



# A circular transition for plastics



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Plastics are a growing environmental problem and increasingly a focal point for policy at national and international level. In recent months, the UN has agreed to develop a global treaty on plastics which could include cuts in virgin plastic production, as well as increasing collection and recycling infrastructure. At a national level, in April the UK implemented a plastics tax which will apply charges of £200 a tonne to plastic packaging that contains less than 30% recycled plastic.

Plastic pollution is also increasingly recognised as interdependent with other environmental themes.

For example, the draft text for the upcoming UN COP (Conference of the Parties) on biodiversity includes a goal to “eliminate loss of plastic waste” as part of the 2030 global biodiversity framework. In the context of net-zero goals, NGOs and stakeholders also continue to draw attention to the contribution of plastic production, use, waste and recycling to global greenhouse gas (GHG) emissions.

We expect these drivers will continue to create momentum towards a transition to more circular plastics. This will include: reducing the use of virgin plastics; increasing the use of recycled plastics and alternative materials; creating different product delivery models; and scaling up plastic collection infrastructure and recycling technologies. Following earlier research we undertook on consumer goods and packagers, we expanded our focus to plastic producers and waste companies via a roundtable with fundamental equity and credit analysts to discuss the risks and opportunities of these developments.

## Plastic producers

Most plastics are produced by a handful of global petrochemical companies. The development of the industry has provided benefits to

society via improving food preservation and introducing lightweight products, among other things, but in doing so it has also introduced a reliance on low-cost virgin plastic into everyday life for people around the world through our clothing, cars, electronics and food packaging – with much of this material ultimately destined to become waste.

Plastic producers now find themselves at the early stages of a structural shift that will increase demand for recycled plastic – most notably for single-use packaging, but also for more durable products – as companies such as Renault, LG, Vestas, Inditex, Adidas and many others establish targets for the use of recycled plastic. These are in addition to the regulatory requirements and pledges already made by consumer goods and packaging companies around increasing the use of recycled plastic by 2025.

Taken together, our analysis of corporate targets across sectors suggests that recycled plastic could account for up to 8% of plastics demand by 2025, and up to 15% of global demand by 2030. In this scenario, demand growth for virgin plastic could shift from the GDP+ growth rates previously seen to less than 1.7%. Currently, however, recycled plastic production is not sufficient



to meet this demand, and chemical recycling technologies, which could increase volumes of material, are unlikely to do so before the latter half of this decade, based on capacity announcements made to-date.

In this context, a shift of this scale will require big changes for plastic producers. Companies that will be most resilient to these changes are likely to be those that have well developed circular strategies, as well as other advantages including: lower revenue dependence on non-recyclable plastic; a strategy and related targets for recycled production that is meaningful relative to the company's production volumes; evidence of multiple partnerships and efforts to pilot and scale new technologies, such as chemical recycling, that can enable the company to adapt and nimbly respond to technical or other challenges; the ability to maintain and grow customer relationships through the transition, by working with customers to develop new and possibly higher-value products and forms of packaging; and access to low-cost virgin plastic feedstocks that will remain economically competitive in a scenario of slowing demand growth for virgin plastic.

Our analysis of several plastic producers against these criteria shows a mixed picture, with companies' plans

for increasing recycled production accounting for anywhere between 1% and 22% of their estimated 2030 production. The range and depth of company partnerships in relation to new technologies such as chemical recycling also varies significantly.

## Waste and recycling

This shift to recycled plastic will also present big changes for the waste and recycling sector. The landscape of risks and opportunities across countries is variable given the different degree of recycling infrastructure, public education and collection rates. However, with rapidly growing regulatory changes and demand for recycled plastic, waste companies that are well positioned can reap the benefit of investment in new technologies, including advanced sorting technologies that can increase automation in facilities and recovery rates for materials, capturing the most value from waste plastic. Some waste companies may also benefit where they have opportunities to vertically integrate, increasing the degree of recycling and processing carried out on plastic collections.

To match increased demand, however, the scale of investments required will be vast: including improved collection and processing infrastructure, not just in developed markets with low

recovery rates (for example the US), but in emerging markets with less developed infrastructure. As with plastic producers, a review of companies' capital expenditure plans and future targets for increasing material recovery provides an indication of their plans and positioning for this transition.

## Conclusion

Our analysis concluded with the recognition that there is a need for ongoing monitoring given the rapid developments on this theme. Continued research, collaboration and engagement across the fundamental and responsible investment thematic teams will help us to identify possible winners and losers and to encourage companies to continue to develop their circularity strategies.

### Source

- 1 <https://www.unep.org/news-and-stories/press-release/historic-day-campaign-beat-plastic-pollution-nations-commit-develop>
- 2 Columbia Threadneedle analysis of company disclosures. Plastic volumes by end use derived from Geyer, et al, 2017.

## Food & Materials transition engagement: plastics circularity

Company KBR

Sector & country Industrials, USA

**Why we engaged** To learn more about potential opportunities related to KBR's equity investment and joint venture with Mura, a provider of chemical recycling technology for mixed plastic waste.

**How we engaged** Columbia Threadneedle representatives from fundamental equity and responsible investment research met with KBR's President of Technology.

**What we learnt** Mura's chemical recycling technology uses supercritical water and is done at a lower temperature than traditional pyrolysis, resulting in lower energy intensity while achieving higher yields. This reduces the greenhouse gas emissions associated with chemical recycling. The first facility is being developed in 2022 in the UK, with active discussions with petrochemical companies on potential opportunities to co-locate future plants at their facilities. This would provide recycled feedstocks to existing petrochemical infrastructure, enabling more recycled plastic production.

**Outcome** We evaluated the new joint venture as part of the investment case and are monitoring developments and the possible upside the recycling technology may provide.

## Food & Materials transition engagement: plastics circularity

Company Biffa

Sector & country Industrials, UK

**Why we engaged** We wanted to better understand the competitive positioning of the company's plastic recycling business, and future opportunities.

**How we engaged** We held multiple discussions on strategy and visited a materials recovery facility to see first-hand its processing and recovery technology.

**What we learnt** We better understood the company's vertical integration approach for processing collections and recycled production, the benefits of its technology investments in sorting and materials recovery, and the opportunities and challenges the company faces in the context of the rapidly changing UK regulatory environment related to recycling and recycled content requirements for packagers.

**Outcome** We gained insights on the investment case linked to recycling opportunities.

## Food & Materials transition engagement: plastics circularity

Company Dow Inc.

Sector & country Chemicals, USA

**Why we engaged** Dow has significant revenues from durable and single-use plastic. We wanted to better understand the company's ambition on plastic circularity, and potential challenges in its product line up and approach.

**How we engaged** Multiple meetings with Dow representatives from investor relations, sustainability, climate change and managing counsel departments. Columbia Threadneedle representatives were from equity, credit, responsible investment research and stewardship teams.

**What we learnt** Dow's production of multi-layer, non-recyclable plastic packaging (19% of production) will not be straightforward to transition to recyclable alternatives as per the 2025 recyclability commitments. However, it is working on potential solutions which in the long run may provide higher margin opportunities. Even if full technical recyclability is achieved, however, it estimates the percentage of products actually recycled will be in line with the global average of circa 9%. This will present regulatory risks and costs as more taxes and extended producer responsibility schemes are likely to be brought in. The company did not disagree with Columbia Threadneedle's estimate of future demand for recycled plastic, but pointed to hurdles in growing the stream of waste plastic which can be used as feedstock, which will be a prerequisite to meeting this demand.

**Outcome** We were able to better quantify the company's long-term target for recycled plastic production. We think this will need to be strengthened over time to demonstrate a clearer pathway to circularity. Dialogue will continue, and we will continue to monitor Dow's progress.

Content originally appeared in Responsible Investment Quarterly Q1 2022.

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