ELLEN MACARTHUR FOUNDATION

CIRCULAR ECONOMY GROWTH POTENTIAL BY SECTOR

Plastics and packaged goods

Introduction

The circular economy is built on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature. A circular economy gives us the tools to tackle climate change and biodiversity loss together. It can scale fast across industry to create value and jobs, while increasing the resilience of supply chains and delivering massive economic growth potential.

Circular economy opportunities can be found in nearly every sector in the global economy. The plastics, fashion, and food sectors stand out as some of the most likely to be significantly impacted or even disrupted by the circular economy in the near term, driven by innovation, regulation, and evolving customer preferences. The electronics, transport, and technology sectors also have high circular economy growth potential.

Moving from a linear to a circular economy is not only about financing perfectly circular companies or turning away from extractive ones. This transformation will require all sectors to shift fast and at scale to achieve climate targets and build a resilient economy.

This document provides a qualitative assessment of circular economy growth potential across plastics and packaged goods.

A full sector-by-sector analysis can be found in our paper Financing the circular economy: capturing the opportunity.

Plastics and packaged goods

Key circular economy strategies

- Eliminate problematic and unnecessary plastics and packaging
- Innovate plastics to be reusable, recyclable or compostable
- Ensure plastics are reused, recycled or composted in practice

Drivers of circular economy growth potential

Innovation and corporate action	
Industry action	• Growing number of plastics commitments by large FMCGs and retailers, e.g. 850+ organisations united behind vision for a circular economy for plastics, the New Plastics Economy Global Commitment signatories represent over 20% of the plastics value chain
Demand for recycled materials	• Global demand for recycled plastic grew by 17% between 2012 and 2016[1] • Increased interest in recycling from plastic producers, evidenced by major M&A activity (e.g. Borealis) • Reusable plastic containers for fresh produce are projected to be one of the fastest growing produce packaging segments in the US[2] (e.g. Amcor's sales of reusable and refillable PET containers in markets where refill programmes exist doubled in the two years up to 2019)[3]
Innovation	• Ongoing innovation across the value chain including reuse models, packaging design to increase recycled content and reusability, recyclability and compostability, development of renewable feedstocks, and chemical recycling

Policies and regulation	
Increasing policies and regulation	• Single-use plastics bans have been announced around the world including in China, India and South East Asia, 34 African countries, various Central American, Latin American and Caribbean countries and cities, several US states and cities, and across the EU (e.g. Single-Use Plastics Directive banning ten single-use plastic products by 2021) • 63 countries had EPR measures in place in 2018 (e.g. Indonesia, Chile),[5] such as product take-back schemes, deposit return systems (e.g. Australia's 'Return and Earn' scheme), and waste collection; the new EU EPR schemes for certain single-use plastic products cover costs of collection, awareness raising, clean-up, and reporting[6] • Increasing landfill taxes, essential requirements for packaging (e.g. recycled content mandates for beverage containers in California) • National recycling targets (e.g. EU target 22.5% for plastic)
Incentives	• Circular economy regulation, including new EU circular economy Action Plan, EU Packaging and Packaging Waste Directive • Subsidies and support for innovation (e.g. Smart Sustainable Plastic Packaging)

Customer preferences and macrotrends	
Changing preferences and behaviour	• Increasing customer pressure regarding plastic pollution (e.g. 'BBC *Blue Planet II* effect') • Changing behaviour towards reusable instead of single-use (e.g. reusable cups and water bottles) • 92% of EU citizens approve of action to reduce single-use plastics[4] • Positive customer response to trials of unpackaged food products by major supermarkets (e.g. Waitrose) demonstrates potential for consumers to adapt to reuse models
Climate change and global challenges	• Eliminating unnecessary plastics, and reusing and recycling plastics, can contribute significantly to objectives on climate change (global CO_2 emissions from plastics production and end-of-life processing could be reduced by 56% in a circular scenario by 2050)[7]

Types of circular economy opportunity areas

- Circular design and innovation
- Circular business models
- Reuse, repurpose, and redistribute
- Repair, remanufacture, and refurbish
- Collect, sort, and recycle
- Regenerative and renewable practices and materials
- Enabling digital technologies

Current circular economy opportunity areas

Innovations that eliminate the need for packaging
(e.g. dissolvable/edible packaging, solid shampoo, farm-to-fork)

Business models based on reusable packaging

Collection of plastics
(e.g. connecting informal waste sector to formal waste collection through digital tech)

Identification and sorting technologies
(e.g. digital watermarks)

Renewably sourced materials
(e.g. plastics made from agricultural by-products)

Innovative sorting and recycling technologies
(e.g. chemical, solvent-based, robotic sorting)

Examples: **Large corporates**

Coca-Cola Brazil
has invested USD 400 million in the expansion of their reuse infrastructure (bottle cleaning and refilling facilities)[8]

Nestlé
has committed to invest up to CHF 2 billion (USD 2.9 billion) to shift to food-grade recycled plastics and to innovate packaging solutions

Unilever
has committed to halve its use of virgin plastics by 2025

Borealis
acquired plastics recyclers Ecoplast Kunststoff-Recycling, mtm plastics, and mtm compact to increase recycled plastic production

L'Oréal
has committed EUR 50 million (USD 58.96 million) to fund circular projects, including new business models to tackle plastic pollution

Indorama Ventures
committed USD 1.5 billion to invest in plastics recycling infrastructure

SABIC and BASF
have developed chemical recycling technologies to produce recycled plastic from mixed after-use plastic streams

TC Transcontinental
acquired Enviroplast to vertically integrate plastics recycling in its flexible plastic packaging production

Examples: **Innovators**

Algramo
operates a refill system for detergent and has established multiple corporate partnerships, including with Unilever and Nestlé

Bockatech
has developed technology to produce low cost reusable plastic containers, which are also lightweight and recyclable

Loop
operates an online shopping platform for branded food and cosmetic products in returnable and reusable packaging

MIWA
offers a complete business ecosystem for smart-powered reusable packaging (it has recently partnered with Nestlé)[9]

Já Fui Mandioca
(formerly CBPAK) turns a non-edible starch component of cassava into a compostable packaging material, and has partnered with BASF to produce a protective film to improve durability

RePack
provides a reusable and returnable packaging service for e-commerce

Endnotes

1 KPMG, *The Plastics Recycling Opportunity* (2019)

2 Packaging Europe, *'Increased Demand for Reusable Plastic Containers in the US'* (12th July 2018)

3 Amcor, *2019 GRI Sustainability Report* (2019)

4 Rethink Plastic Alliance, *Reusable Solutions: how governments can help stop single-use plastic pollution* (2019)

5 UN Environment Programme, *Legal Limits on Single-Use Plastics and Microplastics: a global review of national laws and regulations* (2018)

6 EU, *Directive (EU) 2019/904 on the Reduction of the Impact of Certain Plastic Products on the Environment* (2019)

7 Material Economics, *The Circular Economy: the next low-carbon frontier* (2019)

8 Packaging Europe, *'Reuse: a closer look at Coca-Cola Brazil's unique returnable bottle initiative'* (11th February 2020)

9 FastCompany, *'Nestlé has new refill stations to help shoppers ditch single-use packaging'* (10th June 2020)

The Ellen MacArthur Foundation, an international charity, develops and promotes the circular economy in order to tackle some of the biggest challenges of our time, such as climate change, biodiversity loss, waste, and pollution.

We work with our network of private and public sector decision-makers, as well as academia, to build capacity, explore collaborative opportunities, and design and develop circular economy initiatives and solutions.

Increasingly based on renewable energy, a circular economy is driven by design to eliminate waste, circulate products and materials, and regenerate nature, to create resilience and prosperity for business, the environment, and society.

ELLEN MACARTHUR FOUNDATION

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