



Rethinking plastic packaging – towards a more circular economy

We want to move towards a more circular economy, so that more plastic packaging has the best possible opportunity to be reused or recycled.



Plastic packaging: a growing problem

Every minute the equivalent of one rubbish truck of plastic is leaking into streams and rivers, ultimately ending up in the ocean. This has a devastating impact on marine wildlife. An estimated 100 million marine animals die each year due to discarded plastic. And the problem is set to get worse. The Ellen MacArthur Foundation report on the [New Plastics Economy \(PDF | 1MB\)](#) estimated that by 2050, there will be more plastic than fish in the world's oceans.

The root causes of ocean plastic are complex, but it is clear that urgent action is needed on multiple fronts. One area of direct concern for Unilever is the fact that just 14% of the plastic packaging used globally makes its way to recycling plants, a third is left in fragile ecosystems and 40% ends up in landfill.

So, how did we end up here? Cheap, flexible and multipurpose plastic has become the ubiquitous material of today's fast-moving economy. Modern society would be lost without it. The linear 'take-make-dispose' model of consumption means that products get manufactured, bought, used once or twice for the purpose they were made, and then thrown away. Most packaging rarely gets a second use. As a consumer goods company,

we're acutely aware of the causes and consequences of this linear model. And we want to change it.

Moving away from the linear 'take-make-dispose' model of consumption is a key priority in achieving the UN Sustainable Development Goal on Sustainable Consumption and Production (SDG12). From a purely economic perspective, discarding plastic makes zero sense. According to the World Economic Forum, plastic packaging waste represents an \$80–120 billion loss to the global economy every year. A more circular approach is needed, where we not only use less packaging, but design the packaging we do use so it can be reused, recycled or composted.

What is a circular economy?

A circular economy is restorative and regenerative by design. This means that materials constantly flow around a 'closed loop' system, rather than being used once and then discarded. As a result, the value of materials, including plastics, is not lost by being thrown away.

The benefits of the circular economy approach are clear for business and the environment – more effective use of materials means lower costs and less waste. It means new sources of value for customers and consumers, better risk management of raw materials, and improved approaches to the supply chain.

Transforming our use of plastic packaging by 2025

We want to help lead the way towards a circular economy for all our packaging materials – but especially plastic. In January 2017, we committed to ensuring that 100% of our plastic packaging will be designed to be fully reusable, recyclable or compostable by 2025.

To help create an end market for this material, we also committed to increase the recycled plastic content in our packaging to at least 25% by 2025. This plastic packaging target builds on our existing [Unilever Sustainable Living Plan targets](#) of reducing the weight of our packaging by one third by 2020 and halving the waste associated with the disposal of our products by 2020.

We are among a small but growing number of brands, retailers and packaging companies to make plastic packaging commitments. But more needs to be done to make reusable, recyclable and compostable plastic the new normal. That begins by making it technically possible for all our plastic packaging to be reused or recycled – but it also means demonstrating that there are established, proven examples of it being commercially viable for plastics re-processors to recycle the material.

We're embedding circular thinking

No business can create a circular economy for plastic packaging in isolation. A circular economy has to be created. We're working in five broad, interdependent areas to achieve this change:

1. Rethinking how we design our products: using our Design for Recyclability guidelines that we launched in 2014 and revised in 2017, we're exploring areas such as modular packaging, design for disassembly and reassembly, wider use of refills, recycling and using post-consumer recycled materials in innovative ways.
2. Driving systemic change in circular thinking at an industry level: such as through our work with the Ellen MacArthur Foundation and the Global Plastics Protocol.
3. Working with governments to create an environment that enables the creation of a circular economy, including the necessary infrastructure to collect and recycle materials.
4. Working with consumers in areas such as recycling – to ensure they're clear on different disposal methods (eg recycling labels in the US) – and collection facilities (eg Waste Bank in Indonesia).
5. Exploring radical and innovative approaches to circular economy thinking through new business models.

Find out more about how we are taking action in each of these five areas below.

Rethinking how we design our packaging

Sometimes a new design or a whole new way of packaging products is the best way to reduce our impact. We focus our efforts in three areas: reducing our use of materials, using more recycled content and ensuring our packaging is recyclable or compostable.

Reducing our use of materials

While we're continuing to look for ways to develop completely new packaging solutions, we're also focusing on using lighter, stronger and better materials which have a lower environmental impact.

We aim to optimise materials each time we redesign our packaging or develop concentrated or compressed versions of our products. But this can be a challenging process. It can take significant investment and ingenuity to reduce the amount of material in a pack, even by just one gram. However, the return on investment is worth it when our innovations successfully reduce the packaging and waste impact in our value chain, and result in material cost savings and increased sales.

We're collaborating with suppliers, academics, start-ups and other organisations to develop new technologies. This ensures a constant flow of innovative solutions to help us achieve our targets. Recent innovations to optimise our packaging include:

- By combining the technology of a thinner polyethylene layer with a stronger polymer and smart polyethylene design in our Home Care brands' flexible packaging, such as sachets and pouches, we reduced polymer use by 1,400 tonnes in 2017.
- In 2017, we launched our redesigned lighter weight Hellmann's mayonnaise jars, saving 367 tonnes of glass.
- Innovations such as the foamed plastic layer in the middle of plastic bottle walls using MuCell™ Technology – which we developed in collaboration with MuCell and Alpla in 2014 – reduced plastic use by up to 15% per bottle. In 2017, we launched our Dove hand wash bottles with MuCell™ Technology, which has saved 304 tonnes.

- At the end of 2016, we relaunched our Ponds Age Miracle cream in the Philippines, Indonesia and Vietnam, with a redesigned jar and cap. The redesigned packaging saved a combined total of around 84 tonnes of glass, plastic and paper in these three markets in 2017.
- In 2015, we implemented injection compression technology to cut plastic use in some of our food tubs in Europe, saving around 21 tonnes of plastic in 2017 – without impacting the quality of the product packaging.
- In China, as in most countries, the majority of ice cream cartons are laminated to survive freezers temperatures. This means that the cartons have a low recycling rate. So, we worked with an ink supplier and carton converter to develop a matt UV varnish to replace the film. This could cut packaging waste in China by around 300 tonnes per year. Refills also visibly reduce the volume of plastic used in our packaging, and have the added benefit of being more affordable for people. We've been selling refills since 2012. In 2017, we launched refills across our Rexona body wash in Brazil and Dove shampoo in India.

Using more recycled materials in our plastic bottles

We began using recycled materials in our plastic bottles in 2013. In 2017, we committed to increase the recycled plastic content in our packaging to at least 25% by 2025.

In 2017, we used around 4,850 tonnes of post-consumer recycled plastic in our packaging, such as high-density polyethylene (HDPE) and polyethylene terephthalate (PET) in our plastic bottles.

We want to use far more in the future and recapture our own packaging. But factors such as the availability of high-quality waste materials, legislation on food contact and creating a viable business case can all make this challenging.

To address these challenges, we must be both innovative and collaborative. That ranges from ensuring we use recyclable materials at the outset and making them recyclable after use, to tackling wider infrastructural issues such as local collection and sorting facilities, to building the technical and commercial viability of reprocessing them at scale.

Despite these challenges, we've made progress. In 2013, we launched bottles of Knorr salad dressings in South Africa containing 30% of recycled PET (rPET) – this increased to 35% in 2017. In 2014, we launched Cif bottles replacing PET with 40% rPET across Argentina, increasing the content to 50% in 2017.

In 2015, we started using 25% of rPET in the manufacturing of our fabric conditioner bottles in France, Italy, the Netherlands and the UK. And in 2017, we launched more bottles containing rHDPE and rPET, including our Organics range in South Africa, with 50% rHDPE and Caress in the US with 50% rPET.

Ensuring our plastic packaging is recyclable or compostable

In 2017, we made a commitment to ensure that 100% of our plastic packaging will be designed to be fully reusable, recyclable or compostable by 2025. In Chile, for example, we moved from a non-recyclable folding carton across three detergent brands – Omo, Drive and Rinso – to a 100% polyethylene (HDPE) bag which is recyclable, saving 1,634 tonnes a year.

Driving systemic change in circular thinking at an industry level

The movement to a circular economy approach for plastics requires change across more than just our industry. We need more circular thinking as a business and we have to work with others. We're collaborating with the [Ellen MacArthur Foundation](#) and their [New Plastics Economy initiative](#), by committing to publish the full 'palette' of plastics materials that we use in our packaging by 2020.

We are also supporting the creation of a Global Plastics Protocol – a plastics protocol for the industry setting commonly agreed definitions and industry standards on what materials are put into the marketplace, to ensure our packaging is compatible with existing and cost-effective recycling infrastructures.

Focusing on the three themes of recycling, reuse and recyclability, the New Plastics Economy represents systems-level change, and working with others in the plastic packaging sector is critical to its success.

A call to action

At Davos 2018, Unilever announced four key actions the consumer goods industry should take to create the systemic change required and accelerate the transition to a circular economy:

1. For companies to invest in innovation towards new delivery models that promote reuse.
2. For more companies to commit to 100% reusable, recyclable or compostable packaging by 2025 and set stretching targets for using post-consumer recycled content.
3. For a Global Plastics Protocol setting commonly agreed definitions and industry standards on what materials are put into the marketplace, to ensure our packaging is compatible with existing and cost-effective recycling infrastructures.
4. For companies to engage positively in policy discussions with governments on the need for improvements to waste management infrastructure, including the implementation of Extended Producer Responsibility schemes.

Developing a market for post-consumer recycled materials

Closing the loop on plastic packaging, so that used packaging is viewed as a valuable resource rather than thrown away, is a major opportunity – and a major challenge. In many markets, high-quality, post-consumer recycled material (also known as PCR) is difficult to source and so is often sold at a premium.

Greater manufacturer demand for post-consumer recycled materials will produce an increasingly attractive business case for re-processing services, and will also act as a catalyst to increase the collection and reprocessing of materials.

Partnering with industry to rethink flexible packaging

In 2016, Unilever joined an initiative called [CEFLEX](#), a consortium of around 60 European companies, organisations and associations across the entire value chain of flexible packaging including: raw materials suppliers, packaging converters, brand owners and retailers, producer responsibility organisations, collectors, sorters and recyclers, as well as other technology suppliers and potential end users of the secondary raw materials.

CEFLEX continues the work of the projects FIACE (EU) and REFLEX (UK) which both sought to quantify the added value of flexible packaging and identify opportunities to increase recycling. Its mission is to make flexible packaging more relevant to the circular economy by advancing better system design solutions. By 2020, it aims to develop robust 'Design for a Circular Economy' guidelines for both flexible packaging and the end of cycle infrastructure to collect, sort and recycle. And by 2025, it aims to develop a collection, sorting and reprocessing infrastructure for post-consumer flexible packaging across Europe.

Working with governments

To move to a more circular economy approach we need to fundamentally rethink the way we design our products and packaging. This means carefully considering the systems in which our products flow – and working with national governments to develop waste infrastructure.

We cannot succeed alone. There are many elements which are outside our control, such as selective collection of packaging waste, little or no infrastructure and limited investment in the waste industry.

We continue to work with governments to develop policies and frameworks that facilitate this fundamental shift, including the implementation of Extended Producer Responsibility schemes.

Spotlight

Closing the loop on sachet waste

One area where we are making progress on developing the waste infrastructure within a country through multi-stakeholder partnerships, is small multi-layered sachets in Indonesia.

Sachets are a type of flexible plastic packaging. They give people on low incomes a convenient and affordable way to buy anything from shampoo to food to toothpaste – creating less waste per millilitre of product than bottles. Despite the benefits, they also pose a serious waste challenge.

In developing markets, where sachets are most popular, infrastructure for recycling is often limited and leftover sachets can end up in landfill, or litter the streets, waterways and oceans.

Until recently, it was not possible to recycle the sachets that we use. Over the last four years, we've co-developed a new technology with the Fraunhofer Institute for Process Engineering and Packaging IVV in Germany that solves this problem.

CreaSolv® is a breakthrough chemical process that recycles sachets and turns them into safe, high-quality polymers for use again and again – including in our non-food packaging sachets. It enables us to recover six kilos of pure polymers with the same energy effort as the production of one kilo of virgin polymer, reducing the CO2 footprint of sachets.

The sachets we plan to recycle won't just be ours – they will be a mix of all the sachets discarded by consumers, whether made by us or by our competitors. And the recycled resin we produce can be used by anyone, not just Unilever.

Alongside an infrastructure for collecting and processing sachets – which we are also working on with the relevant Indonesian ministries – CreaSolv offers the potential for a circular economy model and is a win-win for business and the environment. We will be trialling the use of CreaSolv on a commercial scale at our Indonesian pilot plant in 2018.

As an industry, we need to build a recycling infrastructure for sachet collection that supports the process – creating a circular model we can all share. We hope that CreaSolv will transform sachets from a global problem into a sustainable economic opportunity.

Working with consumers to promote recycling

Collecting and sorting recyclable materials plays an important part in ensuring they can be reused. Consumers, therefore, have a vital role in the circular economy. Our aim is to promote recycling among consumers, raise awareness at government and NGO level, and help workers economically. We have a number of projects to encourage consumers to recycle more and to help people make recycling a lifelong habit.

In Brazil, for example, we work with Consumer Goods Forum companies and NGO CEMPRE to increase the types of materials recycled, drop-off points for used packaging, and co-operatives to sort materials. Our partner, Brazilian retailer Pão de Açúcar, has drop-off points in their stores where consumers can bring used packaging, and our brands engage with consumers to encourage recycling. This initiative has collected over 100,000 tonnes of material since the programme began 15 years ago. In 2017, we supported 94 recycling stations across 27 cities, and 21 co-operatives that generate income (directly and indirectly) for over 3,170 people.

Incentivising behaviour change is a big part of inspiring lifelong recycling habits. That's why, in Argentina, we have started a partnership with the Buenos Aires City Government and retailers in the area to increase the volume of recycled material available to packaging producers. Consumers are offered discount benefits to encourage them to bring their waste packaging to government recycling points.

Exploring radical and innovative approaches

New business models and innovations, using circular economy principles, are transforming traditional take-make-dispose thinking with incredible speed.

Unilever wants to be part of the circular economy revolution and we are committed to pioneering breakthroughs in packaging waste. Take our recent [partnership](#) with start-up company Ioniqa and the largest global producer of PET resin, Indorama Ventures, to pioneer a new technology, which converts PET waste back into virgin grade material for use in food packaging.

This innovation is particularly exciting because it could unlock one of the major barriers today – making all forms of recycled PET suitable for food packaging. Indeed, making the PET stream fully circular would be a major milestone towards this ambition, not just helping Unilever, but transforming industry at large.

This is just one example, but many more breakthroughs are needed if we are to move towards a more circular economy – in doing so, unlocking the economic prize for business.

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