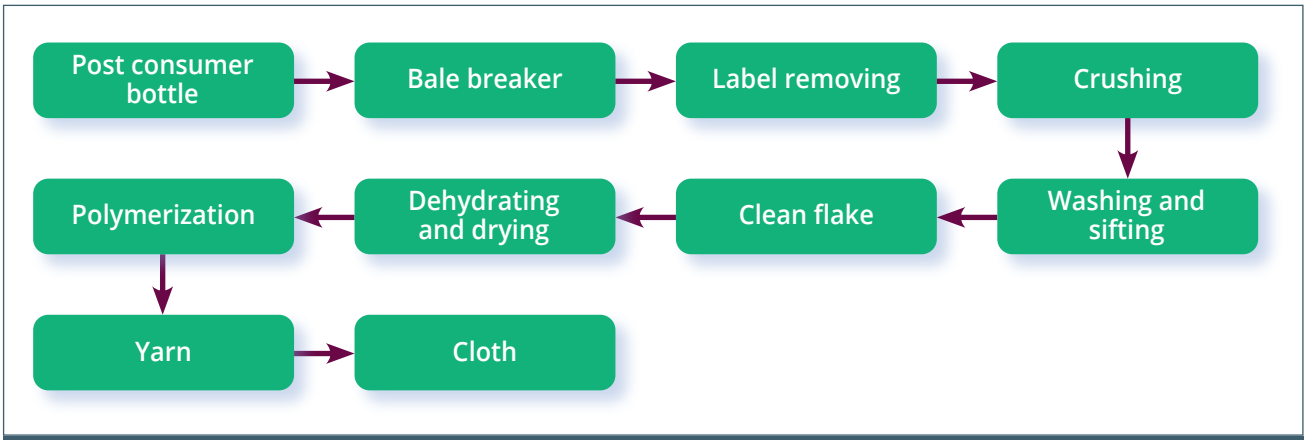


Figure 7: Textile from Post-Consumer bottle process. Source: Planet Tracker.

[7] To recycle in such a way that the resulting product is of a lower value than the original item.

In September of this year, UNESDA Soft Drinks Europe released a statement, advising that ***"high rPET costs could prevent small to medium-sized enterprises (SMEs) from meeting legislative requirements on recycled content and calls on the European Commission to introduce a priority access mechanism or right of first refusal for the beverage industry in the upcoming revision of the Packaging and Packaging Waste Directive (PPWD). The organisation claims that, while this situation may be considered beneficial by recyclers, it is unfair that businesses with recycled content targets cannot access the necessary material to comply with legal obligations"***.[xiii]

Closed loop recycling is anticipated to grow almost twice as fast as open loop towards 2040, but still, this is still not enough to meet the raising demand for PCR materials – see Figure 8 for definitions.[xiv]

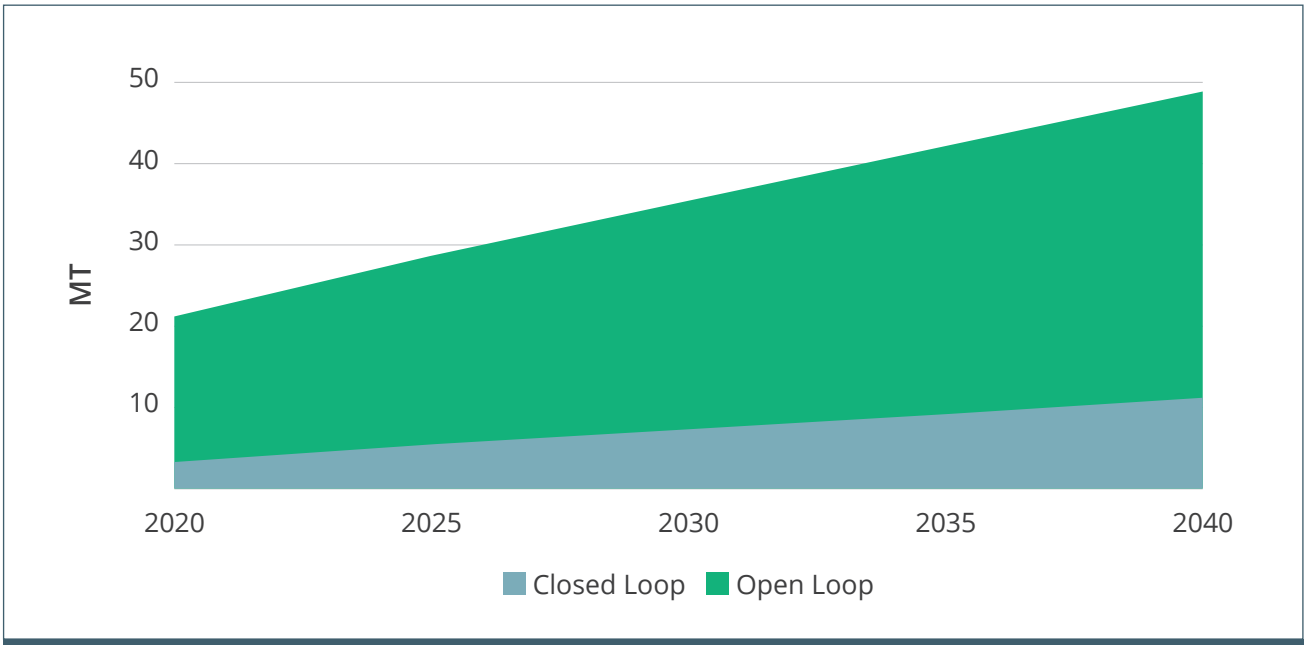


Figure 8: Closed loop recycling gains market share within mechanical recycling. Source: Wood Mackenzie.

Open Loop and Closed Loop Recycling

Open loop recycling is the system when the recovered waste is reprocessed and converted into a different application. Essentially, the recycled material may not be as strong as the original created from virgin ingredients. Thus, it may be used to produce a different type of output or may also create the original but by mixing it with virgin.

More often, materials coming through the open loop are converted into products with different purposes than the original form. Open loop recycling is also referred to as downcycling and common examples of downcycled output is carpeting or fleece fibres originating from recovered plastic bottles.

Closed loop targets supply chain sustainability. A closed loop process is when plastic is recovered, and the output is used to manufacture another product in the same product category – see Figure 9. Two very common examples of this system are PET bottles and HDPE milk bottles.

Closed loop recycling can only take place when regulation and required technical performance are not an obstacle. Within food-contact packaging applications there is legislation which governs whether closed-loop recycling can take place. There are plastic formats which, due to food-contact regulations, cannot incorporate recycled content.

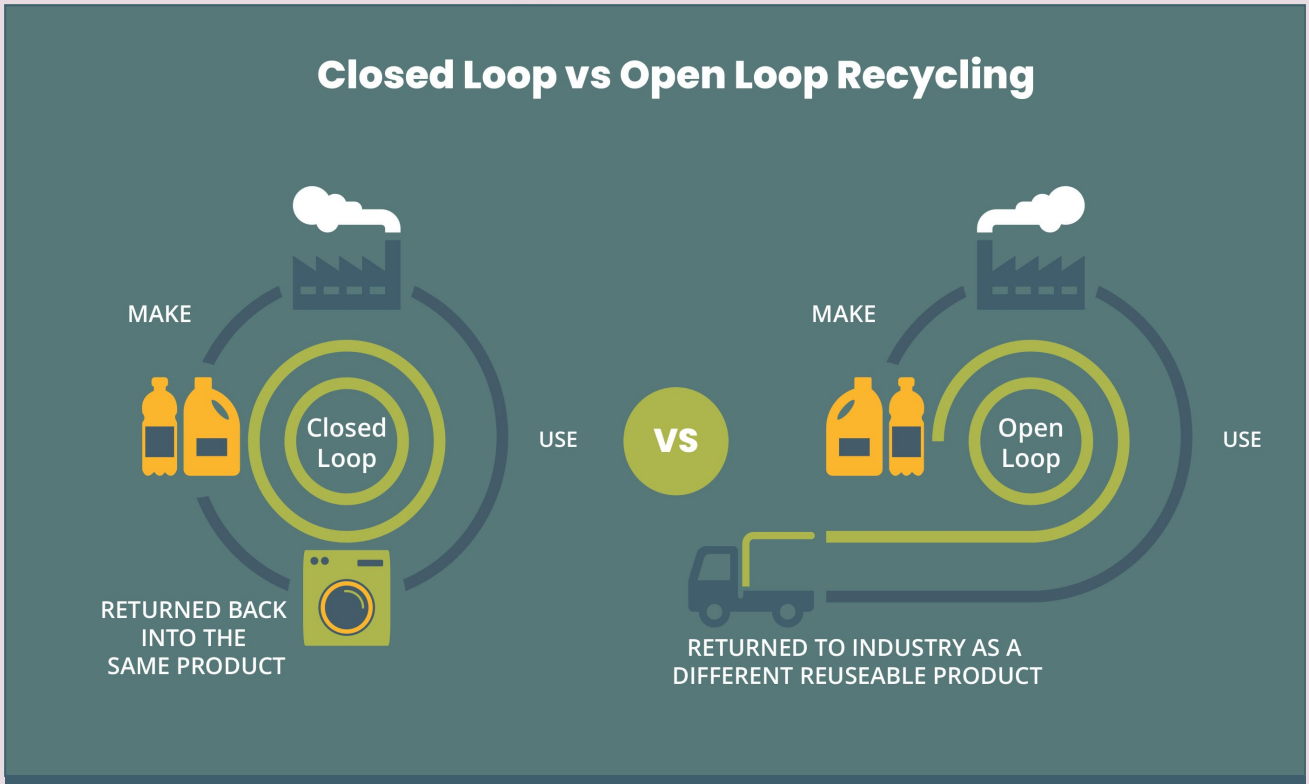


Figure 9: Closed - Open Loop system. Source: Planet Tracker.

Price Impact

The low availability of recycled plastics is resulting in increased prices across different recovered commodities.

The UK introduced a new tax of £200 (USD 248) per tonne on April 1 2022 which applies to plastic packaging manufactured in, or imported into, the UK, which does not contain at least 30% recycled plastic.[xv] However, the price of recycled PET pellet is on average £561 (USD 696) per tonne higher than the price of virgin PET and the tax combined – see Figure 10.

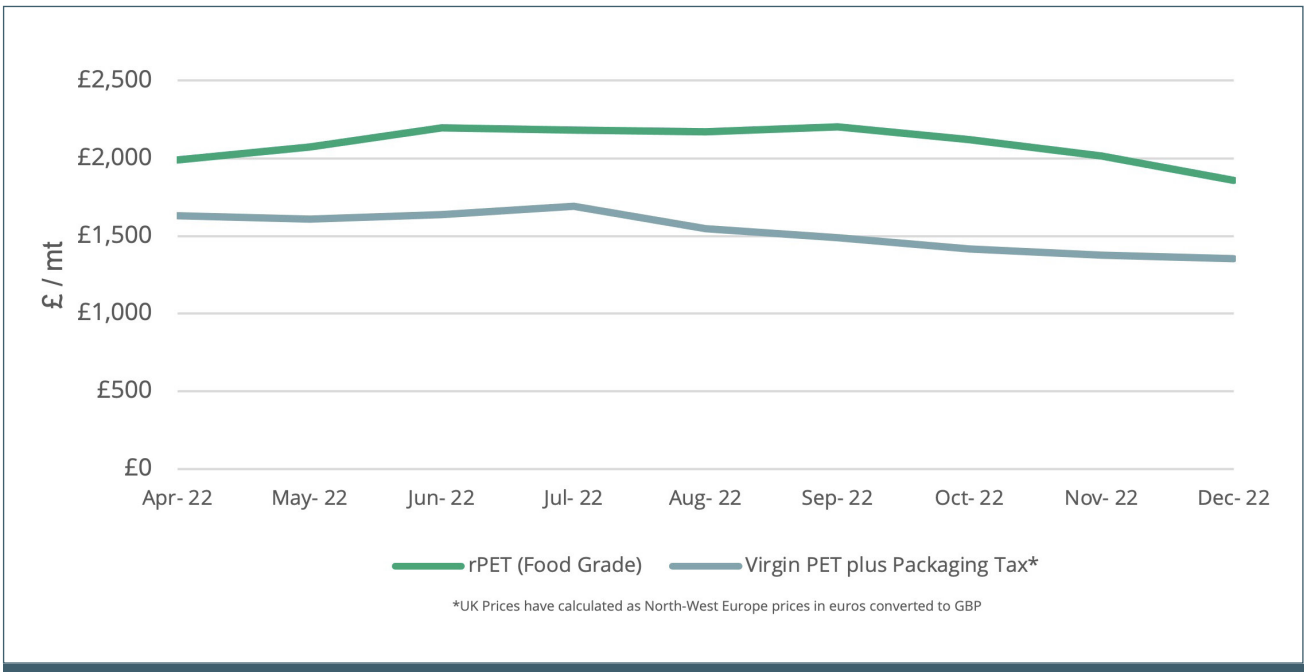


Figure 10: Recycled PET pellet prices in the UK are higher than Virgin PET Bottle + Packaging Tax prices. Source: ICIS / Gov.UK

For example, in the UK, the price of recycled film is so expensive that manufacturers prefer to use less than 30% recycled content in their products as it is cheaper to pay the tax rather than paying to recover the commodity.[xvi]

Further, the price of recycled PET pellet in Europe is steadily increasing creating a price differentiation which is encouraging a shift towards cheaper virgin resin. In 2022, the gap between recycled pellet and virgin material is 86% higher than it was in 2019 (in 2022, the virgin bottle is sold on average at €1,549 (USD 1,683) per tonne, whilst the recycled pellet is sold 51% higher at €2,346 (USD 2,549) per tonne).[xvii] Currently, the combination of low virgin prices and high stock volumes results in raised flake prices. Producers and corporates turn towards virgin and will possibly continue doing so if virgin prices continue dropping – see Figure 11.[xviii]

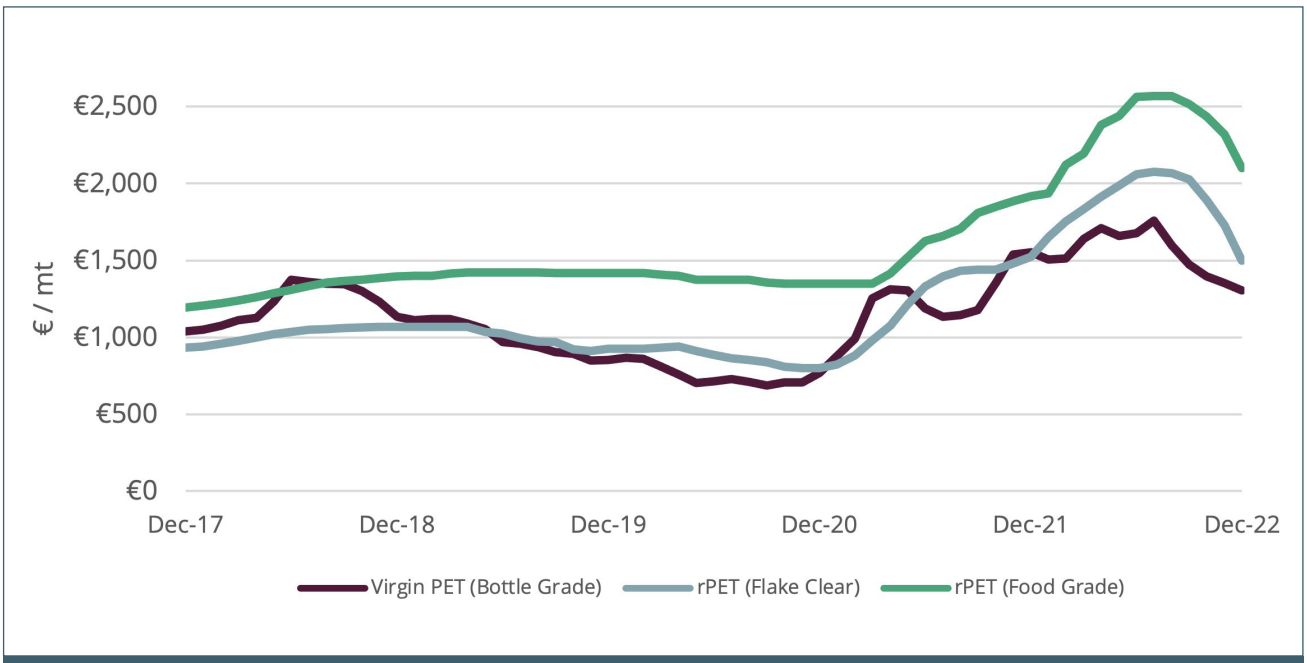


Figure 11: European PET Virgin Vs Recycled prices (Mid prices). Source: ICIS.

rPET is not the only grade that faces high prices. The European recycled High-Density Polyethylene (rHDPE) prices also achieved a premium of €150 (USD 163) per tonne against virgin HDPE at the end of 2020 according to S&P Global. The increase in HDPE recycled prices was caused by increased production rates due to the combination of low virgin supply and strong end-consumer demand for recycling content in Europe – see Figures 12[xix] and 13.[xx]

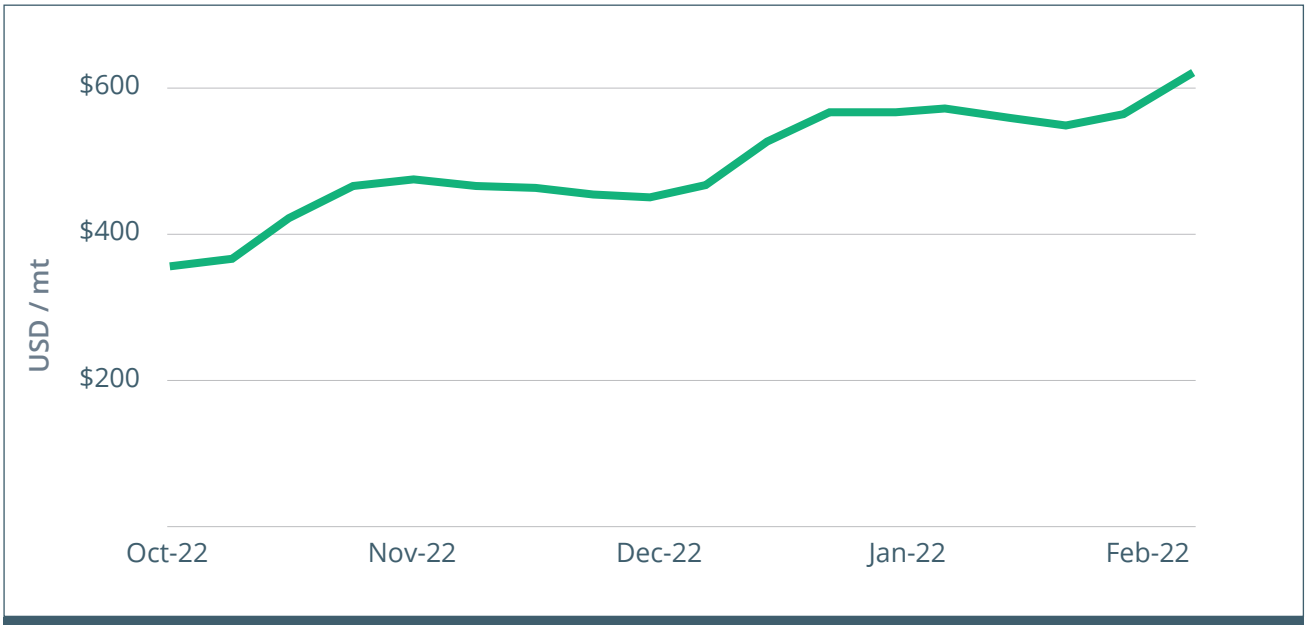


Figure 12: Recycled HDPE Natural Pellets premium over virgin widen in Europe. Source: S&P Global Commodity Insights.

Figure 13: rHDPE light pellets price increasing since Jan 2020. Source: S&P Global Platts.

Virgin material is manufactured by blending raw materials in a polymerization process. On the other hand, the post-consumer recycled PET has to go through a longer process (from household collection to Material Recycling Facility (MRF) to re-processor to end-user) and at every step there is potential for yield loss (approximately 17% overall). As a result, these two different processes lead to different cost structures, so the average cost of producing recycled PET is 16% more expensive than the virgin equivalent.[xxi]

Table 2: Most common plastic packaging grades. Source: Planet Tracker.	
HDPE[xxii]	**PET**[xxiii]
Common applications: shampoo/ conditioner bottles, beauty care, milk bottles, fresh juice bottles, toys, chemical containers, pipe systems, recycling bins, grocery bags, cereal box liners, flowerpots, bleach and other homecare bottles.	**Common applications**: packaging foods and beverages (soft drinks, water bottles and juices), packaging salad dressings, cooking oils, mouthwash, shampoo, body wash, liquid hand soap, window cleaner, tennis balls, carry home food microwave/ oven containers.
Properties: flexible, affordable, weatherproof, good chemical resistance, UV resistant, durable, versatile. HDPE is great for blow moulding applications, especially food and beverage containers because it won't leach into the bottle.	**Properties**: flexible, affordable, weatherproof, good chemical resistance, UV resistant, durable, versatile.
Environmental Facts: • In the UK, approximately 4 billion HDPE milk containers are made and sold every year and around 79% are recycled. On average, HDPE milk bottles are now 15% lighter than they were three years ago. • On average, HDPE milk bottles in the UK contain up to 15% recycled material.	**Environmental Facts**: • All PET plastic bottles can be recycled. Around 60% of them in the household waste flow are being collected in the UK. • Major drinks manufacturers have signed up to the Courtauld Commitment, focused on finding opportunities to reduce the carbon impact of packaging, reduction of packaging and packaging weight. • PET bottles have been redesigned so that they are 30% lighter than 15 years ago.

- ***What can we do to increase the usage of recycled content?***
- ***Would it be easier if the colour shade of the bottle stopped being a factor for producers, brand owners and recycling facilities?***
- ***Could different labelling help to resolve this problem?***

Searching for a Solution

Choosing a Label

There is a broad range of labels available and deciding on suitability depends on several factors. No one size fits all! Each material has its own distinctive features that play a part in achieving efficiency and the desired result.

There are two types of labels used in product packaging: plastic and paper labels. Table 3[xxiv] below provides some basic characteristics to distinguish the difference between these two types:

Table 3: Plastic vs Paper labels. Source: Enko Products and Planet Tracker.

Plastic Labels	Paper Labels
Pros: • Available in transparent designs for 'no label' look • Clear matte options for stylish look • Flexibility that allows to conform to all surfaces • Resistant to water, cold, heat, chemical, tearing and fading • Perfect for heavy-duty applications	**Pros**: • Vintage/ handmade look • Large variety of colours • Great printability options
Cons: • More expensive than paper labels	**Cons**: • Shorter life expectancy • Sensitive to time, tearing, water, and other environmental conditions • Sensitive to fade • Less durable than plastic
Recommended applications: • Perfect for odd-shaped containers and those that aim to be squeezed like tube bottles • Clear colour makes them perfect for tin containers and see-through purposes • Perfect for high-moisture or outdoor environments and long-term applications • Ideal for chemicals, refrigerated food and beverages, hair care and homecare products	**Recommended applications**: • Good for indoor and short-term applications only • Shipping and barcode labels • Non-perishable goods like canned food, spices, etc • Household and beauty products like soap, candles, etc • Door hangers, business cards, and gift cards

Plastic labels provide a range of benefits and are often the best option in comparison to paper ones.

Examining Plastic Labels

There are six common plastic labels as defined by source material: vinyl, polypropylene, polyolefin, polymide, polyethylene and polyester. Table 4[xxv] shows all the different types of plastic labels and some of their key characteristics.

Table 4: Plastic Label Types. Source: Enko Products & Planet Tracker.

Plastic Labels	Description
Vinyl	• More flexibility • Durable for outdoor environment
Polypropylene	• Known as Biaxially Oriented Polypropylene (BOPP) labels • Most common film labels for short-term applications • Not very expensive • Mainly clear colour (or white) • Strong against tearing • Resistant to oil and water • Good for haircare products and beverages
Polyolefin	• Very adaptable and soft • Perfect for squeeze applications and flexible packaging
Polyimide	• Resistant to heat • Ideal for extreme temperatures
Polyethylene	• Known as Polyethylene Terephthalate (PET) labels • Malleable material • Often used in curved surfaces such as bottles
Polyester	• Designed for tough applications • Scratch and tear-resistant • Perfect for corrosive and hazardous products, frozen food, outdoor items, and long-distance transport

The labels can also be categorised based on the application process. Figure14 shows the different types of processes.

Figure 14: Different types of labels based on application process. Source: Planet Tracker.

The Shrink Sleeve

Planet Tracker believes shrink labels are a sustainable option as they cover the bottle and therefore remove the need for a coloured container.

Shrink sleeves are printed labels that are heat-wrapped to the shape of the container. This type of label is normally used on plastic bottles, glass or tin cans and is mainly made of a polyester or plastic film material.

Shrink sleeve labels are usually comprised of:

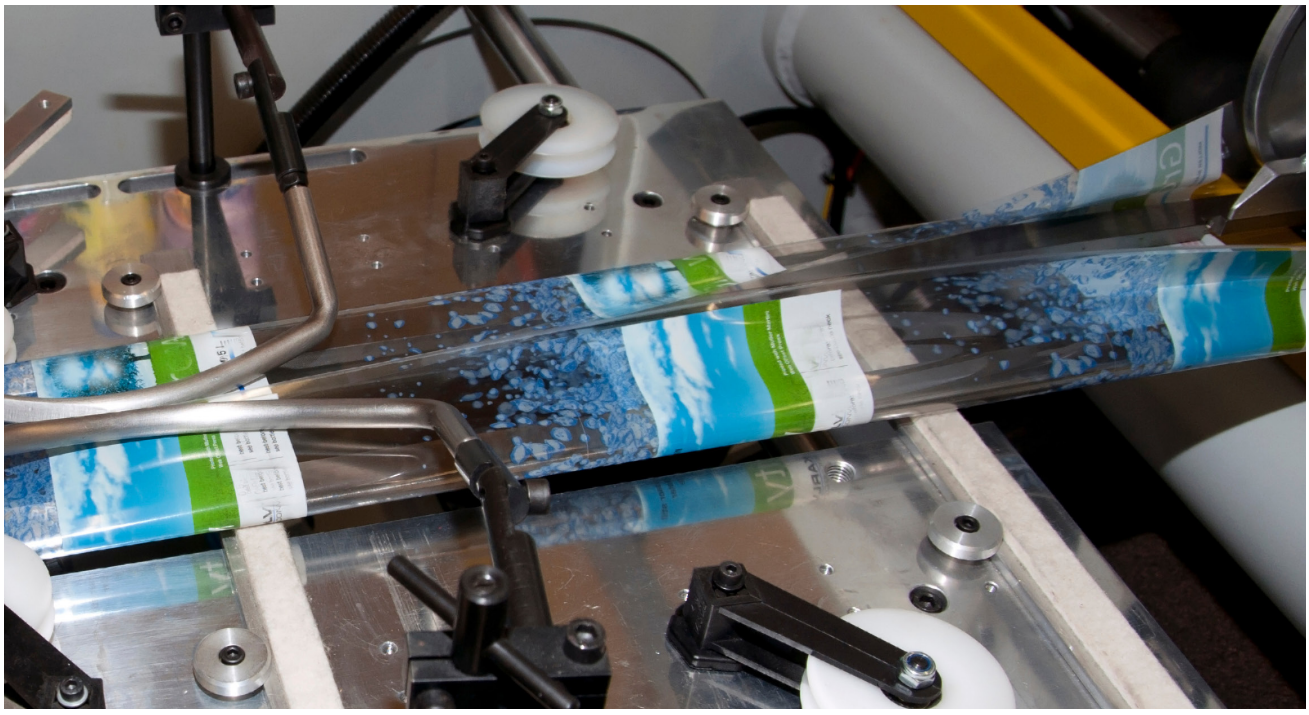
Polyproplyene Terephthalate Glycol (PETg): this film blends high density and strength and makes it a strong choice. PETg is known for transparency and heat resistance. PET shrink sleeves have become very popular recently mainly because they are recyclable.

Polyvinyl Chloride (PVC): this film shrinks at low temperatures and keeps its high density. Currently PVC is the most widely used material; its clarity is great, also it shrinks at multiple temperature and is strong for different weather conditions. PVC is scuff tolerant and low at cost.

Oriented Polystyrene (OPS): this film is environmentally friendly, and cheaper than PETg. It offers clarity, higher yield and a controlled shrink level, but it requires specific handling and processing conditions.

Polylactic Acid (PLA): this is a bio-based film grade, but it will only decompose rapidly in high temperatures. Unfortunately, it is not widely available, it is expensive and requires specific handling; therefore, its adoption is not very common at the moment.

The most important factor with shrink sleeve label recyclability is the material from which the shrink label is produced. Presently, PVC is the most common material used in shrink sleeve labels, but unfortunately it is not recyclable. Substitutes have grown in the last few years. PETg can be recycled and is user-friendly, meaning that it creates high-grade shrink labels while enhancing the recyclability of the overall packaging (container and label). PVC and PETg differ in price with the latter being the more expensive option. However, the trade-off in recyclability is a huge advantage for this choice of material, if brand owners do not view this as an externality. Unfortunately, there is no cost to the packaging company; if they are using a non-recycled label, the cost falls to the recycler, unless regulation were to change.



The Benefits of Shrink Labels[xxvi]

Branding: 360 degrees wrapping is beneficial for marketing and branding. A study of 800 consumers carried out on behalf of Eastman Chemical Company found that buyers are instinctively drawn to unusual-shaped packaging with shrink-sleeve labelling.

Tamper-evident seals: Shrink sleeves have the advantage of creating a tamper-evident band to increase security.

Flexible and strong: The shrink labels add extra security to the product and protect the packaging from scratches, tears, and other damage during shipping. Further, they are usually made from durable materials, which make them a great option for hair care products and beer that are found usually in humid or high-moisture environments like showers and fridges.

Sustainability: The shrink sleeves that are used today can be from biodegradable and eco-friendly products; therefore, they can be removed from the packaging easily - especially those with a 'zipper' can be removed easily - and can be recycled. There are also some PET sleeves can be fully recyclable along with the PET bottles without the need to be removed.

New technology: Shrink labelling is compatible with digital press technology which allows shorter runs and quicker turnaround – even label by label variation for promotional campaigns or flavour variation within a product line. For example, Klockner Pentaplast has launched the Pentalabel SmartCycle shrink sleeve which is a completely recyclable product that can flow through the recycling process alongside any PET bottles, without causing any process disruptions. Similarly, SKC Group has launched the SKC Ecolabel which also does not need to be removed and no special recycling equipment is needed. The label can be printed with non-staining, washable ink, which rinses off during the recycling wash process; no contamination of flake or wash water occurs. The ink-free flake can then be dried and extruded into clear, recycled PET resin for use in manufacturing more bottles.

So why are these labels not commonplace?

There are disadvantages to shrink labels which inhibit their universal use. Below we list the main drawbacks.

- Most local recycling facilities do not require the removal of labels from the households. If the label and container are of the same material, the high temperature during recycling will burn away the ink and the excess glue from the containers. However if the labels are not removed, they could endanger contamination of the total production line. For example, if a sleeve label is on a HDPE bottle and not removed before the bottle is processed by the recycling line, then during the sorting process the HDPE grade could fail its specification and the bottle will be re-directed and end up in a wrong line and as a result will cause contamination.
- Sustainability is the key difference between these products. PETg is recyclable, however it is processed at much higher temperatures than PET, thus it goes into recycling code 07 (mixed/other recycling) instead of 01 like PET.

  Therefore, in order to be recycled, it requires a specific infrastructure and, in the absence of this, the possibility of ending up in landfill exists.
- The shrink sleeve may be associated with home care products or energy drinks. Many brand owners do not wish to use them in their beauty care packaging as they may not be identified as luxury products (haircare, cosmetics etc).

Solving the Puzzle

Overcoming the obstacles to increasing recycling rates to meaningful levels is within our grasp. Aligning labelling and the composition of bottles and containers is not a technological leap; in many cases this is achievable now. However, it does require the consumer brand companies to adopt a proper sustainability role. We recognise that marketing departments will push back, but they should be expected to use their skills to align circularity processes with their brand. At least if they did this, it would be an impressive pushback against greenwashing claims. Below, we propose how different actors can facilitate the alignment of containers and labelling:

- **Brand owners**, manufacturers and packaging companies need to recognise the difficulty for recyclers to achieve colour consistency specifications. Lower colour expectations would discourage the default position of turning to virgin options. Planet Tracker accepts there is a marketing challenge for these brand owners, but at least this move would align their sustainability credentials with their products, a claim they are keen to make.

- **Packaging companies** that are using PET clear bottles should include new innovative types of labels in their products, such as SKC Ecolabel or Pentalabel SmartCycle. Both can be recycled alongside the PET bottle they decorate. Widespread adoption would push down prices of these new labels therefore allowing margins to be maintained. Those that are using non-PET bottles should use a label that can be recycled even if it has to be separated from the bottle.

- Planet Tracker recognises the substantial differential between virgin and recycled material. But some self-help would reduce the bottleneck, pushing down the price of recycled feedstocks. **Shareholders and investors** who advocate sustainable and green practices, should encourage companies towards circular solutions – please see Engagement Sheet.

- **Investors** should determine what role they can play in the financing of the recycling industry, resulting in an increase in the supply of PCP material, in turn lowering the price of recycled feedstock.

- **Consumers** should be educated on what can be recycled and its best disposal route. Labels may have to be removed and taken to the local facilities (e.g. supermarkets) to be reprocessed.

- **Infrastructure for recycling collections** needs to be improved, so sleeve labels can be collected with household collections instead of at supermarkets, which will reduce the risk of the labels ending up in landfill. Of course, this requires financing. Governments are reluctant to do this. For example, in the UK, Plastic Tax earnings are all invested in polyethene, with little directed to developing collection schemes or recycling film processes. The **Government** needs to further embrace the recycling and collection processes of labels and other films. It might not be glamourous, but neither is pollution.

- **Policymakers** should recognise that self-regulation is not working to effect change quickly, so they should introduce penalties for those packagers that use labels that cannot be recycled where there is a recyclable alternative. Such income should be re-directed downstream so that collection, sorting and recycling can be improved.

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ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. Our mission is to create significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

PLASTIC TRACKER

The goal of Plastics Tracker is to stem the flow of environmentally damaging plastics and related-products that are creating global waste and health issues by transparently mapping capital flows and influence in the sector, starting from the production of resins through to product-use. By illuminating risks related to natural capital degradation and depletion, investors, lenders and other corporate stakeholders across the economy will be enabled to create more sustainable plastics products.

ACKNOWLEDGEMENTS

Authors: Thalia Bofiliou, Senior Investment Analyst (Plastics), Planet Tracker;
John Willis, Director of Research, Planet Tracker

Editor: Dominic Lyle, Director of Communications

WITH THANKS TO OUR FUNDERS

MINDEROO FOUNDATION

The Jock Clough Marine Foundation

Flotilla FOUNDATION

Suggested citation: Thalia Bofiliou, John Willis, Packaging Labels: Don't lose your bottle over a label, Planet Tracker (2022).

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