

Plastic has nothing to complain about

Texts about and images of plastic waste polluting beaches and the oceans of the world are turning some consumers against using the material. This ought to offer opportunities for leather to retake some of the market share it has lost to these synthetic materials in recent years. However, the leather industry will need to work hard to take advantage of the anti-plastic mood, which may not last for ever and there is still enormous support, including financial support, for the plastics industry among politicians. And money talks.

Graphic images of plastic waste on land and at sea have left companies who make the material and finished product manufacturers who use it feeling bruised. As 2018 progresses, it is clear the pressure on plastics producers to address this problem will continue.

There is admirably clear thinking and fresh ideas among some of the companies in the plastic sector on how to make use of more sustainable raw materials and less environmentally onerous manufacturing processes. However, it is clear that the pressure on the plastics industry in general to improve its impact on the environment is intense enough now to have some commentators talk about a tipping point. At the start of 2018, the European Commission published a detailed document with the title 'A European Strategy for Plastics in a Circular Economy'. This sets out the path forward for this industry if it is to have a chance of winning back the hearts and minds of conscientious consumers.

Something that may make painful reading for beleaguered companies in the plastics value chain (but that needs saying anyway) is that there are clear indications that plastic is getting off lightly; the backlash and bans that 2018 has brought could be a great deal harsher. In relative terms, plastic still seems to attract substantial support and sometimes that support, from bodies such as the European Commission and a number of national governments, translates into cash.

It is possible to point to at least five sections in 'A European Strategy for Plastics in a Circular Economy' that indicate that the plastics sector is enjoying a much easier ride and much more financial backing for its efforts to clean up its supply chain than other industries. Examples include a commitment from the

European Union (EU) to finance research and innovation projects that will decontaminate plastic waste to make it more recyclable, and to look into ways of promoting finished products that contain this recycled content. The document later says that the Commission will look into opportunities to support the development of alternative feedstocks, including plant-based materials, in plastic production.

No one would argue that these are anything other than good ideas, but when was the last time the EU or anyone else offered funding of this kind to the leather industry? All leather is recycled and, therefore, all finished products that contain leather contain recycled content. And lest it appear all talk, the EU has already provided money to support these advancements in plastics: Through a funding programme called Horizon 2020, it has already provided €250 million to finance research and development "in areas of direct relevance" to 'A European Strategy for Plastics in a Circular Economy'. About half of this money has gone into developing the alternative feedstocks mentioned above. Other support has come from a separate policy called the EU cohesion policy, which focuses on "smart specialisation strategies", and the document says a large number of these strategies include "plastics-related innovation priorities".

As if this weren't enough, the strategy goes on to pledge an additional €100 million in the run-up to 2020 (that is, immediately) for the financing of what it calls "priority measures". Yes, the plastics industry is taking a hammering at the moment, but all these hundreds of millions of euros in new funding to help it improve itself ought to make the blows more bearable.

Bottle merchants

News taking plastic to task is unrelenting. In mid-May 2018 the European Federation of Bottled Waters (EFBW) announced four industry-wide pledges that aim to increase the collection of PET (polyethylene terephthalate) bottles and the use of recycled PET. The Brussels-based body, which represents almost 600 natural mineral and spring water producers across Europe, has said this will accelerate the shift towards a more circular economy.

"All drinks containers used by the industry, be it PET, glass or aluminium, are recyclable," EFBW says. "However, the level of collection of PET drinks bottles varies substantially across the EU. Some member states collect more than 90% of PET bottles while others collect less than 20%, meaning our packaging today is part of the unacceptable phenomenon of littering."

Europe's mineral and spring water brands believe that PET bottles "must be given a second life" and its four new pledges aim to make sure this happens. These companies will make 90% the EU average for collecting PET bottles to make sure they can be used to produce new bottles or, of interest to the textile industry, "other products" (see panel). Water companies will work with the recycling sector to use at least 25% recycled PET in their water bottles, although they make it clear that, for this, they are going to need "a consistent supply of high-quality recycled material". These companies also promise to invest in new plastics that are made from renewable raw materials (presumably with the help the EU's millions), and they will work with consumers to encourage anti-litter activities and better sorting of recyclable materials; recycling companies say this is a priority because, at the moment, they do not have enough feedstock to meet market demand. The EFBW pledges give them until 2025 to achieve these objectives.

President of the organisation, Jean-Pierre Deffis, comments: "We are committed to achieving these industry-wide actions. PET drinks bottles already achieve the highest recycling rate of any plastic packaging material in the EU. But even one bottle ending up as litter is one too many."

Viability and credibility

Progress is important. Martin Stephan, chief operating officer of Carbios, a French company that has been working since 2012 to perfect the use of enzyme technology to reverse polymerise PET (polyethylene terephthalate), insists that companies are continuing to advance, certainly as far as the science is concerned. Carbios has now shown that its technology is "viable" and compatible with industrial processes, he says, and has the backing to design and construct its own plant, which will be complete in 2021.

A second topic for him is credibility. "We've spoken to a lot of people," he explains, "brand owners and regulators, and we know that they need new technology because they cannot reach the goals they have set themselves with what's currently available." He confirms that there is leadership in this area from fast moving consumer goods brands such as the water companies, but the fashion industry remains a key market for recycled polyester fibres. According to Martin Stephan, big fashion brands and retailers "have had the discussion" with Carbios and are still considering the company's idea, which centres on using enzymes to depolymerise PET back into monoethylene glycol and terephthalic acid. Its contention is that this can make it possible to recycle PET time and time



The interior of a Bentley Flying Spur. The case for leather, in the context of a circular economy, is a strong one.

CREDIT: BENTLEY MOTORS

again, without any loss of quality. And its most recent advances will make this possible with all types of PET, not just the transparent variety, meaning recycled coloured bottles will be of just as much value as clear ones. It has also managed to make the process three times faster than it was originally, with 97% of PET material converting back to the original monomers in 24 hours.

Naturally, the idea of this appeals to clothing and footwear brands, but it would mean making big improvements to our systems for collecting, sorting and recycling not just bottles, but the products we make with plastic recycled from the bottles, including shoes and bags.

A curious incident

Litter, as we now know, is everywhere. It emerged recently that the Global Oceanographic Data Centre of the Japan Agency for Marine-Earth Science and Technology has found plastic waste in the Mariana Trench, which is the deepest part of the world's oceans at 10,898 metres at its most profound point. Basically, if plastic can make it there, it can make it anywhere, as Frank Sinatra almost said.

Ocean advocate, sailor and artist Emily Penn needs no convincing. She says her career took a new turn the night the boat on which she was "hitching a lift" to Australia crashed into a mass of plastic waste. "We were surrounded by pieces of plastic," she says, "but we were thousands of miles from anywhere. The closest people to us were in the International Space Station above our heads."

Ms Penn now sails the world and connects scientists, communicators and others with the ocean. Speaking at a *New York Times*-organised event in May this year called, starkly, 'How to Save the World: The War on Plastics', she said the curious incident of the dregs in the nighttime led to her becoming a campaigner for projects that aim to keep plastic waste out of the oceans. Her experience is that it's rare to find islands of large pieces of plastic floating on the surface of the water, even at the "accumulation areas", or gyres, that ocean



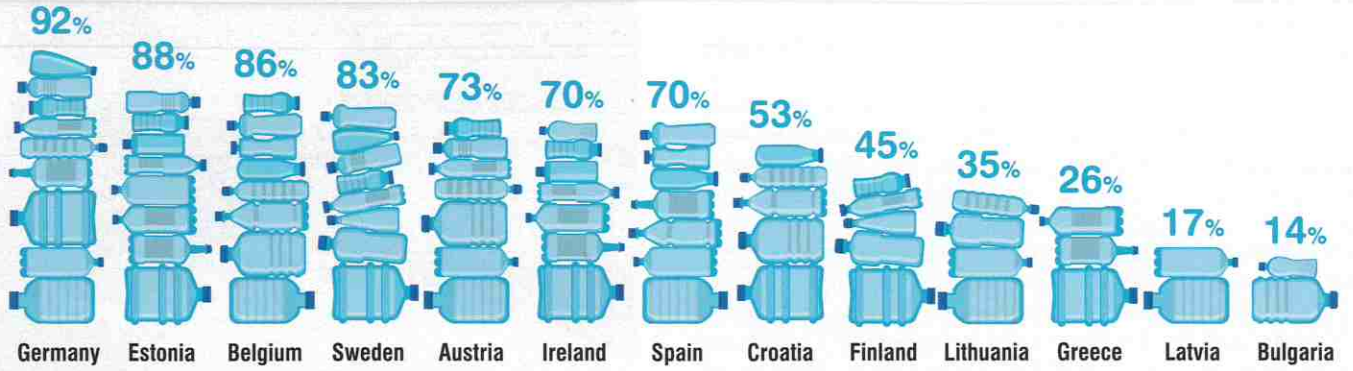
Washed up plastic detritus on a beach.

CREDIT: SHUTTERSTOCK/ERLO BROWN



Valuable empty bottles

Empty PET bottles must be viewed as "valuable resources", not as waste, the EFBW says. The organisation has pledged to make a 90% collection rate the average across the EU by 2025. Some countries are achieving this already, but others are nowhere near the target, and the difference cannot be explained by contrasting methods for encouraging collection. Some high performers use an 'extended producer responsibility' method, while others employing the same policy have shockingly low collection rates. The same applies to countries using 'deposit-return systems'; some fare brilliantly, while others remain far behind. ●



SOURCE: PCI WOOD MACKENZIE/EFBW

currents produce at given points. That's because the larger pieces have degraded and turned themselves into much smaller particles that, in turn, are making the seas into what she calls "a fine soup of plastic pieces".

It is difficult to distinguish between some of these bits of material and the plankton that fish feed on, she explains. Therefore, it was no surprise to Emily Penn that analysis of fish she and her colleagues have carried out show large amounts of plastic inside them. "What might the implications be for us," she wonders, "if this plastic is getting into the food chain?" To find out if it really is something she ought to be devoting her time to, she decided to have analysis done on her own blood. Consultation with the United Nations identified 35 chemicals, potentially present in some ocean plastic, that might be a cause for concern. "Of those 35 chemicals, we found 29 of them inside my body," she reveals. "This really changed things for me. We all, I'm afraid, already have a body burden, a chemical footprint, something that we'll never get rid of." Levels are not so high as to make us immediately concerned about her health, she says, but she describes it as "a very scary indicator" of the direction that we are moving in.

Questions on the after life

At Carbios, Martin Stephan accepts that all plastics producers have a job on their hands to calm campaigners' fears. His impression is that this may be especially true in the UK where, he says, not a single week goes by without at least one negative article in mainstream media about plastic. "There is less of this on the continent," he insists, "but campaigns are intense, too, and with good reason. Plastic is a fantastic material and it has brought a lot of benefit to society, but we have not paid enough attention to its after life. Our idea is that we can use PET waste to create a virtuous circle and bring the circular economy closer, making at least some of our new fibres and new materials from waste instead of from petrochemicals. It can be done."

If plastic receives support from bodies such as the European Commission as well as criticism, Mr Stephan believes that the main reason is the usefulness of the material. It is lightweight, so it has helped make cars and

aeroplanes lighter, which lowers the carbon emissions of these forms of transport. Its ability to extend the life of food means the problem of food waste is less bad than it might be.

"It's impossible to use natural fibres to replace all of this," he says, "and we should continue to use plastic. The main thing is that we can and must do better in finding a use for plastic waste and the whole of society, including consumers, brands, retailers and regulators as well as manufacturers, shares the responsibility for that."

A case to make

Leather will share its future with plastics and can support arguments such as those Mr Stephan puts forward: it's good to take a waste material and make it useful (and, in leather's case, also beautiful). Tanners, too, must keep improving the environmental soundness of the production processes they employ and the leather industry, as a whole, must keep making a case for leather. There is, perhaps, no need to overstate that case. One of the biggest problems the leather industry has to contend with in its attempts to present itself as a viable and important part of the circular economy is the temptation to 'greenwash' its own story, according to Dr Warren Bowden, managing director of Scottish Leather Group Technology. "We must be honest and transparent," Dr Bowden says. "Greenwashing is one of our biggest enemies. There are bad practices in parts of the global leather industry and in the livestock industry, where we do have an influence, and we should have fixed that bad practice a long time ago. This is controversial, but I'm pleased animal rights groups have flagged some of these things up."

The joint-managing director of Heller-Leder, Thomas Strebost, has said he believes it would be difficult for the leather industry to come up with one, single, sector-wide campaign to project a positive image of leather. "I think one campaign on its own is not the way," he says. "A series of smaller campaigns will have much more reach." Mr Strebost says he doesn't think recent negative publicity for the plastics industry has changed anything for leather yet. "It may go that way in future if the mood against plastic continues," he says. "Any campaign against plastic should help leather, which is a natural material." ●