

Asset Management

Repositioning to a circular economy

June 2022

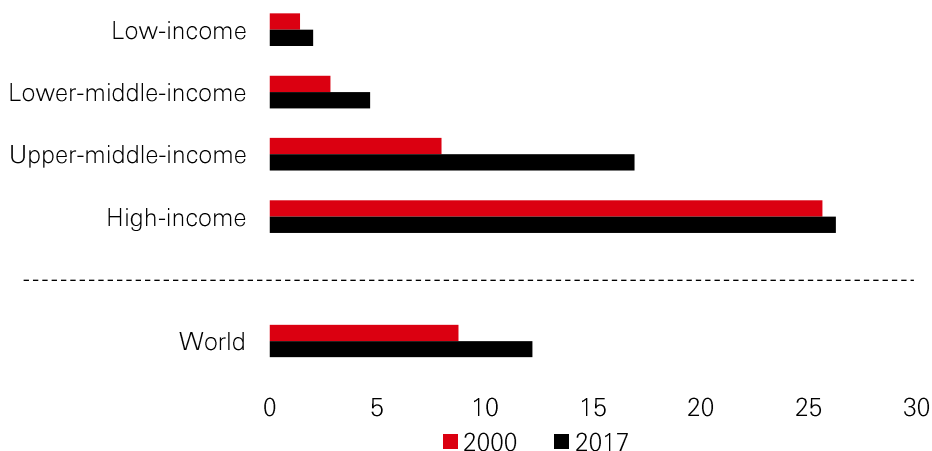
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Key takeaways:

- The global rate of consumption is 80 per cent more than the planet can sustain, and growing
- This is a massive driver of our carbon footprint and strained supply for natural resources
- A circular economy is the solution, and has increasing relevance to business success

With today's stressed supply chains and elevated commodities prices, the chart below is food for thought. It shows that globally, we consume more than 12 metric tons of natural resources per person – an increase of 40 per cent in less than two decades. Cumulatively, that's about 1.8 earths each year, or 80 per cent more resources than the planet can regenerate. High income countries rely on two-fifths of their materials from elsewhere in the world. Yet as can be seen by the doubling in consumption from upper-middle-income countries such as China, demand will continue to grow with the middle classes of Asia and elsewhere. A more circular economy is the only legitimate solution to this growing problem. This means extending the lifecycle of products and reusing materials along the supply chain – both of which should ultimately lower input costs for businesses in the long-run.

Material footprint per capita (metric tons)



Source: United Nations Department of Economic and Social Affairs (2020)

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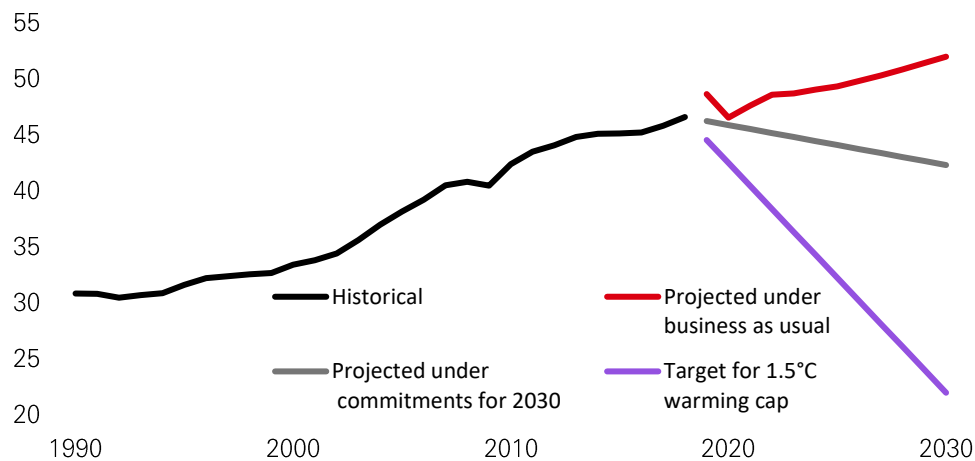
Why a circular economy?

Achieving a more circular economy has far reaching benefits, making it a priority under the UN Sustainable Development Goals (SDG 12). Currently, the global rate of recovered materials as a percentage of materials used, or the rate of circularity, is less than a tenth. Accordingly, 70 per cent of greenhouse gas emissions are directly linked to the extraction, transportation and use of materials. Doubling the circularity rate would reduce our global carbon footprint by a substantial 40 per cent versus current trajectories.¹

While the implications for carbon emissions aren't the only benefit, they are ever important. This is particularly the case with governments rethinking certain efforts to decarbonise their economies amidst an energy supply crunch. As energy prices have risen some governments have resorted to increasing fossil fuel subsidies to compensate, or even worse, firing up coal plants - one of the worst contributors to CO₂ emissions. Increased focus on energy independence should incentivise clean energy investment over the long run, since locally generated renewable energy means less reliance on other countries for supply, but burning dirtier fossil fuels now is only taking us further away from a path to limit global warming to a level that would avoid severe consequences.

“70 per cent of greenhouse gas emissions are directly linked to the extraction, transportation and use of materials.”

Total greenhouse gas emissions (billion metric tons of CO₂ equivalent)



Source: Bloomberg, FactSet, Lipper, Morningstar, Refinitiv, and IMF calculations (October 2021). Any forecast, projection or target where provided is indicative only and not guaranteed in any way. HSBC Asset Management accepts no liability for any failure to meet such forecast, projection or target.

At scale solutions beyond renewable energy are urgently needed to tackle climate change. Transitioning to a more circular economy has as big a potential impact as any and will drive much broader sustainability benefits.

Today, our collective consumption is anything but sustainable, having nearly doubled since 2000.² This eats away at finite resources that will eventually run out, while weakening nature and its ability to replenish. A new study shows that since the turn of the century, three-quarters of the Amazon rainforest's two million square miles have become less resilient to disturbances such as droughts and land-use changes. The loss has been greatest in areas closer to human activities such as logging.³ Researchers warn that once a critical threshold of vulnerability is reached, rainforest will become grassland. Given the role of rainforests in storing carbon, generating moisture and rainfall, and providing habitat for much of the world's species, the consequences cannot be overstated.

Without reversing the growth in our consumption of materials and resources, today's supply chain shortages will pale in comparison to tomorrow's. Developing a more circular global economy lies at the heart of future economic and social prosperity. Importantly for companies and investors, increasing circularity in business models can improve the bottom line in multiple ways.

¹ 2021 Circularity Gap report, Circularity Gap Reporting Initiative

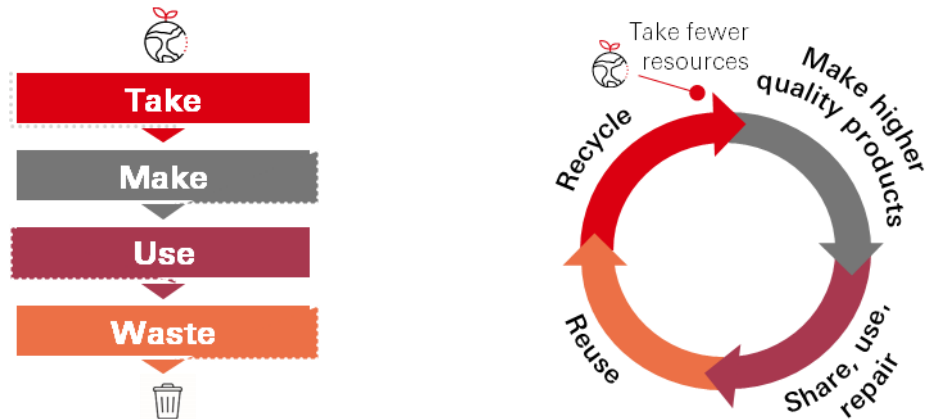
² United Nations, 2020

³ Study by the University of Exeter, the Potsdam Institute for Climate Impact Research (PIK) and Technical University of Munich, published in the Nature Climate Change journal, March 2022

Working towards circularity

As illustrated on the left-hand side below, the global economy currently follows a linear path in which we continuously consume natural resources to produce, use and dispose of goods. Many now realise that a shift to the model on the right is required, particularly given the global population of 6 billion we began the century with is projected to nearly double again by the end of it.⁴

Shift underway in the global economic model



Source: HSBC Asset Management. For illustrative purposes only.

The global pandemic and geopolitical conflicts have helped speed this realization, having laid bare the fragile nature of global supply chains. As demand for goods and the raw materials to produce them have grown in the face of limited supply, their prices have risen drastically - the cost of a broad basket of commodities is around double what it was two years ago⁵.

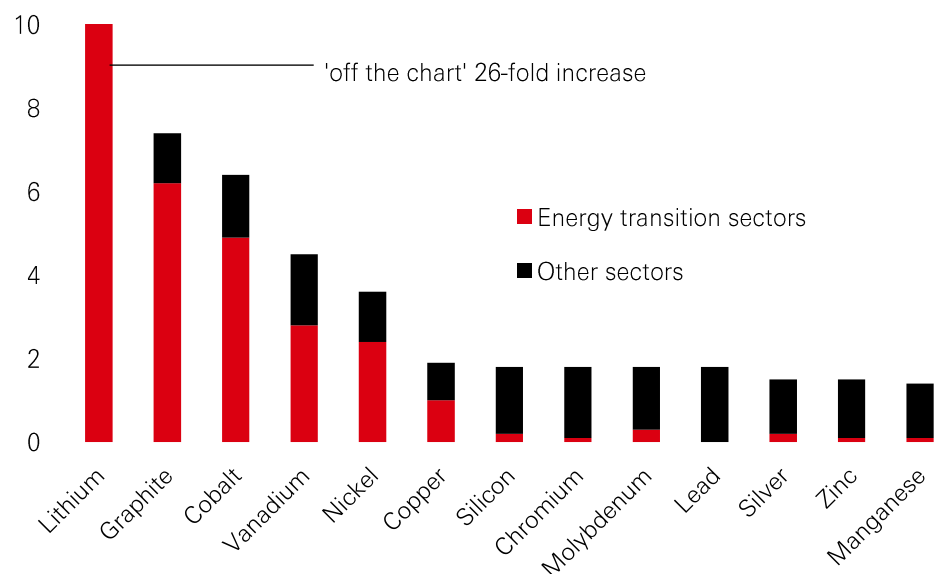
While realignment in today's fractured supply chains will help alleviate some of the current pricing pressures, longer term supply and demand imbalances remain. The solar panel industry, core to the global energy transition, provides an example. Solar panels simply cannot be made without solar-grade polysilicon, for which China accounts for roughly three-quarters of global production. This means countries seeking to increase solar energy production will need to wait in line, offering little respite for the more than doubling in prices for polysilicon over the last year.

Implementing circularity in supply chains and production processes on the other hand, can protect against inflation in raw materials and reduce input costs in the long run. The four million tons of solar panels currently installed account for over 40,000 tons of waste. Over the next few decades, we could reach 60 million tons of solar panels mounted around the world. Recycling those panels as they reach their end of life could provide \$15 billion worth of materials for two billion new panels.⁶ Furthermore, silicon from solar panel waste can be repurposed for lithium-ion batteries, presenting an opportunity to offset initial costs and supply another industry hampered by scarcity of input materials – electric vehicles.

EV leader, Tesla, indicated in its latest earnings call that the company could become directly involved in lithium mining due to spot prices for the vital battery input rising to ten-times the cost of extraction. Again, this pricing pressure is more than a short-term challenge. The chart below shows demand for the metal will be literally off the charts, at 26 times the level of consumption in the 2030s compared with the last decade if net-zero ambitions are to be achieved by 2050. A similar outlook can be seen for other metals and minerals key to the energy transition – an average five-fold increase in demand versus last decade. The impact of such insatiable demand for finite resources whose intended use is to help save the planet is not lost on business leaders. During the same earnings call, Tesla drew attention to its efforts to ramp up recycling of materials in its factories to create a more circular business model less vulnerable to supply stresses.

“Implementing circularity in supply chains can protect against inflation in raw materials and reduce input costs in the long run.”

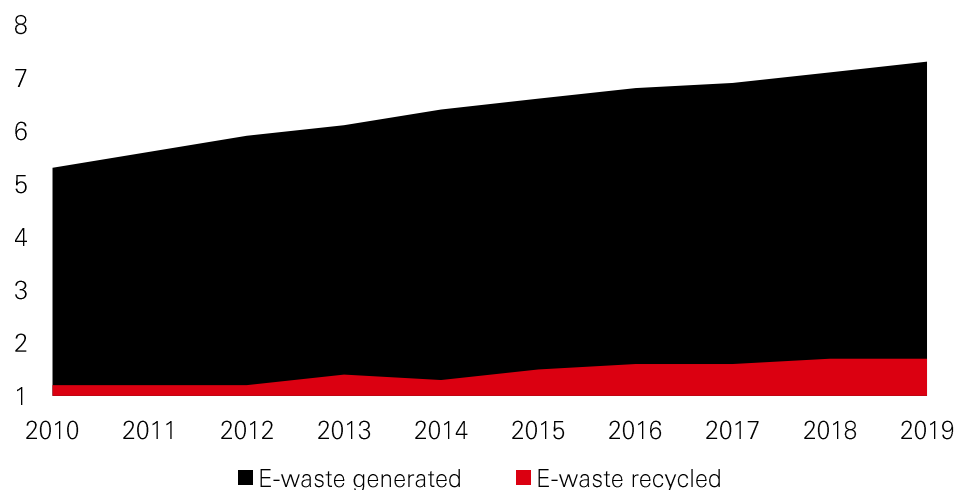
Demand for critical energy transition metals to increase sharply (Ratios, 2030s average consumption relative to 2010s average)



Source: IMF World Economic Outlook (October 2021). Any forecast, projection or target where provided is indicative only and not guaranteed in any way. HSBC Asset Management accepts no liability for any failure to meet such forecast, projection or target.

Of course, consumer behaviour will be vital to developing a circular economy. For instance, the frenetic pace at which smart phones, tablets, televisions and other electronic devices are being replaced today has made e-waste one of the fastest growing contributors to landfills. Those electronic devices require many of the in-demand metals and minerals highlighted above as part of an energy intensive manufacturing process - according to Apple data, over 80 per cent of carbon emissions generated from an iPhone 13 device come from the production process. Yet per the chart below, less than a quarter of electronics are recycled for future use.

E-waste recycling lags growth in waste generated (kilograms per capita)



Source: United nations statistics division (2021)

Progress is emerging, however. A 'right to repair' movement, publicly supported by Apple co-founder, Steve Wozniak, is building momentum in forcing product manufacturers to make it easier to repair goods instead of leaving consumers with little alternative to new replacements. Last year the European Union became one of the first regulatory bodies to

"Recycling solar panels as they reach their end of life could provide \$15 billion worth of materials for two billion new panels."

⁴ Our World in Data/Oxford Martin School, May 2019

⁵ Bloomberg data, May 2022

⁶ Bloomberg Intelligence, November 2021

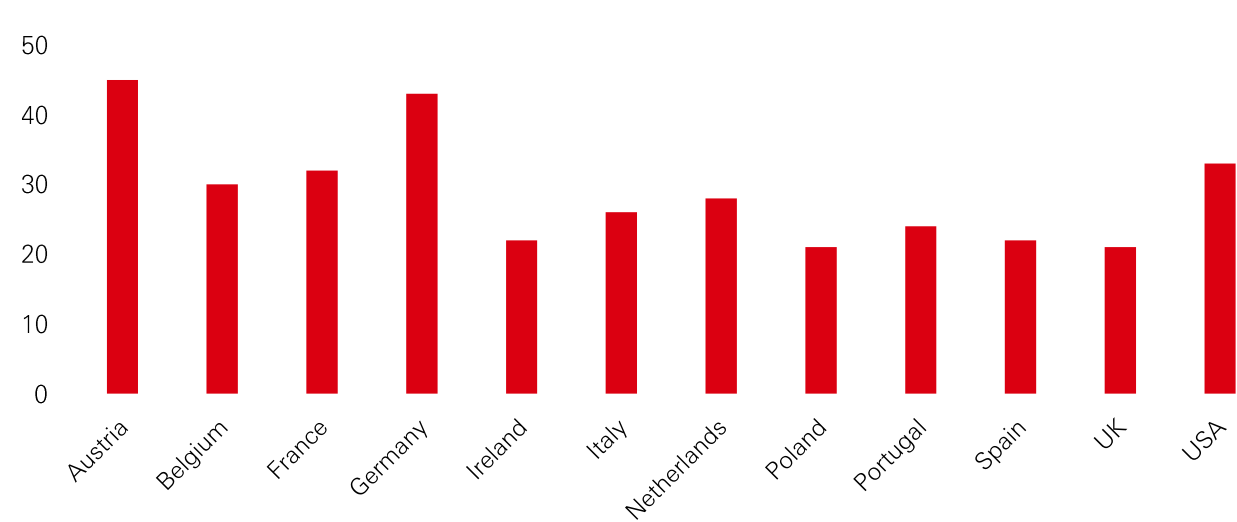
introduce rules requiring electronic goods manufacturers take steps to facilitate repairs, such as making essential parts and repair manuals available.

The EU has taken the lead in championing the transition to a circular economy, implementing supportive policies under its ‘new circular economy action plan’ (CEAP) adopted in 2020. The plan includes various initiatives aimed at changing how products are designed, consumed and disposed of. Last year saw the addition of a plastic tax and new rules on waste shipments, specifically designed to hasten the shift to more circular business models. Later this year will mark the start of formal reporting requirements on circular economy contributions for both companies and relevant investment funds – an important step in driving transparency and investment in circular economy activities. More than just the right thing to do, these actions are grounded in expectations of boosting economic output by driving new business innovation and better business models. A recent study identified potential to increase EU GDP and generate nearly a million new jobs by 2030.⁷

Potentially even more impactful than regulatory support is a shift in consumer preferences. Shoppers today are choosing brands and products with better sustainability credentials, preferring clothing brands for instance, that prioritise durability and recycling of their materials. Nearly 60 per cent of consumers are willing to change their purchasing habits to help reduce negative environmental impacts, with many already turning that willingness into action.⁸

“Nearly 60 per cent of consumers are willing to change their purchasing habits to help reduce negative environmental impacts.”

Percentage no longer shopping/shopping less with retailers on sustainability grounds



Source: Company data, Bloomberg Intelligence (November 2021)

⁷ Cambridge Econometrics, Trinomics, and ICF (2018), Impacts of circular economy policies on the labour market.
⁸ IBM Institute for Business Value, 2021. Research Insights Report – Meet the 2020 consumers driving change.

Investment implications

A combination of regulatory action, sustainability-minded consumers, and innovation in the private sector are planting the seeds of change. Across industries companies are rethinking wasteful business models dependent on an abundance of materials, prices for which have risen dramatically. Companies leading such change are building more efficient businesses, thus improving profitability while often strengthening their brand image and customer loyalty.

Technology has been a facilitator, enabling better engagement with customers across the product life cycle and supporting opportunities for repair and re-use programs. Likewise, resale platforms are quickly growing in popularity, with the fashion resale market for instance, expected to double to nearly \$57 billion in the next three years alone.⁹ Exemplifying the staying power of this shift, an overwhelming four-fifths of those who have purchased pre-owned, repaired, or renewed products plan to continue to do so.¹⁰

Separately, product sharing platforms are challenging the traditional approach of ownership altogether. This can be seen via the emergence of subscription services in many industries, such as fashion, cars or even camping equipment, where traditionally consumers bought and disposed of items, often after limited use. Seventy per cent of Gen Z and Millennials have already tried or want to try renting products instead of purchasing.¹¹

Alongside companies leading change in their industries are those enabling it via the products or technology to support it. Providers of circular packaging and shipping solutions are vital to limiting materials consumption and waste, both for traditional and circular commerce. Similarly necessary and growing are businesses converting waste into energy and new products, along with smart buildings and infrastructure solutions that drive efficiency.

The transition to a circular economy is in its early stages. The historical practice of high-income countries consuming natural resources largely sourced from poorer countries is running out of steam, with simply not enough to go around. Leaders in this transition have much to gain by adopting more sustainable business models that can improve supply chain resiliency along with the bottom line in the long run. Increasingly supportive government policies should only make circular business models even more advantageous.

This means opportunities for investors with an eye on a sustainable future and an understanding of where to look. Investing in solutions to the long-term sustainability challenges we face offers an added benefit for those who want their capital to contribute to improved outcomes beyond investment returns.

“Companies leading change are building more efficient businesses, thus improving profitability while often strengthening their brand image and customer loyalty.”

⁹ McKinsey & Company, The Business of Fashion, 2022 – The State of Fashion 2022

¹⁰ IBM Institute for Business Value, 2020. Research Insights Report – Meet the 2020 consumers driving change

¹¹ IBM Institute for Business Value, 2020. Research Insights Report – Meet the 2020 consumers driving change

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