

Zero hero

Tony Dunnage, Unilever's group manufacturing sustainability director, takes **Maxine Perella** on a remarkable waste management journey, taking in the global company's Sustainable Living Plan as it strives for zero waste to landfill, not just at home but in the far reaches of its network too

Tony Dunnage, Unilever's group manufacturing sustainability director, admits he has been surprised by the pace of progress given the complexity and scale of the company's operations. "If you look at the whole journey from the beginning, from 1995 to 2010, our progress was more or less the same as everyone else's, about 2-3% improvement per year, which took us to zero waste for around 40 of our sites," he reflects.

The turning point came in 2010 when Unilever set a goal to halve the environmental footprint of the making and use of its products by 2020 – a central plank of its Sustainable Living Plan. Zero waste was added as a key delivery target under this goal, and things accelerated from there.

"It did surprise us that year-on-year we were getting faster and faster, [progress] certainly hasn't been linear in the past four years, it sped up each year, even though we were hitting the more difficult locations," Dunnage says. "We were able to get the organisation behind it and that shows in the results."

Unilever employed various ground-level measures to reach its goals. In a significant move, it took the strategic decision to streamline its waste management supply chain. In the UK, this meant switching from using 65 providers across 27 locations (representing 300 site touch points in total) to just one provider.

"We got all of our sites to zero in the UK under one contract, which was great from a simplification perspective and a cost perspective," Dunnage says. "We then replicated that across Italy, Germany, and so on. We then took the bold step to go and do that in North America, which again proved repeatable."

While the strategy worked well in countries that had established infrastructure and good markets for recycled materials, other regions – such as developing nations – proved more challenging. Dunnage says the programme became much more engaged at a local level in these locations. In some cases, this resulted in Unilever creating its own infrastructure and

markets. This had the added bonus of delivering real social value.

Dunnage points to the cement industry as a case in point, an industry which traditionally has been heavily reliant on fossil fuels.

Cement-makers have started to invest in technology that allows them to source and burn alternative fuels – including residual waste. In Indonesia, Unilever is supplying such material to these kilns. "We've gone from putting something previously in landfill to something that can replace fossil fuels in a completely different industry, especially for developing regions," Dunnage says.

Global initiatives

Other examples include by-products from Unilever's food production processes in India, which are turned into compost for vegetable growing. In South Africa, the company's tea dust and filter paper gets composted to create fertiliser for 56 local community gardens. And in Argentina, various packaging materials such as paper, cardboard and deodorant cans are recycled so that children can use them for painting and decorating.

So far, the company's zero waste drive has delivered over €200 million of cost savings and avoidance, while creating hundreds of job opportunities. "What was important to me was just how much people really embraced this, understood why we were doing it, and made it happen. The sharing between geographies and our sites was absolutely amazing," Dunnage says.

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It should come as no surprise that 90% of the €200 million cost savings generated are directly

linked to waste reduction – it's a massive focus for Unilever. "What we actually generate through recycling has reduced 15% since 2008, which is our Sustainable Living Plan baseline year. We don't just celebrate recycling, we've taken 15% [of waste] out at source as we've grown the business."

He adds that in terms of volume, dewatering has resulted in the best waste reduction gains. "From any industrial operation there will be a wastewater treatment process. The biggest reduction has been dewatering waste before it leaves the site. That helps with the value of it as well. Because this is an organic waste, you can start to think about putting this waste back into fertiliser, compost, depending on what it is and where it is."

Meanwhile, building more circular flows into the supply chain for materials is also delivering value. Prioritising reuse – effectively shifting from a single to multi-use approach – and utilising reverse logistics, particularly for inbound materials such as transit packaging, is central to this. "We do have a vision that what comes into the factory goes into the product or back around to the supplier," Dunnage says.

He further explains: "If we were previously using an ingredient in a 15-litre container, what we're trying to do is convert that into a reusable one cubic metre container.

That means we're not throwing away empty containers, which are never really empty ☺"

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Photography by Gareth Iwan Jones



Tony Dunnage CV

Tony Dunnage leads Unilever's group manufacturing sustainability team, setting and driving the agenda to reach the company's Sustainable Living Plan targets for manufacturing operations. This includes implementing strategies for energy, CO₂, water and waste.

His more recent roles have been in regional and global capacities managing eco-efficiency programmes across Unilever factory operations.

He also successfully led the company's global zero waste to landfill programme.

Other activities included the implementation of 10 combined heat and power systems and metering, monitoring and targeting in more than 75 factories.

Dunnage has worked at Unilever for more than 25 years.

He comes with more than 20 years' experience in all aspects of manufacturing, including quality, health and safety, environment, process optimisation and innovation



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because there’s always a residue in there. After the sixth or seventh journey of that container going between us and the supplier, it has paid for itself and then it becomes a profit shared between us and the supplier.”

Unilever purchases over 2.4 million tonnes of packaging materials each year. The company has done extensive work on the consumer-facing side of its business to reduce the amount of primary packaging material it uses – such as the adoption of decompression technologies for its deodorants. Innovations on the outer packaging, or materials used for storage and shipment, are not so visible, but have still delivered remarkable results.

For example, by changing the design of the outer-tray of its Citra brand in Thailand and Indonesia, Unilever reduced paper use by 62 tonnes. Applying the same flat tray solution

for its Vaseline brand, a further paper reduction of approximately 85 tonnes per year was achieved. The removal of unnecessary secondary packaging and increasing pallet efficiencies, such as switching from wooden to plastic pallets, is also paying dividends.

“Always focus on reduction, it’s where the best value is,” maintains Dunnage. “In terms of resource resilience, reducing waste at source means our supply chain is more resilient. There are a huge amount of conversations taking place up and down the supply chain ... looking at how we can eradicate waste. It’s better to reduce waste at source as much as we can, and then think about circular strategies.”

Unilever is a member of the prestigious Circular Economy 100 platform, facilitated

by the Ellen MacArthur Foundation. With its potential to pilot circularity across global supply chains, the manufacturer’s involvement presents a valuable opportunity to test the model at scale. The company has stated that it wishes to move to more circular models of recapturing its own packaging, as opposed to buying recycled material, and has started to investigate opportunities to work more closely with reprocessors to develop closed-loop systems.

REFLEX project

One such initiative involves testing a new route to recover a challenging material stream – flexible plastic packaging. Unilever is part of a consortium of companies signed up to the REFLEX project, funded by Innovate UK. The aim of the project is to remove a number of key bottlenecks in the collection and reprocessing systems.

The project is unique in that it involves collaboration across the whole supply chain, from polymer production and packaging manufacture to waste management and recycling.

Unilever is also investigating another technology to recycle complex packaging materials. Developed by German recycling firm Saperatec, the technique uses specialised micro-emulsions that can channel their way between layers of composite materials, eventually separating them.

Despite all of these achievements, there is still plenty of work to be done. The company is working to address the more challenging hazardous elements of its waste streams, albeit this represents a very small percentage of total factory waste.

The types of materials that make up this stream also vary due to differing local waste regulations around the world.

Dunnage says Unilever is now halfway through its Sustainable Living Plan journey and believes, for its manufacturing operations at least, a more integrated focus is required to extract value going forward.

“We’ll start to look much more at the energy, water, waste nexus. You can expect us to come with wanting to do more, and thinking a little bit more holistically.” **RWW**

Five things I can’t live without...



My family

My wife Janine, my daughter Hollie and son Harry. Family is a big part of why I do this job; your children help define your purpose

A cup of tea

I carry an emergency PG Tips teabag in a little pouch in my wallet at all times



Sky Sports

I’m a big sports fan, and I like my football. Sadly, I support West Ham United

Holidays

When’s my next holiday? That’s a good question. I’m not sure, but I’m hoping it will be in the West of France



Sleep

I do okay on this. I get about six hours a night