



Executive Insights

Sustainable Consumer Packaging: Critical Factors for Adapting to an Evolving Market

Sustainability is a priority item on the CEO agenda across industries and regions, driven by consumer focus on a broad spectrum of environmental issues ranging from climate change to ocean waste. Plastic packaging is particularly prominent given its role in everyday life, and despite a brief period when COVID-19-related concerns placed hygiene ahead of the environment, the demand for alternatives in Europe lost no momentum in 2020.

This *Executive Insights* examines the use of plastics in packaging, highlights some of the initiatives targeted at switching to alternative materials and looks at how participants in the plastics value chain could approach the fundamental challenges facing their industry.

Plastic is a major global source of pollution

By 2050, global plastic production is estimated to reach 1,124 million tonnes (multiple: 3.6x; CAGR 2014-50: 3.6%).

Estimates¹ suggest that plastic production made up c.6% of 2014 global oil consumption and is on track to reach c.20% by 2050.

At the same time, plastic production accounted for c.1% of the global carbon footprint and, if things continue at the current pace, it will account for c.15% by 2050.

As economies shift from a 'linear economy model' (with disposal at the product use end) to a 'circular economy model' (with reuse or recycling at the product use end), governments, corporations and consumers are focusing on the recyclability of packaging materials. In this regard, plastic is one of the greatest offenders, as many packaging elements (e.g. soft plastics, multilayer plastics) are not recyclable. Furthermore, ineffective plastic collection processes and inefficiencies in recycling technologies lead to further losses in plastic recycling.

According to the Ellen MacArthur Foundation¹, in 2013, 14% of total global plastic production was collected for recycling and only 2% was converted into the same or similar quality application. The nonrecycled plastic mostly ended up in landfills (40%), was incinerated or used for energy recovery (14%) or was leaked into oceans (32%) (see Figure 1).

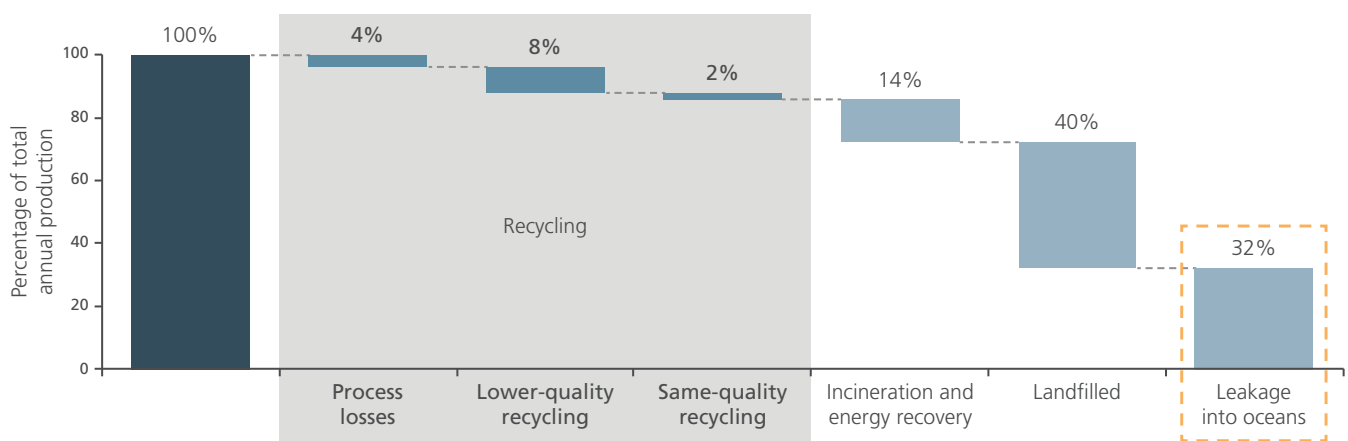
However, global figures obscure stark differences among the different regions of the world. The EU27 average lies at 40%, markedly above the global average for recycling rates, while top-performing countries have plastic recycling rates above 40%: Czech Republic (c.52%), Germany (c.50%), Slovenia and Sweden (c.47%), Ireland and Estonia (c.46%), and the Netherlands (c.45%).

Sustainable Consumer Packaging: Critical Factors for Adapting to an Evolving Market was written by **Karin von Kienlin**, **Jeremy Wheatland**, **David Danon-Boileau** and **Michael Ringleb**, Partners at L.E.K. Consulting. Karin and Michael are based in Munich, Jeremy is based in London, and David is based in Paris. We thank **Anca Ioan**, Consultant in L.E.K.'s Munich office, for her valuable contributions to this *Executive Insights*.

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Figure 1
Global flows of plastic packaging materials (2013)



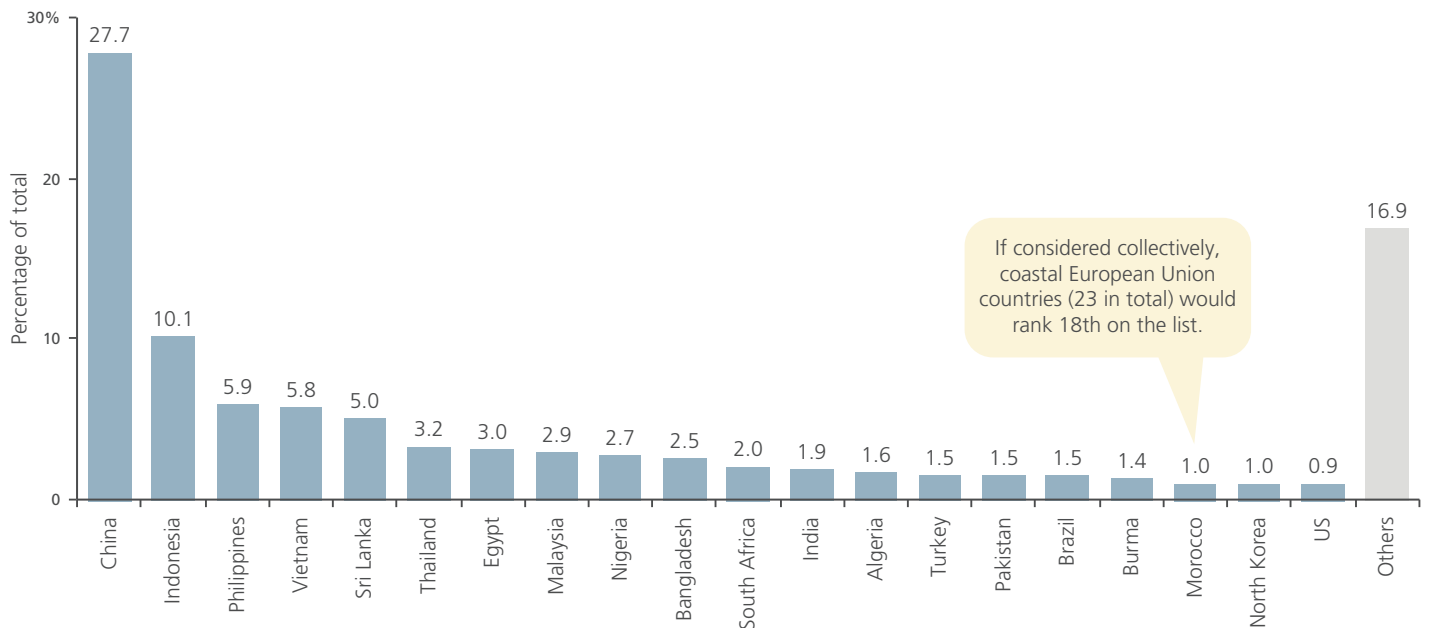
Source: Ellen MacArthur Foundation

Contribution to plastic leakage into oceans also varies greatly; according to the most reliable available data², the US and Europe account for only 2% of leakage, while Asian countries are collectively responsible for a staggering 80% of leakage (see Figure 2). These results are consistent with another study³, published by the Delft-based foundation The Ocean Cleanup, which in 2017 estimated that two-thirds of all global plastic

emissions come from 20 rivers, with 86% of global input coming from rivers located on the Asian continent.

The United Nations Environment Programme estimated the damage to waterways caused by plastics in 2014 at USD 13 billion annually; the Asia-Pacific Economic Cooperation estimated the cost associated with plastic leakage for the tourism, shipping

Figure 2
Estimated share of mismanaged plastic waste entering oceans (2015)



Source: Science, February 2015

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and fishing industries at USD 1.3 billion in the region⁴. Even in Europe, where plastic leakage is limited, cleaning beaches and coasts could cost EUR 630 million per annum⁵. Furthermore, as plastic disrupts marine ecosystems, it threatens the food security of people who depend on subsistence fishing.

Public opinion drives sustainability action

These trends are worrying to many. There are numerous examples of consumer backlash against what is increasingly perceived as environmentally irresponsible packaging. Ever since the Blue Planet BBC documentary showed how millions of tonnes of plastic in oceans were killing sea life, there has been a rise in consumer awareness of this issue. In particular, products perceived to unnecessarily use plastic have come under attack, including plastic straws, cutlery, bags, and the shape and format of multiple packaging layers that allow for faster, cheaper and safer product supply.

The issue's political power has not gone unnoticed and, consequently, political bodies and NGOs worldwide have stepped up their involvement and have publicly announced measures for the next 10 years. These include banning plastic for specific uses, making its use less attractive by taxing it, making recycling or reuse mandatory, and incentivising substitution with other materials (see Figure 3).

Europe has been at the forefront of attempts to limit plastic use and waste. Committing to act at a global level through G7 and G20, and through the implementation of the UN Sustainable Development Goals⁶, the European Parliament endorsed in October 2018 an initiative to tackle marine litter at its source, targeting 11 plastic product categories⁷ that constitute 70% of marine litter. It is also pushing ahead with the creation of a market for recycled plastic, aiming for 10 billion tonnes to be traded by 2025. So far, the supply side appears covered by plastic recyclers, industry associations for expanded polystyrene and brand owners, mainly for PET packaging. However, the demand side currently covers only c.6.4 million tonnes⁸, indicating that more needs to be done in order to reach this goal.

Defining sustainable packaging

Sustainable packaging must be about more than the packaging materials alone: the whole life cycle of product use has to be taken into account (see Figure 4).

Sustainable packaging will require the involvement of all stakeholders along the supply chain (i.e. government, businesses and consumers) in order to reduce the use of materials and energy, and to reduce the carbon and water footprint.

Figure 3
Measures announced to improve sustainability of plastics

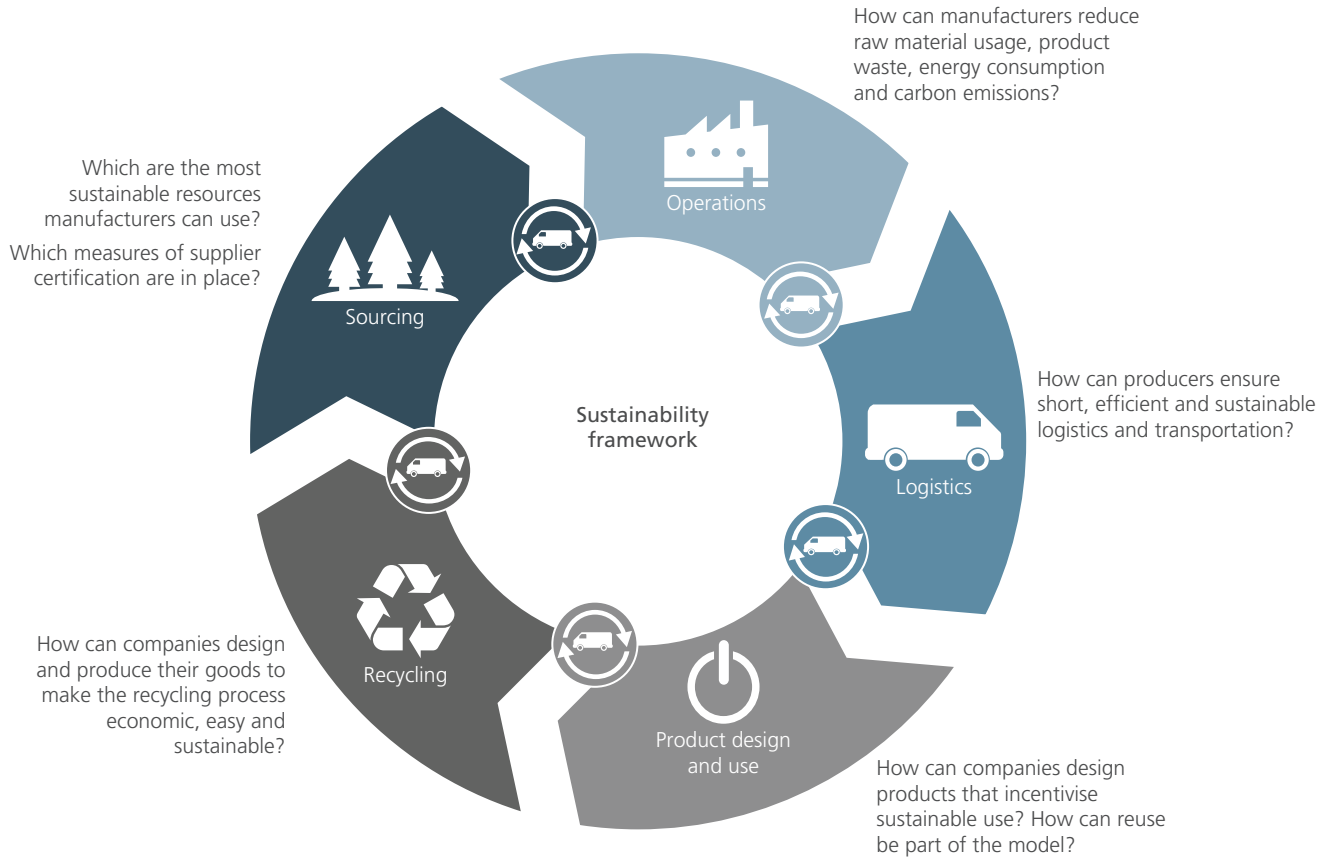
Public body	Announced measures
European Commission	Create EU market for waste plastic Make all such packaging in the bloc recyclable by 2030 Circular economy initiatives
Finland and Italy	Introduced in 2017 national circular economy policy road maps
France	Unveiled in 2017 a new climate action plan with circular economy as a central pillar
The Netherlands	Has moved towards concrete action plans on its 'NL Circular 2050' programme
Break Free From Plastic	Peak plastic packaging by 2050 Eliminate non-essential usage by 2035
United Nations	By 2030, achieve the sustainable management and efficient use of natural resources
UK Parliament Environmental Audit Committee	Implemented a charge on carrier bags and is considering doubling the charge Proposed a 'late levy' on coffee cups to be implemented by 2023 Banned microbeads
US EPA	Banned microbeads
China	Expanded in 2017 the Extended Producer Responsibility plan, which sets targets for recycling 50% of select waste categories by 2025, including batteries and electronics Released the Circular Development Leading Action Plan, laying out an overarching framework for circular development Starting with January 2018, enacted a ban on imports of 24 grades of solid waste, including waste plastics, unsorted paper and textiles
Ellen MacArthur Foundation	By 2025, 22 companies, including PepsiCo, Coca-Cola and Unilever, plan to make all plastic containers either reusable, recyclable or compostable

A number of promising developments are underway to reduce plastics consumption and drive sustainability across all aspects of the product packaging life cycle (see Figure 5).

Considerations for investors and corporates

The circular economy provides a USD 4.5 trillion opportunity⁹ by 2030 through better waste management, increased business efficiency and new employment opportunities. According to the Ellen MacArthur Foundation, reusable packaging is a USD 10 billion opportunity¹⁰. Apart from monetary rewards, being socially and environmentally responsible can give companies a competitive edge in the war for talent: according to a recent survey conducted by Nuveen¹¹, over 90% of millennials and 70%

Figure 4
Product packaging life cycle



Source: L.E.K. research and analysis

of non-millennials would prefer to work for a company with a positive social and environmental impact on the world.

For investors, there are a number of critical factors to consider when assessing opportunities in sustainable packaging:

1. Business models with multiple demand drivers:

Businesses that depend on a regulatory framework to create their market risk pricing and profitability declining over time. Examples include battery return systems and plastic waste licensing schemes.

2. Address brand owners' and consumers' key purchasing requirements:

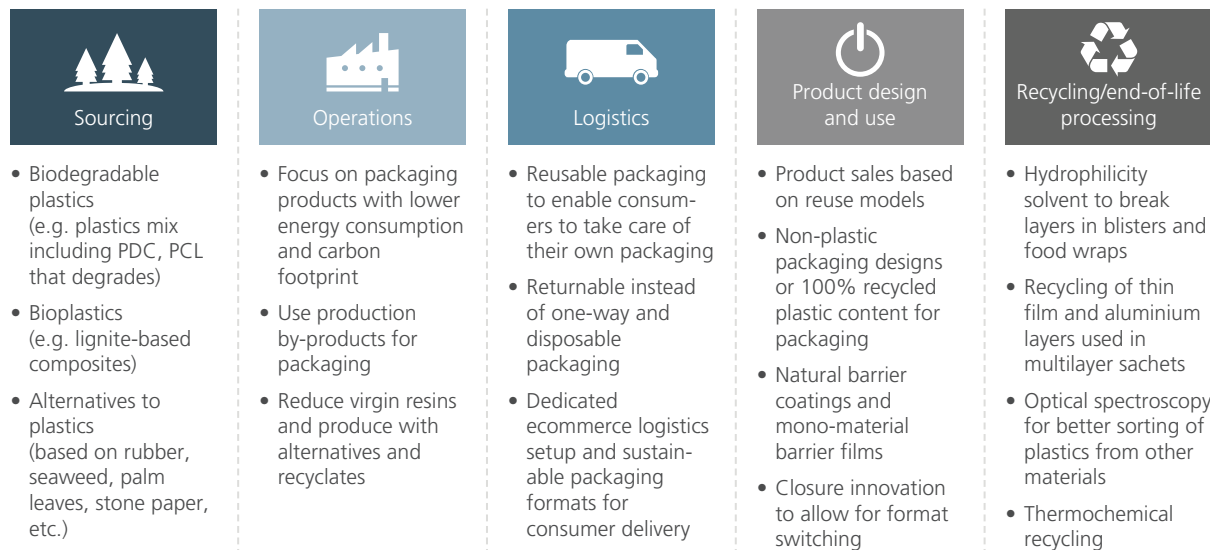
Sustainability is important, and so are affordable pricing, consistency and quality of supply, and convenience. Products that do not address these requirements are unlikely to grow beyond minority interest groups and niche brands. Those that deliver a similar value proposition to conventional plastic packaging but don't create the same end-of-life challenge will very likely

benefit from the underlying growth in packaging and from substantial share gains versus conventional, multilayer plastic. There is some evidence that sustainable packaging may justify a price premium on the packaging product that was inconceivable even two years ago.

3. Deliver on the sustainability promise: Some sustainable packaging solutions may sound good, but on closer inspection they do not live up to their promise. Film-laminated papers in food are an example; consumers will pick up on the actual recyclability, carbon footprint, etc., and demand is likely to be short lived if sustainability is not delivered.

4. Plastics will be around for some time: For many mass applications, especially in segments where hygiene, shelf life and presentation matter, plastic is and will continue to be the packaging material of choice for some time. Targets with leading positions in traditional plastic packaging can still achieve sizeable and profitable growth through

Figure 5
Sustainability initiatives across the product packaging life cycle



Source: L.E.K. research and analysis

commercial excellence along the value chain, especially if they are participating in initiatives to come up with the next generation of sustainable materials.

5. Some packaging sectors are less affected by sustainability trends and therefore have more predictable demand profiles: Healthcare devices and pharma products packaging, for example, remain reliant on virgin resins, and given the criticality of the applications in medicine, current product ranges are under less pressure to look for more environmentally sustainable alternatives.

For corporates, the sustainability agenda depends on where they stand in the packaging value chain, how sizeable and international they are, to what extent their products are B2B versus B2C, and how much of their range would already be consistent with sustainability goals across the product life cycle (within sourcing, operations, logistics, product design and use, and recycling/end-of-life processing).

Successful companies have several characteristics in common:

- They set clear and ambitious yet credible goals and hold their leadership accountable
- They collaborate closely with their customers in developing products that satisfy sustainability requirements while keeping other key requirements (such as product protection, presentation, price and consistent availability) in mind

- Sometimes they crowdsource ideas for sustainable packaging designs or collaborate with external R&D institutions for more groundbreaking innovation
- They support their customers by consistently and clearly communicating all the efforts and achievements on their sustainability agenda that support the ESG position of brand owners relative to the consumer; this starts with clearer labelling to inform consumer choice
- They subject their supply chain and operations to sustainability audits with the goal of reducing energy consumption, reducing carbon footprint and identifying other areas of improvement
- They may have dedicated organisations focused on the sustainability agenda that provide central coordination of internal efforts and collaboration with external organisations in the sustainability ecosystem
- They may contribute to industry associations and/or take a more proactive stance in politics to support cross-stakeholder agendas that help the cause

The drive for sustainability offers a wealth of opportunity for both investors and packaging companies. To unlock those opportunities, the evolving demands of the various stakeholders need to be closely observed to place the right bets and back the best-positioned players. As in any disruptive environment,

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the price for higher growth and return potential is higher uncertainty and risk, but corporates and investors that focused on sustainability early have a good opportunity to exceed the relatively slow underlying market growth in many packaging markets.

¹Project Mainstream analysis, Ellen MacArthur Foundation, 2013

²"Plastic waste inputs from land into ocean", J.R. Jambeck et al., *Science*, 13 February 2015

³"First estimate to quantify global plastic input from rivers into oceans", *The Ocean Cleanup*, 7 June 2017

⁴"Valuing Plastic: The Business Case for Measuring, Managing, and Disclosing Plastic Use in the Consumer Goods Industry", United Nations Environment Programme, 2014

⁵"Our Oceans, Seas and Coasts: 10: Marine Litter", European Commission, Directorate General for Environment, 10 December 2015

⁶Particularly SDG14, "Conserve and sustainably use the oceans, seas and marine resources for sustainable development", and SDG 12, "Responsible Consumption and Production"

⁷Plastic food containers; cups for beverages; cutlery, plates, stirrers and straws; sticks for balloons and balloons; packets and wrappers; beverage containers and their caps and lids; tobacco product filters; wet wipes and sanitary towels; lightweight plastic carrier bags; fishing gear

⁸European Strategy for Plastic — voluntary pledges, European Commission, 4 May 2019

⁹"Waste to Wealth", Accenture Strategy, 2015

¹⁰Ellen MacArthur Foundation: Reuse — Rethinking packaging, 2019

¹¹"Millennials are leading an investment revolution — here's what makes their generation different", *Business Insider*, 29 May 2018

About the Authors



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