

Transition Risk Series

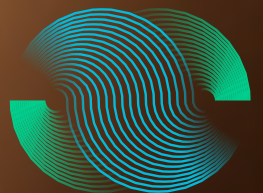
MARKET TRENDS

Sustainability as business opportunity in food and beverage

Centre for
Risk Studies



UNIVERSITY OF
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Risilience
Intelligently driving sustainability

Changing market trends are reshaping global business

Transition to the future low-carbon and nature-positive economies is presenting companies with unprecedented market challenges and risks that call for a new approach to achieving business success.

According to the World Economic Forum's Global Risks Report 2024, environmental risks make up more than half of the top ten risks over the next ten years, with extreme weather events, critical change to Earth's systems, and biodiversity loss and ecosystem collapse making the top three¹. Considering more than half of the world's gross domestic product (GDP), equivalent to an estimated US \$58 trillion, is moderately or highly dependent on nature, rising from US \$44 trillion in 2020², these risks cannot be ignored.

Consumers are increasingly aware of the impacts of the climate and nature crises and are looking to brands to demonstrate environmental stewardship. Purchasing power is shifting to support more sustainable products

and services and the preference for businesses to be seen as less environmentally damaging is forecast to be an enduring trend³ and one that can lead to bottom-line growth. As market conditions change, market share is up for grabs and organisations that successfully pivot their value proposition to align with the future market will outperform their peers.

Corporates are also under scrutiny from global regulatory mandates. Mechanisms that are driving more sustainable business practices and shaping economic trends are changing markets and the ways in which business operates.

Companies must move with market conditions and prepare the ground to become profitably sustainable. This change process requires access to data and analytics to provide strategic insight into changing markets in the transition to a net-zero and nature-positive future.

¹ <https://www.weforum.org/agenda/2024/01/everything-you-need-to-know-about-climate-and-nature-at-davos-2024/>

² <https://www.pwc.com/gx/en/news-room/press-releases/2023/pwcboosts-global-nature-and-biodiversity-capabilities.html>

³ <https://www.forbes.com/sites/bernardmarr/2023/09/25/the-10-biggest-business-trends-for-2024-everyone-must-be-ready-for-now/>

The business of change

In the context of this transition, there are both macro-scale and micro-level changes that present risks and opportunities to business.

Macroeconomic demand shifts

When the world was locked down in 2020, in response to the COVID pandemic, once-bustling cities and high streets fell silent leaving bricks-and-mortar retail without customers. The same conditions that brought economic devastation to some favoured others. Amazon and Netflix benefitted from the new restrictions that created a captive audience; the e-commerce brand providing home deliveries of vital goods reported record revenues while the streaming service experienced a spike in subscribers – 183m global sign-ups by the close of Q1, a 23 per cent jump from a year earlier, as home entertainment provided welcome distraction to housebound viewers⁴.

These demand shifts reflect the wider macroeconomic market forces that shape world economies, bringing both risks to mitigate and opportunities to seize. The World Economic Forum’s Future of Jobs 2023 report cites the green transition, technological change, supply-chain transformations and changing consumer expectations as all generating demand for new jobs across industries and regions⁵.

Transition to the net-positive economy will see significant shifts in macrotrends. As demands on certain sectors increase, such as the need for critical minerals to produce lithium-ion batteries, these changes can profoundly impact a company’s market size and bottom line.

A number of core economic changes, known as megatrends, are expected as part of the transition to a low-carbon and nature-positive economy:

- Decarbonisation of electricity generation
- Increasing electrification of economic activity
- Shifts in transport activity (including modes and fuel sources)
- Phasing out of fossil fuels
- Changes in agriculture demand patterns
- Decarbonisation of cement and steel production

The impacts from these six demand shifts will be felt beyond the sectors they are directly associated with, due to the effects that propagate other industries through their supply chains; both business-to-business (B2B) and business-to-consumer (B2C). The speed and extent of these sector-level changes are determined by the emission pathway, to include the Paris Ambition, Paris Agreement, stated policy, current policy and no policy, which will each have different consequences for the market.

Microeconomic demand shifts

A surge in consumer demand for more sustainably-packaged products has seen drinks giant, Diageo, collaborate on an R&D project with sustainable packaging technology company Pulpex to produce a Johnnie Walker whisky bottle made from paper-based products.

The initiative features a partner consortium of leading and non-competing FMCG companies all exploring the possibility of using own-branded paper bottles for their products in the hope of accelerating time to market. In July last year, Pulpex announced a successful investment round enabling the company to deliver a ‘world first, commercial scale production line to produce genuine paper bottles made of 90 per cent+ sustainably sourced fibre’ that is water-saving, energy-efficient and recyclable and viable at commercial manufacturing speeds and scale.

Ewan Andrew, President, Global Supply Chain & Procurement and Chief Sustainability Office, Diageo, said: “When it comes to our packaging, we’re taking an approach of progress over perfection, knowing our packaging will need to evolve along with consumer needs and technological advancements. The consumer is

becoming more sustainability savvy, and we believe we can meet that need using our design and innovation to bring premium products and more sustainable solutions together.”

In March 2023, Diageo announced the trial of 30,000 bottles of Baileys in an aluminium format across selected airports in Europe, Copenhagen, Amsterdam and Frankfurt, with an anticipated 44 per cent reduction in carbon versus the current glass bottle⁶.

Micro-level changes emerge from variations in consumer demand as preferences shift towards buying more seemingly sustainable products and services potentially affecting a company’s market share within a sector. To remain competitive, companies must have a view of and be sufficiently agile to adapt to changes in demand.

Analytics that enable a company to keep abreast of shifts in consumer demand, and quantify the risks and opportunities that emerge from these changes, can offer organisations early warning of future market trends, establishing a business advantage.

⁴ <https://www.ft.com/content/844ed28c-8074-4856-bde0-20f3bf4cd8f0>
⁵ https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf

⁶ <https://www.diageo.com/en/news-and-media/press-releases/2024/diageo-announces-paper-based-bottle-trial-for-baileys-irish-cream-liqueur> and <https://www.pulpex.com/post/pulpex-completes-successful-series-c-funding>

The power of purchasing

Deloitte research⁷ cites a growing trend of consumers becoming more environmentally conscious. The annual survey into consumer attitudes to sustainability and sustainable behaviours found that more consumers are taking into consideration durability and repairability when making a purchase, and whether products are labelled as responsibly sourced or manufactured, or support biodiversity. The same survey reports that a third of consumers said their trust in brands would be improved if brands were recognised as an ethical/sustainable provider by an independent third party.

According to the PwC 2024 Voice of the Consumer Survey⁸, despite cost-of-living pressures, some consumers say they are willing to spend 9.7 per cent more, on average, for sustainably-produced or sourced goods as almost nine in ten report experiencing first-hand the disruptive effects of climate change in their daily lives.

This change in consumer demand is expected to grow. Forbes names customer demand for sustainable business as one of its top societal trends for 2024⁹, with people preferring companies with a solid commitment to reducing their environmental footprint, noting that “green solutions often lead to bottom-line growth”. Barclays Bank reports a ‘recommerce revolution’, with reusing, reselling and renting worth almost £7 billion to the UK economy, as consumers embrace more sustainable shopping habits¹⁰.

Consumer markets will likely be disrupted by new entrants offering more alternative sustainable products and services, which appeal to this growing market demand. The speed and extent of these product-level changes are also determined by the emission pathway, each the Paris Ambition, Paris Agreement, stated policy, current policy and no policy, each of which will have different consequences for sales of a particular product or service.

The possible emission pathways are also tied to changes in consumer demand that will help to determine whether the world will experience an orderly or disorderly transition. Policies can drive responsible consumer demands that call for sustainable purchasing and support diets that contribute to net-zero and nature-positive goals. Alternatively, our current choices and levels of consumption could continue but become less carbon intensive over time.

Purchasing habits will be influenced by various climate-and-nature-related trends simultaneously. Customers will make choices according to what they care about most; buy fashion made from more sustainable (less environmentally damaging – net-zero and nature-positive) materials, reduce plastic packaging, stop meat consumption and limit the number of flights taken.

These changes in consumer demand bring both risk and opportunity. The vulnerability of individual companies to the revenue shocks that can arise from changes in consumer trends will also depend on various attributes of the products and services, as well as the characteristics of customers; including geography and demography. Furthermore, the ability of a company to optimise commercial opportunities emerging from these changes will also depend on the organisation’s agility and operational structure.

⁷ <https://www2.deloitte.com/uk/en/pages/consumer-business/articles/sustainable-consumer.html>
⁸ <https://www.pwc.com/gx/en/issues/c-suite-insights/voice-of-the-consumer-survey.html>
⁹ <https://www.forbes.com/sites/bernardmarr/2023/09/25/the-10-biggest-business-trends-for-2024-everyone-must-be-ready-for-now/>
¹⁰ <https://home.barclays/news/press-releases/2023/10/recommerce-revolution--reusing--reselling-and-renting-worth-almo/>

Sector focus: FMCG

Making the business case for sustainability

Sustainability is increasingly a business imperative for the fast-moving consumer goods (FMCG) sector. As awareness of the climate-and-nature crisis grows, more consumers are demanding products and services and favouring brands that help to reduce their impact on the environment¹¹. And consumer demand for sustainability is expected to grow over the next decade; forecasting experts calculate that the purchasing power of sustainability-savvy Millennials and Gen Z will surpass that of Boomers around the year 2030, with up to \$68 trillion in wealth transferring from Boomers to these younger generations by the end of this decade¹².

Popularity of Google searches relating to sustainable goods has increased by 71 per cent globally since 2016¹³. In fact, research indicates we have reached a tipping point for sustainability becoming a ‘baseline requirement for purchase’¹⁴.

Consumers are not the only source of pressure on FMCG businesses to become sustainably profitable. Global regulatory mandates, financial reporting and investor expectations are also driving more sustainable business practices that support a shift in the flow of capital away from climate-and-nature-negative outcomes towards positive climate-and-nature activities.

Making sustainability a business imperative also makes financial sense. According to McKinsey Quarterly¹⁵, environmental, social and governance (ESG) links to cash flow in five important ways: (1) facilitating top-line growth, (2) reducing costs, (3) minimising regulatory and legal interventions, (4) increasing employee productivity, and (5) optimising investment and capital expenditures.

Faced with the global consumer-and-regulatory drive towards sustainability, business leaders can benefit from the value proposition that the net-positive economy will bring, including enhanced stakeholder relationships, boosted brand reputation and reaching new markets.

¹¹ <https://www.pwc.com/gx/en/news-room/press-releases/2024/pwc-2024-voice-of-consumer-survey.html#:~:text=Consumers%20are%20increasingly%20prioritising%20sustainability,their%20impact%20on%20the%20environment>
¹² <https://hbr.org/2023/09/research-consumers-sustainability-demands-are-rising>
¹³ <https://impact-stage.economist.com/sustainability/ecosystems-resources/an-eco-wakening-measuring-global-awareness-engagement-and-action-for-nature>
¹⁴ <https://hbr.org/2023/09/research-consumers-sustainability-demands-are-rising>
¹⁵ <https://www.mckinsey.com/-/media/McKinsey/Business%20Functions/Strategy%20and%20Corporate%20Finance/Our%20Insights/Five%20ways%20that%20ESG%20creates%20value/Five-ways-that-ESG-creates-value.ashx>

Challenges facing the FMCG buy-use-dispose business model

Commercial success in this cost-sensitive and highly-competitive sector requires balancing quality of product and affordability of price, and being sufficiently agile to meet changing consumer trends.

The purchasing frequency of FMCG products and the sector’s growth forecast means its operations can make a significant contribution to wider progress towards achieving net-zero and nature-positive goals. The Global FMCG Market July 2024¹⁶ reports FMCG market size was valued at USD 107.46 billion in 2022 and is poised to grow

from USD 111.39 billion in 2023 to USD 148.51 billion by 2031, at a compound annual growth rate (CAGR) of 3.66 per cent during the forecast period, 2024-2031.¹⁷

Food and FMCG industries produce more than one third of global emissions, mainly from their upstream supply chains¹⁸. Analysis suggests that of the 527 million FMCG products sold daily, plastics and packaging can account for 12-16 per cent of consumer companies’ total emissions¹⁹.

The problem of waste

The volume and turnover of FMCG products creates a significant amount of waste. In fact, \$2.6 trillion worth of material in FMCG, which accounts for 80 per cent of the material value, is thrown away and never recovered²⁰ every year.

Addressing carbon reduction requires finding solutions to the problem of waste. Moving away from the established linear model of mass consumption to a circular economy

is one proposition. Reuse of materials invites a slowdown of productive activity, opposing FMCG’s traditional model, and requires prolonging products by design. While this approach means transformational change for some businesses, the associated opportunities are persuasive; in the FMCG sector, recycled and sustainably-produced products are expected to see 15 to 25 per cent annual growth (CAGR) until 2030, leading to an €85 billion to €140 billion opportunity²¹.

Dependence and impact on nature

Nature is high on the business agenda for FMCG companies that depend on a consistent supply of natural resources essential for their products. The business operations of many of these organisations can have significant consequences for land use, water scarcity, soil health and biodiversity, all of which increasingly feature in global regulation. The inclusion of biodiversity and nature in financial reporting agendas is driven by growing awareness among investors and business leaders of the economic risks posed by biodiversity loss.

The EU’s Corporate Sustainability Reporting Directive (CSRD) is currently shaping corporate thinking around

nature regulation and requires companies in scope to report, both qualitatively and quantitatively, on a wide range of ESG topics. It mandates detailed reporting on sustainability matters related to water, land-use, biodiversity, human rights, labour rights and circular business models. In a future where the more complex nature landscape is likely to be as heavily regulated as carbon emissions are today, understanding an organisation’s value chain in relation to its nature-related dependencies, impacts, risks and opportunities will be essential to aligning with evolving and increasingly rigorous regulation.

Sustainability as a business imperative

Companies taking steps to make sustainability a strategic priority recognise that profits and long-term resilience rely on preparing to operate in a net-positive economy. Organisations slow to respond, or too quick to make sustainability statements lacking an evidenced and data-led transition strategy, risk being held to account by regulatory bodies. Laggards will lose share of market and experience revenue shocks as consumers choose to buy alternative sustainable options.

Further, corporates are increasingly subject to litigation that can be costly and lead to loss of brand value. According to the Grantham Research Institute on Climate Change and the Environment, the ‘judicial and societal intolerance towards misleading communications around climate credentials and the viability of legal avenues for challenging them’ is forecast to continue and ‘have broader implications for corporate conduct’²².

These risks are real. In January 2023, the FMCG sector attracted the attention of the UK Competition and Markets Authority (CMA), which announced plans to investigate ‘green’ claims made by FMCG organisations that could mislead consumers and go against relevant consumer protection law. The CMA selected several brands owned by FMCG behemoth Unilever for its first investigation, which is currently ongoing. The CMA has ‘the ability to determine, without resorting to court proceedings, when consumer protection law has been breached’ and can now ‘fine businesses up to 10 per cent of their global annual turnover’²³.

¹⁶ [https://www.skyquestt.com/report/fmcg-market#:~:text=FMCG%20Market%20size%20was%20valued,period%20\(2024%2D2031\)](https://www.skyquestt.com/report/fmcg-market#:~:text=FMCG%20Market%20size%20was%20valued,period%20(2024%2D2031))
¹⁷ [https://www.skyquestt.com/report/fmcg-market#:~:text=FMCG%20Market%20size%20was%20valued,period%20\(2024%2D2031\)](https://www.skyquestt.com/report/fmcg-market#:~:text=FMCG%20Market%20size%20was%20valued,period%20(2024%2D2031))
¹⁸ <https://www.weforum.org/agenda/2022/11/food-consumer-goods-supply-chains-decarbonization/>
¹⁹ <https://www.theconsumergoodsforum.com/wp-content/uploads/2022/11/Accenture-Net-Zero-Playbook-for-Consumer-Industries.pdf>
²⁰ <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/playing-offense-on-circularity-can-net-european-consumer-goods-companies-500-billion-euros>
²¹ <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/playing-offense-on-circularity-can-net-european-consumer-goods-companies-500-billion-euros>

²² <https://www.lse.ac.uk/granthaminstitute/news/climate-washing-litigation-towards-greater-corporate-accountability/>
²³ <https://www.pinsentmasons.com/out-law/analysis/dmcc-act-overhauls-uk-consumer-law-enforcement>



FMCG and the problem of packaging

Packaging is a pressing concern for FMCG companies. The global plastic packaging industry creates 1.8 billion tonnes of carbon emissions every year while recycling only nine per cent of the plastic produced²⁴.

The environmental harm caused by plastic waste is well documented; plastics, including microplastics, are now ubiquitous in our natural environment; ‘year on year, millions of tonnes of plastic, worth billions of dollars, ends up in landfills, is burned, or leaked into the environment.’²⁵ But finding solutions to making plastics recyclable, reusable or compostable is an ongoing and multi-faceted challenge that requires investment in R&D, waste management infrastructure and the recycling value chain.

There are industry calls for harmonised regulation to address the current fractured global regulatory picture and negotiations for the UN-led Global Plastics Treaty, which will hold all countries to a high common standard on plastic consumption and lay foundations for a plastic-pollution-free future, are due to complete by the end of this year (2024). Recent reports of a change in policy direction from the US to support caps on plastic production have been called a ‘watershed moment’ in the fight against plastic pollution²⁶.

Packaging for business success

While progress to reduce plastic use for many FMCG corporates has been slower than hoped, with some sector-leading brands reported to be reappraising targets while struggling to find solutions to their plastic use²⁷, reducing or changing the design and materials of packaging can make business sense. Packaging is key to global furniture retailer Ikea’s financial success²⁸; cutting the packaging of a series of sofas by 50 per cent in 2010 decreased the number of delivery truck loads by almost 8,000 during one year, and consequently made savings of millions of euros. A similar approach to the packaging of a swivel chair resulted in savings of €1.2 million per year²⁹. Technology company Dell’s approach to advancing sustainable packaging design helped to ‘save more than \$8.1 million and eliminate 20 million pounds in weight of packaging material’. Global drinks giant, Diageo, has

responded to a surge in consumer demand for more sustainably-packaged products by collaborating to invest in R&D to explore different material options. In 2024 the company announced its work on lightweighting glass “continues to reduce costs and carbon”³⁰.

Optimising packaging design can deliver cost savings and sustainability. NTT Data reports one client’s modifications to a frozen pizza box yielded over \$600,000 in annual cost savings through efficiencies, including reducing CO2 emissions, transport and fuel costs: “Sustainability is always a positive byproduct of packaging optimization. For instance, the frozen pizza box initiative that saved our client money also removes 100 tons of CO2 emissions and saves 3,000 trees annually”³¹.

Sustainability marks FMCG direction of travel

Opportunities as well as risks await companies transitioning to embed more sustainable practices and operations across their value chain. The numbers add up: ‘sales of products marketed as sustainable grew 2.7x faster than products not marketed as sustainable and achieved a six-year compound annual growth rate of 7.3 per cent vs 2.8 per cent for its conventional counterparts’³².

While the transition to profitable sustainability for the FMCG sector requires investment, the direction of travel towards net positive is firmly set by global regulation, investor expectations and consumer demand. FMCG

leaders know that failure to manage environmental stewardship of their operations risks losing business.

The financial benefits of sustainability are increasingly evident; lowering greenhouse gas (GHG) emissions mitigates against future carbon costs, reducing or changing packaging materials can decrease transportation and energy costs, and eliminating waste through more circular business models can deliver savings and operational efficiencies. The FMCG companies that get ahead of the sustainability curve today will be the sector leaders of tomorrow.

²⁴ <https://www.fmcgceo.co.uk/the-drive-for-change/>

²⁵ <https://www.ellenmacarthurfoundation.org/plastics-and-the-circular-economy-deep-dive>

²⁶ <https://www.reuters.com/sustainability/shift-us-backs-global-target-reduce-plastic-production-source-says-2024-08-14/>

²⁷ <https://www.bloomberg.com/news/features/2024-07-11/nestle-s-scaled-back-recycling-goals-highlight-world-s-plastic-pollution-problem>

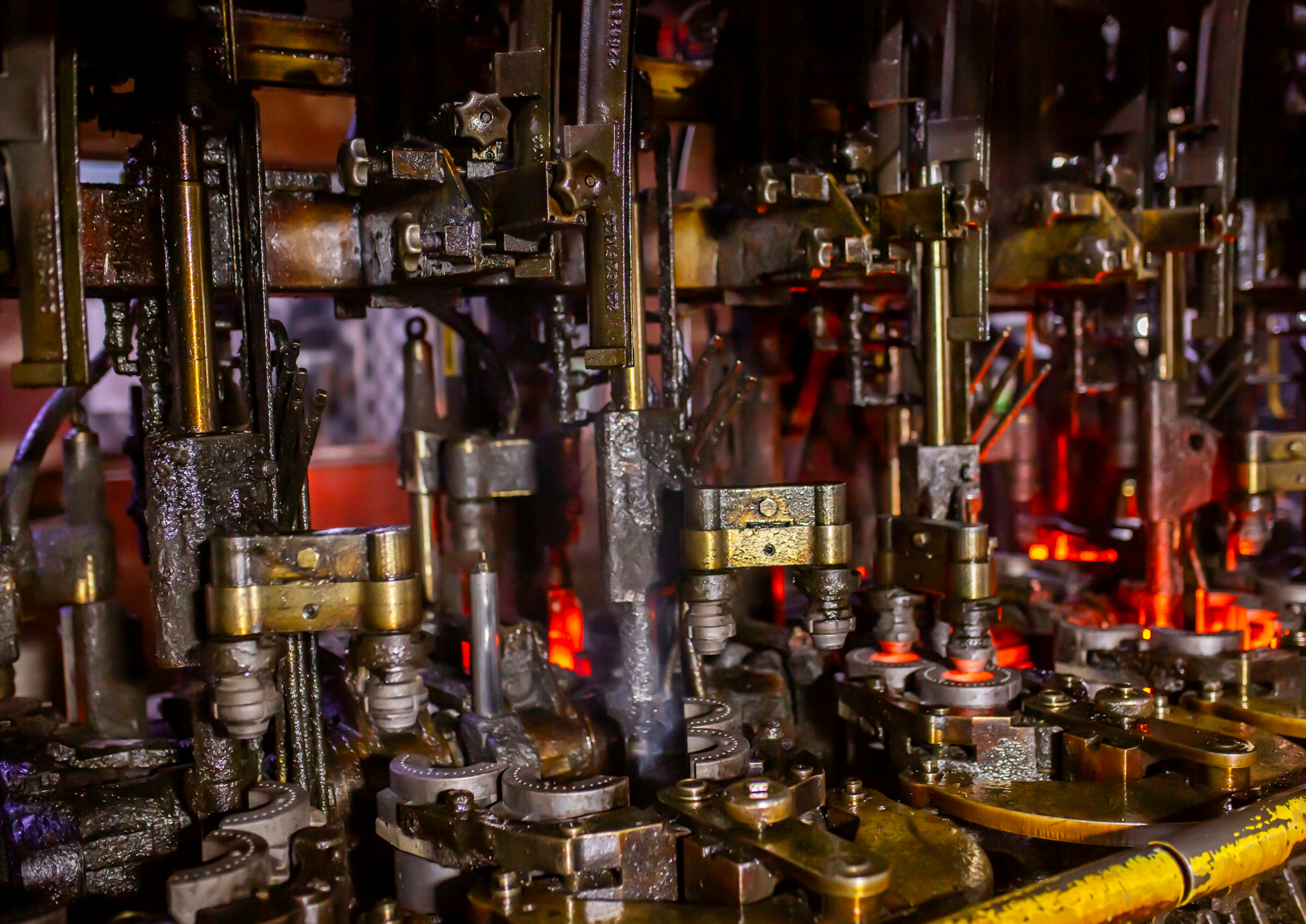
²⁸ <https://us.nttdata.com/en/blog/2024/july/save-millions-through-packaging-optimization>

²⁹ <https://www.wsj.com/articles/ikea-cant-stop-obsessing-about-its-packaging-1434533401>

³⁰ <https://media.diageo.com/diageo-corporate-media/media/bz2dzdhh/cagny-presentation-final-2024.pdf>

³¹ <https://us.nttdata.com/en/blog/2024/july/save-millions-through-packaging-optimization>

³² <https://www.theconsumergoodsforum.com/wp-content/uploads/2022/11/Accenture-Net-Zero-Playbook-for-Consumer-Industries.pdf>



Embedding sustainability for business value: the journey of Haven

The following section presents a hypothetical case study of a global FMCG company, Haven, which explores the business transformation required on the journey to achieve profitable sustainability for a net-positive future.

Haven’s decade of transformation

Haven is an established presence in the fast-moving consumer goods (FMCG) sector, which it has dominated for decades.³³ The company’s extensive portfolio of brands is trusted by customers and sold around the world. Customers value the quality and consistency of Haven products, which range from personal care to household cleaning staples, as well as health and beauty products. Within the sector, Haven’s perceived superior quality, combined with a strong brand identity, conveyed through its packaging, sets it apart from the competition.

Business focus is on markets in North America and Europe, where demand for high-quality products secures maximum margins, but growth has stalled in recent years and Haven’s market share has dwindled.

In 2024, Haven finds itself operating in a changing market environment. Governments in advanced economies are establishing legislation to deliver on national decarbonisation commitments and clamping down on waste produced by FMCGs. Consumers are critical of wasteful packaging and companies in the FMCG sector serve as examples for media stories of pollutants finding their way into the environment. Combined, these changes call into question Haven’s business strategy and put the firm under significant pressure.

In addition, consumer trends are changing and new challengers are entering the market. Competitors are disrupting the business ecosystem with sustainable products and retail stores are boosting sales by meeting consumer demand for more environmentally-friendly options.

Haven must rethink its strategy to determine future success. The company engages Risilience to conduct a data-led, climate-and-nature analysis to identify the transition risks Haven faces in this evolving market landscape. Analysis indicates that significant risk applies to the packaging of Haven’s products; the sourcing of materials from fossil fuels accounts for a large proportion of the company’s carbon footprint and, as emissions are increasingly taxed in many of its key markets, are likely to add to costs over time.

Furthermore, Haven’s current practices contribute to single-use plastic waste, which has led to a reduction in demand for its products due to heightened awareness of the negative environmental impacts. Also, the water required to produce plastic packaging has been identified as a key dependency and the location of production facilities in water-stressed areas exposes Haven to operational and financial risks associated with droughts.

Analysing the data enables Haven to understand the need to incorporate climate-and-nature-related risks and opportunities into its strategic business decision-making. Financially quantifying the costs and benefits enables the Board to understand the value of strategic sustainability and make informed decisions to deliver better outcomes.

The following sections capture Haven’s journey as it explores innovative packaging options and products, while facing increasing regulatory challenges and public scrutiny. Our study demonstrates how Haven maintains its market-leading position by mitigating risk and optimising opportunity. The company rethinks its product portfolio and establishes a strategic transition plan to reach its ambitious environmental targets and gain a competitive edge through timely actions

³³ Haven is a fictional company but all numbers and assumptions are representative of a similar-sized company in the FMCG sector



Changes in market environment necessitate a shift in Haven’s business strategy and the company announces its goal to achieve net-zero carbon emissions by 2040³⁴. Haven’s broad product range makes it difficult to assess supply chains, logistics, emissions and transformation options. Working with Risilience, the company identifies product groups with the highest risks to the business as homecare, family care and beauty (see Figure 1).

Able to quantify and prioritise risks, the company develops a transition plan and increases the use of recycled materials for packaging across its product range.

Initial investment is balanced by longer-term returns; using less plastics produced from fossil fuels avoids rising costs from carbon taxes across key jurisdictions, while decreasing Haven’s carbon footprint and meeting increased consumer demand for products using recyclable materials. Improved labelling on bottles ensures recycling instructions are clear, increasing recycling rates and compliance with regulation across key markets.

Haven uses advanced analytics to compare its reliance on carbon emissions to its peers in the FMCG sector (see Figure 2). Analysis reveals Haven’s production is significantly emissions-intensive relative to industry average.

Responding to the assessment, the Board launches an initiative to fundamentally rethink Haven’s products with the aim of reducing waste, weight and required packaging resources, investing in R&D to better understand the sustainability of different materials. Efficiency is seen as an opportunity to operate more sustainably while also cutting costs.

Haven optimises the packaging of all personal care brands. Shampoo bottles now use 40 per cent less materials overall, leading to reduced packaging and lower transportation costs. The same material is used for the entire bottle, including cap and label, boosting recycling rates. Overhauling the packaging process required initial investment but with insights from analytics and scenario analysis, Haven can balance this expenditure against the savings of reduced costs.

In 2028, regulatory pressure is mounting. Some jurisdictions have introduced mandatory thresholds for recycled materials to be used in packaging and the resulting high demand has increased costs for recycled plastics. In addition, the low quality of recycled plastics makes it difficult to comply with mandated recycling rates. One of Haven’s competitors has recently been the subject of litigation due to microplastics from its products being found in ocean waters. The case has attracted critical media coverage resulting in reputational damage to brand, providing a cautionary tale to the sector.

In response, Haven enters the next stage of its transition plan marked by the launch of a novel dispenser for its shampoo brand. The company develops reuseable aluminium bottles, along with recyclable, light plastic refill bags. The bags increase volume and contain a concentrated version of the shampoo that requires customers to add water, keeping material costs low and reducing transportation costs. The timely investment in R&D and proof-of-concept projects have enabled Haven to find a solution that delivers sustainability and cuts costs.

After 2030, as legally-binding national targets edge closer, regulation on waste and emissions is tightened. Extended Producer Responsibility (EPR) is introduced across most major economies, making producers financially liable for the waste and disposal of their products. Simultaneously, growing carbon costs make transport and energy-intensive processes increasingly expensive.

In 2032, Haven launches its new sustainable brand, GreenClean, offering the main product lines in an innovative and environmentally-friendly form. The company’s comprehensive assessment of packaging materials has supported Haven to move towards more sustainable options that support net-zero and nature-positive targets, including shampoo and body wash in a bar, wrapped in biodegradable paper. The launch promotes Haven’s reputation as a frontrunner in sustainable practices and the company gains market share by appealing to environmentally-conscious consumers (see Figure 3).

Using advanced analytics enabled the company to adapt to consumer trends for sustainable products in the early development of GreenClean. Taking an analytical approach strengthened the business case for the new brand and helped to anticipate how consumers would respond to the reformulated products.

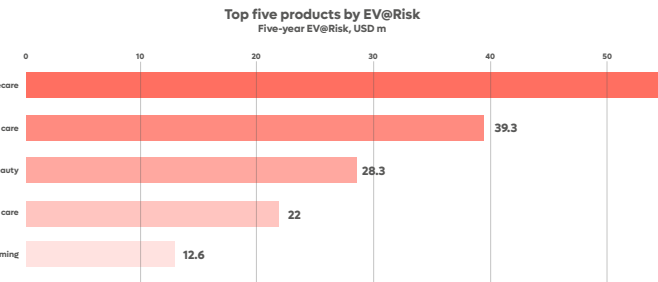
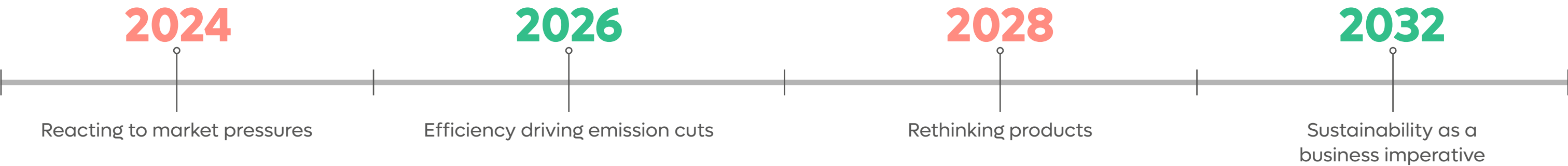


Figure 1: top five products by earnings-value-at-risk

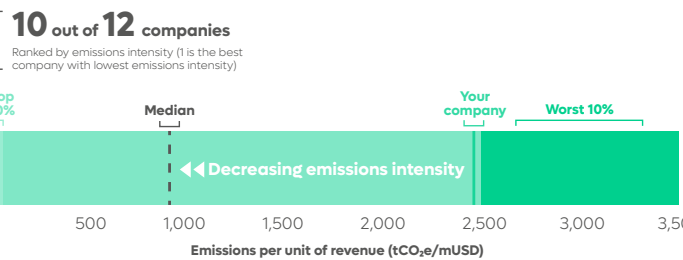


Figure 2: emissions intensity of Haven

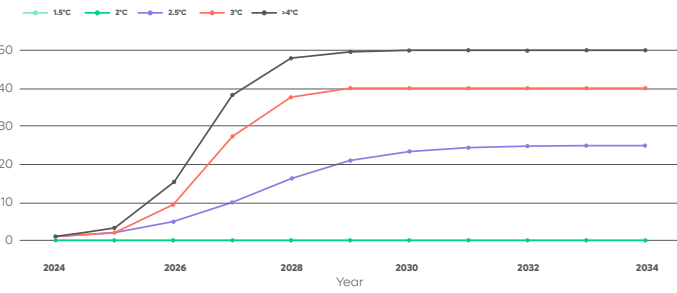


Figure 3: projected share of sustainable consumers

³⁴ See examples: Unilever, Annual Report and Accounts 2023 and Procter & Gamble, Annual Report 2023

Meeting opportunities of the net-positive economy

Completing a data-led assessment of its entire value chain, Haven has identified addressing Scope 3 emissions as the next focus to drive its decarbonisation-and-sustainability strategy. Always looking ahead, Haven engages with local authorities to improve municipal waste collection and recycling and employs further resources for R&D into products that require less water when used by consumers.

Committed to build on its business strategy that incorporates sustainability as key to decision-making, Haven maintains market position as a sector-leading brand but one that is now positioned to optimise the opportunities of the net-positive economy.

The climate-and-nature impacts of different packaging materials

As part of the comprehensive assessment of Haven’s business practices from a climate-and-nature standpoint, the company conducted a study on different packaging materials ahead of the launch of its new brand, GreenClean.

The table summarises different packaging materials for Haven’s standard 250ml shampoo bottles comparing climate-and-nature impacts, based on industry average estimates. The values shown are approximate and may depend on many factors, such as packaging design, sourcing of materials, supply-chain factors and country-specific waste practices.^{35,36,37,38,39,40,41,42}

Packaging material	Virgin plastic (PET or HDPE)	Recycled content plastic	Glass	Aluminium	Multi-material carton	Compostable paper wrap for soap bar
Average weight (grams per bottle)	50	20	400	20	20	10
Carbon emissions (kg CO2e per bottle)	0.3	0.15	0.4	0.5	0.1	0.1
Water usage (litres per bottle)	0.5	0.3	4	1	0.2	10
Recycling rate (%)	40	40	65	70	20	75
Recycled content (%)	0	40	50	35	5	50
Chemical impact	High	Moderate	Low	Moderate	Moderate	Low
End-of-life impact	High	High	Low	Low	High	Low
Production cost (US\$ per bottle)	0.3	0.25	1.25	1.2	0.2	0.5

Table 1: Nature metrics for different packaging materials for a 250ml bottle

³⁵ Food Packaging Forum, “European industry associations report latest recycling rates”, 16 July 2024.

³⁶ House of Commons, Research Briefing, “Plastic Waste”, 20 March 2024.

³⁷ Van Ewijk, S., Stegemann, J. A., & Ekins, P. (2018). Global life cycle paper flows, recycling metrics, and material efficiency. Journal of Industrial Ecology, 22(4), 686–693. <https://doi.org/10.1111/jiec.12613>

³⁸ Department for Environment – Food & Rural Affairs, “UK statistics on waste”, 28 June 2023.

³⁹ US Environmental Protection Agency, O. (2017, October 2). National overview:fFacts and figures on materials, wastes and recycling. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>

⁴⁰ Planet Tracker, “Climate Transition – Unilever leads, Colgate and P&G lag”, August 2023.

⁴¹ Global Plastics Outlook. (22 February 2022). OECD. https://www.oecd.org/en/publications/2022/02/global-plastics-outlook_a653d1c9.html

⁴² Plastics Europe, “The circular economy for plastics – a european overview”, 2022.

Materials – qualitative assessment

Virgin plastic bottle	
Weight	Moderate: plastic is lightweight, but the need for high-density plastics increases the weight slightly.
Carbon emissions	Moderate: virgin plastic has significant carbon emissions due to the extraction and processing of fossil fuels.
Water usage	Moderate: requires water for cooling during manufacturing and for processing raw materials (like crude oil).
Recycling rate	Moderate: PET and HDPE plastics are commonly recycled, but the rates are still relatively low due to contamination, lack of collection infrastructure, and low market demand for recycled plastic.
Recycled content	None: no recycled materials used by definition.
Chemical impact	High: the production involves the use of petrochemicals, which can release harmful substances. These chemicals can contribute to air and water pollution.
End-of-life impact	High: plastic degradation can release microplastics and toxic chemicals into the environment. Incineration of plastic can produce harmful emissions, including dioxins and furans.
Production cost	Moderate: relatively inexpensive to produce, benefiting from established supply chains and economies of scale; the cost of raw materials (derived from fossil fuels) is typically low

Recycled plastic bottle	
Weight	Light: recycled content plastic is often designed to be even lighter than virgin plastic.
Carbon emissions	Low: using recycled content can reduce emissions, as it requires less energy compared to producing virgin plastic.
Water usage	Low: recycling plastic uses less water than producing virgin plastic but still requires water for washing and processing.
Recycling rate	Moderate: similar to virgin plastic.
Recycled content	Moderate: despite efforts to increase the amount of recycled content, quality and supply limitations may constrain companies.
Chemical impact	Moderate: despite reduced need for virgin materials, the recycling process can still release harmful chemicals, especially if the feedstock is contaminated. Additives and stabilisers used to improve the quality of recycled plastic can also pose chemical risks.
End-of-life impact	High: similar to virgin plastic, recycled plastics can degrade into microplastics and potentially harmful chemicals if not properly managed.
Production cost	Low: cost improvements from lower weight but incorporating recycled content can increase costs due to the need for high-quality feedstock and additional processing to ensure material quality.

Glass bottle	
Weight	Heavy: glass is significantly heavier than plastic, which requires more resources to produce and handle.
Carbon emissions	High: emissions caused by energy-intensive production.
Water usage	Very high: water-intensive, primarily due to the cooling processes and cleaning of raw materials.
Recycling rate	High: glass can be recycled indefinitely without losing quality. Some countries achieve very high rates due to effective deposit return schemes.
Recycled content	High: glass can have a very high percentage of recycled content, particularly in regions with effective glass recycling systems.
Chemical impact	Low: the raw materials (sand, soda ash and limestone) are generally non-toxic, though some emissions, like NOx and SOx, can occur during production.
End-of-life impact	Low: glass does not degrade into harmful chemicals and is inert, meaning it does not leach toxins into the environment.
Production cost	High: glass production is energy-intensive; the raw materials are inexpensive, but the energy required for melting and forming glass is significant.

Aluminium bottle	
Weight	Light: relatively lightweight, although not as light as plastic in some applications, but its recyclability helps balance its environmental impact.
Carbon emissions	High: aluminium production is highly energy-intensive, but recycling significantly reduces emissions compared to primary production.
Water usage	Moderate: production, especially from bauxite (the raw material) is water-intensive, particularly during the refining and cooling processes.
Recycling rate	High: aluminium retains its properties well and requires significantly less energy to recycle than to produce new. High recycling rates are often driven by economic incentives.
Recycled content	Moderate: many products contain significant amounts of recycled aluminium, driven by the material’s excellent recycling properties and the economic incentives to recycle aluminium.
Chemical impact	Moderate: the production of aluminium, especially from bauxite, involves the use of chemicals that can lead to toxic byproducts like red mud, which can contaminate water sources.
End-of-life impact	Low: aluminium is highly recyclable, and the recycling process has a lower chemical impact than primary production; emissions of toxic substances can still occur if not properly controlled.
Production cost	High: aluminium production is expensive due to energy-intensive processes like bauxite mining and smelting; once produced, aluminium can be recycled with significant energy savings

Multi-material carton	
Weight	Light: multi-material cartons are designed to be lightweight.
Carbon emissions	Low: cartons, often a mix of paper and a small amount of plastic or aluminium, tend to have lower emissions due to the lower energy requirements and weight efficiency.
Water usage	Low: production involves paperboard, plastic layers, and sometimes aluminium, all of which require water.
Recycling rate	Low: recycling is complex, the process requires separating the layers of paper, plastic, and aluminium, which not all recycling facilities can do.
Recycled content	Low: incorporating recycled materials into the layered structure is complex, the paperboard component may include some recycled fibres, but the plastic and aluminium layers typically do not.
Chemical impact	Moderate: multi-material cartons require adhesives and coatings. The production process can involve chemical treatments, including bleaches and inks, which can be harmful.
End-of-life impact	High: separation of the layers is challenging, leading to potential contamination if they are incinerated or landfilled.
Production cost	Low: the combination of materials and the complex manufacturing process make production more expensive, but economies of scale can mitigate some of these costs.

Paper wrap for soap bar	
Weight	Low: paper used for wrapping a soap bar is significantly lighter than other materials.
Carbon emissions	Low: emissions are lower than those for other materials, especially when considering the low amount of material needed.
Water usage	High: pulp and paper manufacturing processes can be water-intensive.
Recycling rate	High: biodegradable paper typically has a high recycling rate due to its dual recyclability and compostability.
Recycled content	High: paper products often include a significant amount of recycled content, especially if sourced responsibly, but might not reach the levels seen in aluminium or glass.
Chemical impact	Low: production can involve chemicals such as bleaches and dyes, which can have environmental impacts if not managed properly.
End-of-life impact	Low: can be decomposed naturally without causing environmental harm. Improper disposal can lead to landfill waste.
Production cost	Moderate: initial investment cost needed to reach economies of scale, but generally low.

Using these broadly-defined criteria it is then possible to score the criteria against a consistent framework.

The following scoring framework was developed:

Scoring criteria – each out of ten:

- Lower GHG emissions score higher
- Lower water usage scores higher
- Higher recycling rate and recycled content scores higher
- Lower chemical impact scores higher
- Lower end-of-life impact scores higher
- Lower production cost scores higher

Packaging material	Virgin plastic (PET or HDPE)	Recycled content plastic	Glass	Aluminium	Multi-material carton	Compostable paper wrap for soap bar
Weight	7	8	1	8	8	10
Carbon emissions	6	8	4	3	9	9
Water usage	7	8	3	5	9	1
Recycling rate	6	6	8	9	3	9
Recycled content	1	7	8	7	2	8
Chemical impact	3	5	8	6	5	9
End-of-life impact	2	3	9	8	3	9
Production cost	7	8	2	3	9	6
Average score	4.9	6.6	5.4	6.1	6.0	7.6

Material matters: sustainability insights inform decision-making

Thanks to the comprehensive assessment of the nature-and-climate impact of packaging materials, Haven was able to determine the materials to concentrate its R&D efforts on early in the transformation process. This allowed Haven to focus resources on packaging materials that met its sustainability criteria and performed best on the balance sheet over the short and long term; these decisions simultaneously reduced the company’s vulnerability to physical risks emerging from increasing water shortages. Quantifying climate-and-nature-related risks and opportunities met regulatory requirements and underpinned Haven’s transition plan.

The results supported Haven’s decision to replace virgin plastic with recycled plastic. The insights also informed the introduction of refillable aluminium bottles; the recycling and refillable attributes will benefit the business further down the line when regulatory requirements are expected to increase. The outstanding properties of paper wrappers motivated Haven’s long-term effort to develop a soap bar that, while requiring behaviour change from consumers, demonstrates that sustainability can be synonymous with profitability.

Moving markets: preparing for competitive advantage

Decarbonising an organisation’s transition plan will help a business to adapt to changes in demand driven by increasing global regulation that requires organisations to quantify their climate-and-nature-related risks and opportunities. Positioning a business strategy towards sustainability has potential to build long-term brand value and competitive advantage as demand trends change and consumers flex their purchasing power more mindfully.

Climate and nature come with a series of complex interdependencies which is why a shared view of sustainability makes good business sense. Data are key to developing the necessary insights required for a holistic view of an organisation’s entire value chain. Actionable information is critical to defining end goals and underpins the company’s business transition to a net-zero and nature-positive future at every stage.

Adopting the appropriate platform technology, tools and frameworks early in the process of business transition will deliver Sustainability Intelligence that leads to better-informed strategic decision-making aligned to company vision, targets and goals.



The background of the entire page is a dark, industrial scene. In the lower-left quadrant, there is a bright, glowing orange and yellow molten metal being poured or processed within a complex metal structure. The rest of the image is dark, with various mechanical parts, pipes, and structural elements visible in silhouette or low light, creating a sense of a busy manufacturing or processing environment.

Transition Risk Series

MARKET TRENDS

Sustainability as business opportunity in food and beverage

At Risilience, our mission is to help global businesses transition to the net-positive economy. Our award-winning platform and advisory services drive actionable Sustainability Intelligence, connecting climate and nature, to deliver better disclosures, better risk insights and better transition strategy.

Our technology enables you to quantify the financial impact of climate-and-nature-related risks and opportunities to make better business decisions that lead to better business outcomes.

We developed our environmental frameworks in partnership with the University of Cambridge Centre for Risk Studies to enable you to deliver credible and rigorous sustainability disclosures, and transition plans, on your journey to net positive.

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