EVALUESERVE

Industry Insight - Circular Economy

Rethinking **plastic packaging** for a carbon neutral **CPG industry**

Plastic has been an efficient material in the sales, transport protection, and modularity of consumer packaged goods (CPG). CPG companies are among the top plastic consumers and will hence be instrumental in reversing the material's impact on the environment and, subsequently, the climate. Most major CPG players and governments have woken up to this fact in recent years and have implemented various near- and long-term sustainability targets, aiming for decarbonisation of the plastic waste value chain.

Only a small percentage of the total plastic packaging produced globally currently gets reused or recycled, and the majority ends up as waste in landfills or leaking into the environment, including water bodies. To remedy this, packaging-specific targets have been introduced at multiple levels.

Various measures and innovations including eliminating single-use plastics, using different polymers and materials, new business models like returnable or reusable packaging, better waste management policies and many others are being considered. We take a look at how the post-consumer waste value chain can evolve to contribute to a carbon-neutral circular economy and the opportunities it presents.

Introduction

Plastic waste at a glance

98% of the feedstock is virgin plastic

40% of produced plastic goes to landfills

32% leaks into the environment including water bodies

$80 - 120 billion of yield loss from non-recycling in Europe

1,124 million tonnes of plastics to be produced by 2050 at current growth rate

78 million tonnes (MT) annual production of plastic packaging (EU, 2018)

1:1 projected proportion of fish to plastic in the ocean by 2050 at current rate

14% incinerated or used in energy recovery

14% collected for recycling

8% goes into cascaded recycling

2% enters closed-loop recycling

20X rise in total plastics production from 15 MT in 1964 to 311 MT in 2014

CPG recycling overview

Source: Ellen Macarthur Foundation, WEF, McKinsey & Co.

Types of plastic

Identity crisis: All types of plastics are not recyclable. Out of the seven resin identification codes (RICs) above, imprinted on each piece of plastic to identify its resin type, only two are usually recyclable - PET and HDPE.

Wish-cycling: Thanks to the earlier integration of the recycling logo around the RICs, the majority (68% according to a 2019 US study) of users still assume that all seven plastic types are recyclable. This has led to a wasteful issue termed wish-cycling, where even non-recyclable plastics are clubbed with recyclable types during waste collection, making the process of actual recycling that much more difficult at the sorting and materials recovery facilities (MRFs) stage. This adds to the process time, cost, and contamination, while impacting efficiency.

Endless recycling? Owing to these and other inefficiencies, recycled plastic has a lower quality and higher cost compared to its virgin plastic alternative. To top it off, plastic can only be recycled upto three times, and even then, it will need to be mixed with virgin plastic to offset quality degradation.

With greater exposure to the extent of plastic pollution and its impacts, various governments as well as CPG companies and industry bodies have not only set forth policy but also outlined targets for themselves and those functioning within the plastic packaging and recycling value chain. In recent years, signatories including top CPG players have announced their targets for the coming decades, to move towards a circular economy and reducing as much single-use plastic as possible.

EPR: Extended producer responsibility (EPR) is a strategic piece of policy wherein the producers of the plastic packaging are made responsible for treatment and disposal of post-consumer plastic. The EPR, the aim is to align on a framework to support improvement and development of waste management systems worldwide, recycling innovations, and piloting new programmes to increase recycling rates.

Design rules: Global CPG companies have formed a coalition to arrive at common packaging design guidelines to remove materials and design which have led to wasteful packaging. These Golden Design Rules focus on increasing the value of PET bottle recycling, HDPE and PP, while eliminating unnecessary packaging and problematic elements including PVC, carbon black, and EPS. Accounting for over 10% of the global plastic packaging market, the coalition has committed to implement these rules wherever possible by 2025.

How are CPG players and policy going circular?

Global commitment: A major coalition of close to 1,000 CPG signatories, representing nearly 20% of the world's plastic production has agreed on the Global Commitment towards a circular economy for plastic packaging. Already in its third year, the companies have been able to reduce their overall virgin plastic consumption by 1.2% and assured its consumption has peaked with steeper declines projected for coming years. They target a reduction of total or virgin plastic of about 19% between 2018 and 2025.

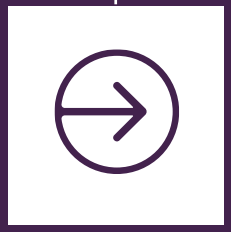
PCR content: Signatories to the global commitment have also increased the share of Post-Consumer Recycled (PCR) content in their plastic packaging by 60%, especially in the rigid PET packaging space. Recycling is currently contributing about 80% of their 2025 virgin plastic reduction targets. The increased recycling mandates and reduced virgin plastic consumption will help reduce around 8 million tonnes of virgin plastic consumption annually by 2025, and subsequently cut oil consumption by 40 million barrels.

Plastics policy: In 2022, governments of close to 100 countries have agreed to and expressed support for starting negotiations on a global plastics policy. This could include a uniform EPR that can address the issues of waste management, collection of plastic waste, as well as sorting by incentivising it to garner interest from more companies. So far, the move towards a circular economy for plastic has been a voluntary one.

UN-backed treaty: Involving the United Nations Environment Programme (UNEP) to formulate a central authority and guidelines for such a policy framework is also currently being discussed. A unified and global UN treaty on plastics is expected by 2024 which could, as in other sectors, serve as the backbone for policies at the local level.

Moving forward:

- **Accountability** will be a key factor for policymakers, CPG players as well as consumers becoming more responsible in their use of plastics. It is only when the producer, policy and consumer agree on a **more conscious approach to plastic consumption** and its impact towards the climate will we notice a major shift in consumption patterns.
- **Packaging design** is a focus area for the future. It can be argued that without wasteful packaging to begin with, a lot of the current situation would have been avoided. Whether moving from single-use to compostable and recyclable materials, or the economical use of packaging design, a lot of efficiencies can be derived here. In addition, waste producers like consumer goods will have to integrate across the post-consumer value-chain to double the push.
- We **cannot recycle away our plastic pollution** woes. Reusable packaging, incentivised packaging return policies such as a deposit return scheme (DRS) wherein users back get a small amount of the product's price upon returning the packaging, and other programmes encouraging the elimination of single-use plastic packaging will bear great fruits towards the circular economy.
- **Effective waste management** systems, as well as an overall **systemic approach** will also play a significant role. Uniform waste collection, sorting and recovery methods and policies can have a positive impact on the circular economy goals by making efficient a so far crude and largely unorganised space in most geographies.



What next?

- Stopping **ocean-bound plastic (OBP)** from ever reaching the ocean and leaking into the environment needs to be made a strong pursuit. The great Pacific Garbage Patch is no myth. And more such plastic waste hotspots could show up on the global map if programmes to effectively curb plastic leakage into water bodies is not introduced. Remember, plastic depending on its type can take upto 400 years to decompose.
- **Advanced alternative materials** such as microalgae-based bio-foam are being developed that can used as a substitute for plastic foam. Such materials can serve their purpose and take about 6 months to be composted upon expiry with no negative impacts.
- Other new materials including **Mycelium-based packaging**, which is biodegradable, as well as **seaweed based edible packaging** are some interesting developments in the space and need to be pursued further.
- There is also need for a major push to find ways to effectively break down the existing plastics that cannot be recycled or reused. And natural evolution as well as scientific advancement are working in tandem in this direction. Only recently have researchers discovered **bacterial enzymes that can break down** certain types of plastics.
- Most importantly, there is major **need for sustainability** to be brought to the fore as a core personal, and industrial responsibility.

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