

Plastic Food and Drink Packaging

Evidence for the Environment, Food and Rural Affairs Committee by Wildlife and Countryside Link
May 2019

Wildlife and Countryside Link (Link) is the largest environment and wildlife coalition in England, bringing together 49 organisations to use their strong joint voice for the protection of nature. Our members campaign to conserve, enhance and access our landscapes, animals, plants, habitats, rivers and seas. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.

This response is supported by the following Link members:

- *Arocha UK*
- *Campaign to Protect Rural England*
- *Friends of the Earth*
- *Greenpeace*
- *Humane Society International-UK*
- *Marine Conservation Society*
- *Salmon and Trout Conservation*
- *The Wildlife Trusts*
- *Whale and Dolphin Conservation*
- *WWF*
- *Zoological Society of London (ZSL)*

Q1. What progress have packaging manufacturers, food producers and retailers made in developing and using alternatives to, and reducing consumers' use of plastic food and drink packaging?

1.1. Plastic pollution is now abundant in all the world's oceans with up to 12 million metric tonnes¹ of plastic leaking into the oceans each year, a figure that could treble by 2025. This pollution is also prevalent in terrestrial and freshwater ecosystems. Approximately 80% of the plastic pollution found in marine ecosystems originates on land². Such high levels of pollution are resulting in a risk to human health too, not just wildlife. The World Economic Forum has highlighted the 'huge volume of plastic waste in the world's water'³, the ubiquity of microplastics, and the possibility that they are finding their way to the human body bringing toxic chemicals with them. Recent studies have found at least 63 chemicals included in plastic packaging that represent a high risk for human health⁴.

1.2. Plastic production has increased twentyfold in the past half-century and is expected to double again in the next 20 years⁵. Over 90% of plastics produced are currently derived from virgin fossil-based feedstocks. The Ellen MacArthur Foundation (EMF) estimates that this represents, for all plastics (not just packaging), about 6% of global fossil oil consumption, which is equivalent to the oil consumption of the global aviation sector⁶. There is currently no evidence to suggest that this expected increase in production will be met with a commensurate increase in recycling capacity in nearly enough time, meaning under business-as-usual scenarios leakage of plastic waste into the environment is highly likely. Single-use plastic packaging makes up a large proportion of this total footprint, with consumer plastic packaging accounting for around 70% of the UK's plastic waste⁷.

1.3. Every time a piece of plastic is recycled the polymer chain grows shorter⁸, meaning its quality decreases and can only be recycled a finite number of times before ultimately ending up in landfills, incinerated or entering the environment. Additionally, each time plastic is recycled, additional virgin material is added to help "upgrade" its quality. In this sense, plastic is not a material that can be used sustainably and within a 'closed loop' system, and improvements in recycling alone cannot address the plastic pollution crisis.

1.4. A significant reduction in single-use plastic packaging will be required if the UK is to transition to a truly circular, resource-efficient economy. We need to urgently move away from our throwaway culture and build a

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/706956/foresight-future-of-the-sea-report.pdf

² Gionfra, S. 2018. Plastic Pollution in Soil. 18 Pages. Available [here](#).

³ <https://www.weforum.org/reports/the-global-risks-report-2018>

⁴ Groh, K.J., Backhaus, T., Carney-Almroth, B., Geueke, B., Inostroza, P.A., Lennquist, A., Leslie, H.A., Maffini, M., Slunge, D., Trasande, L. and Warhurst, A.M., 2018. Overview of known plastic packaging-associated chemicals and their hazards. *Science of the Total Environment*. <https://www.sciencedirect.com/science/article/pii/S0048969718338828>

⁵ http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

⁶ https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_TheNewPlasticsEconomy_Pages.pdf

⁷ https://www.wwf.org.uk/sites/default/files/2018-03/WWF_Plastics_Consumption_Report_Final.pdf

⁸ Geueke, B., 2014. Plastic Recycling. Food Packaging Forum dossier. https://www.foodpackagingforum.org/fpf-2016/wp-content/uploads/2015/11/FPF_Dossier08_Plastic-recycling.pdf

reusable, refillable society. With manufacturers, food producers and retailers contributing to the issue every day, they have a responsibility to eliminate plastic and move to refillable and reusable models.

1.5. To date, reductions in primary packaging from manufacturers, producers and retailers have been very minimal in comparison to the exponential growth in single-use packaging, and largely focused on light-weighting rather than unit-based reductions.

1.5.1. Reduction targets should be met primarily by reducing the number of items (units) rather than solely the weight of packaging, as this is what is important for reducing plastic pollution. For example, if a company achieved its target by reducing the weight of plastic items but did not actually reduce the quantity sold, the number of items leaking into the natural environment may not actually decrease

1.5.2. Any progress that has been achieved has been done so on a voluntary basis driven mainly by retailers and brands as part of commitments within their own businesses. As part of voluntary commitments such as WRAP's Courtauld Commitment I initiative (2005-2009) 1.2mT of packaging and food waste was saved and 3.3Mt⁹ of CO2e saved in the process. A 2018 survey of the UK grocery retailer sector by EIA and Greenpeace found that only five of the top ten supermarkets have plastic-specific reduction targets in place. With the exception of Iceland, who has pledged to completely phase-out single-use own brand plastic packaging by 2023, most supermarkets have committed to much lower reductions of 5% or less of their plastic packaging footprint per year. M&S sought to reduce plastic packaging by 5% between March 2018 – 2019 (1,500 tonnes) and aims to achieve a further 5% reduction between 2019 – 2020. Asda committed to reduce own brand plastic packaging by 10% (6,500 tonnes) over two years (2017 -2019), achieving this target in early 2019¹⁰. Other plastic specific targets include Lidl's commitment to reduce own brand plastic packaging 20% by 2022 from a 2017 baseline, and Morrison's 25% by 2025 from a 2018 baseline – both equating to less than 5% reduction per year. An OECD report¹¹ looking at voluntary approaches for environmental policy concludes such approaches provide few environmental improvements beyond what would have occurred anyway and fail to tackle the scale of the problem given the exponential growth in single-use packaging.

1.5. To reduce the harmful impacts of all packaging, regardless of materials, on the environment and human health we need a wholesale transition away from throwaway economy rather than simply substituting existing harmful packaging for alternatives, resulting in unintended consequences in the production chain. The weight-based target used in the the Courtauld Commitment initiative resulted in a greater use of non-recyclable films in place of heavier rigid plastic packaging formats. Demand for paper straws has also seen an increase of 4,900%¹² since many retailers have begun substituting them for plastic straws.

1.7. One retailer, Boston Tea Party, has attempted to lead the charge on establishing a reusable society by becoming the first chain in the UK to ban all disposable cups. Customers are now required to use their own, or borrow a reusable cup¹³, however, this decision has resulted in a £250,000 drop in sales¹⁴. Retailers should not be penalised for putting planet over profits, instead the Government should be facilitating a level playing field.

1.8. It is clear that Government intervention is needed to bring about the wholesale transition to replace our existing throwaway culture with a reusable, refillable society. The current consultations on Extended Producer Responsibility, a Plastic Packaging Tax and a Deposit Return Scheme will go some way to achieving that, but fall short of the level of system-change required.

Q2. What are the barriers to and opportunities for further innovation?

2.1. In recent years, key drivers of packaging design have included marketing, convenience, cost reduction, weight reduction and extended shelf life¹⁵. These factors have driven an increase in multilayer design, flexible packaging and films¹⁶ different types of nano-barriers and 'smart' packaging applications¹⁷, and use of the cheapest colourants (like carbon black)¹⁸; all of which are hard to recycle. There can be upfront costs associated

⁹ <http://www.wrap.org.uk/content/what-is-courtauld>

¹⁰ Asda, 2019. Asda meets promise to remove 6,500 tonnes of own brand packaging. Available at: <https://corporate.asda.com/newsroom/2019/03/13/asda-meets-promise-to-remove-6500-tonnes-of-own-brand-plastic-packaging-in-a-year>

¹¹ <http://www.oecd.org/greengrowth/tools-evaluation/15357687.pdf>

¹² <https://www.inc.com/emily-canal/plastic-straw-ban-paper-straw-company.html>

¹³ <https://bostonteparty.co.uk/cups/>

¹⁴ <https://www.bbc.co.uk/news/uk-england-bristol-47629820>

¹⁵ <http://www.arena-international.com/Journals/2018/03/21/v/i/o/GlobalData---Dominic-Cakebread.pdf>

¹⁶ <https://news.thomasnet.com/featured/top-trends-driving-the-flexible-packaging-market/>

¹⁷ https://www.researchgate.net/publication/326017503_Smart_Packaging_Opportunities_and_Challenges

¹⁸ http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=PLASTIC_ZERO_sort_plast_brchure_final_en.pdf

with retrofitting product design and delivery modes which can deter retailers and producers from looking towards innovative solutions in reusable and refillable packaging alternatives.

2.2. A simple alternative to existing single-use packaging options in food shops is plastic and waste free refillable alternatives. The number of plastic and waste free shops has already risen to roughly 200 in the UK alone¹⁹. Though these shops are often small local shops, supermarkets are also exploring options. Tesco is trialling plastic free fruit and vegetables in select stores²⁰, but only for certain items in a small number of stores. To reduce the 800,000 tonnes of consumer-facing single-use plastic packaging created by supermarkets these trials need to be scaled up urgently by supermarkets and retailers of all sizes.

2.3. Alternative delivery models are also available. Loop is an online delivery system that will offer everyday essentials in reusable, durable packaging²¹. Similar to the original milkman system, items are delivered, customers request collection of empty items which are then returned refilled. This system is due to be launched in the USA and France soon.

2.4. Alternatives for takeaway cups and packaging include ideas such as the Freiburg cup in Germany where retailers sell, wash and return reusable cups across a network in the city²². Cup Club provides another example, where customers join, pick up a reusable cup at partaking stores and then return it to a collection point later on where it is collected, washed and redistributed²³. A deposit return system for takeaway containers is another opportunity that could be explored²⁴.

2.5. As stated in question 1, companies such as the Boston Tea Party have attempted to innovate by simply banning all single-use cups, but as a result they are being penalised by consumers. This shows the need for Government to create a level playing field by putting the right incentives in place. It also highlights the clear need for education and engagement campaigns for citizens to increase support and secure buy in for the innovative new packaging solutions we need to adopt.

2.6. Recent studies inventorying chemicals likely to be associated with plastic packaging has shown that we are exposed to 1000s of different chemicals through plastic packaging and we know very little or nothing about the effect of these chemical mixtures on human health²⁵. Recycling these harmful chemicals into new innovative food and drink packaging materials could contaminate the circular economy. To overcome this, all hazardous chemicals should be eliminated from the manufacturing process and final product and labelling on the chemical content of the packaging should be introduced to inform consumers.

2.7. Some retailers have also raised health and safety concerns associated with customers bringing in their own packaging. This could be addressed through the establishment of industry standards for refillable containers to mitigate the risk of contamination and address concerns of liability.

2.8. Sometimes, concerns about food waste are raised as another barrier to the removal of single-use plastic packaging. However, in Europe alone, the levels of plastic packaging and food waste per capita have grown simultaneously, with annual levels in excess of 15 million tonnes or 30kg plastic packaging waste per capita, and of 31 million tonnes or 70kg household food waste per capita²⁶. With plastic packaging failing to achieve a reduction in food waste, this once again highlights the need for a reduction in packaging rather than substitutions.

2.9. *Recommendation: In order to overcome the barriers to tackling the packaging problem, we urge the Government to invest in scaling up the many solutions currently available, incentivising producers and retailers to transition towards reusable and refillable delivery models.*

Q3. How do alternatives to plastic perform compared to plastic food and drink packaging?

3.1. We do not condone a simple substitution of one single-use material for another, which is what many 'alternatives' are designed to do. The only solution to the packaging crisis is the elimination of all non essential single-use packaging and a transition to a refillable, reusable society.

¹⁹ https://www.theguardian.com/environment/2019/apr/21/the-zero-waste-revolution-how-a-new-wave-of-shops-could-end-excess-packaging?CMP=Share_AndroidApp_Tweet

²⁰ <https://www.theguardian.com/business/2019/mar/25/tesco-begins-plastic-free-trial-for-selection-of-fruit-and-veg>

²¹ <https://loopstore.com>

²² <https://www.bbc.co.uk/news/world-europe-38066528>

²³ <https://cupclub.com/press>

²⁴ <https://www.isonomia.co.uk/container-drivers-tackling-the-takeaway-packaging-problem/>

²⁵ Groh, K.J., Backhaus, T., Carney-Almroth, B., Geueke, B., Inostroza, P.A., Lennquist, A., Leslie, H.A., Maffini, M., Slunge, D., Trasande, L. and Warhurst, A.M., 2018. Overview of known plastic packaging-associated chemicals and their hazards. Science of the Total Environment. <https://www.sciencedirect.com/science/article/pii/S0048969718338828>

²⁶ http://www.foeeurope.org/sites/default/files/materials_and_waste/2018/unwrapped_-_throwaway_plastic_failing_to_solve_europes_food_waste_problem.pdf

3.2. The Department for Business, Energy and Industrial Strategy (BEIS) has promised to reduce ‘plastic waste and pollution by developing a new generation of advanced and environmentally sustainable plastics, such as bio-based and biodegradable packaging and bags’ in the 2018 Bioeconomy Strategy²⁷. This same strategy also estimates a £20 billion growth in the global bioplastics market across five years. This shows the Government’s support for recycling and substitution rather than reduction as a whole.

3.2. These estimations also sit at cross purposes with the fact that there is still insufficient evidence to suggest bioplastics and compostables provide a sustainable alternative to polyolefin-based plastics. Oxo-degradable polymers include additional chemicals to speed up degradation, but there is evidence these do not fully biodegrade. Instead, they fragment into small pieces, contributing to microplastics pollution²⁸. A recent report highlighted that after being submerged in the marine environment for three years, a ‘biodegradable’ bag was still able to support the weight of an entire shopping load²⁹. If scaled up, these bags could contribute to plastic pollution rather than solve it. Alongside concerns around their environmental harm in the marine environment, to meet current plastics demand, biobased plastics made from agrobased feedstocks would divert land from agriculture or require conversion of existing natural habitats, resulting in additional environmental harm. UNEP have concluded that biodegradables “will not bring about a significant decrease either in the quantity of plastic entering the ocean or the risk of physical and chemical impacts on the marine environment”³⁰. Regardless of their performance or our understanding of their impacts, the focus for retailers must be around avoidance, reuse and recyclability of plastics they use and a greater inclusion of recycled content. With further innovation to challenge the systems which have become dependent on plastics to operate successfully.

3.3. When looking at alternatives to plastic, we must consider alternative delivery methods where the need for single-use packaging is eliminated, as listed in response to question 2. Innovation around alternative delivery systems should apply throughout the supply chain where the employment of single-use packaging is high but not as visible to the consumer. As part of this we need to address concerns around health and safety so that we do not put consumers at risk - as previously mentioned this could be done through establishing industry standards for refillable containers to mitigate contamination risks and address liability concerns.

Q4. Are there food and drink products for which it is essential to use plastic, or for which it is more difficult to develop and use alternatives?

4.1. There are certain food and drink products where grocery retailers are facing challenges in finding plastic-free alternatives – for example, vacuum packaging for meat and fish, and convenience good ranges like pre-prepared salads and sandwiches. Solutions may be found through taking a holistic approach and considering how alternative modes of product delivery might be scaled up, such as incentivizing more customers to utilize ‘over the counter’ services for meat and fish, where reusable containers are already permitted by many supermarkets. It may also be necessary to fundamentally review the convenience food market, which has underpinned the rise in pre-prepared and pre-packaged food including pre-cut fruit and vegetables, pre-packaged sandwiches, sushi and wraps.

4.2. In some product categories, the use of plastics has become the norm and supply chains are heavily invested in plastic packaging formats. Government policies and targets promoting a smooth transition towards a system no longer reliant upon single-use packaging, could help boost confidence along the supply chain to make the required investments. Economic incentives, funding opportunities and collaborative platforms could help reduce upfront costs.

4.3. *Recommendation: The Government must focus on eliminating and reducing usage of all single-use packaging formats, not just plastic, where possible, followed by encouraging reuse and increased use of recycled content.*

²⁷

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/761856/181205_BEIS_Growing_the_Bioeconomy_Web_SP_.pdf

²⁸ Yashchuk, O. et al, 2012. Degradation of Polyethylene Film Samples Containing Oxo-Degradable Additives, *Procedia Materials Science*, 1, pp:439-445 <https://www.sciencedirect.com/science/article/pii/S2211812812000600>

²⁹ <https://www.theguardian.com/environment/2019/apr/29/biodegradable-plastic-bags-survive-three-years-in-soil-and-sea>

³⁰ [https://wedocs.unep.org/bitstream/handle/20.500.11822/7468/-/Biodegradable Plastics and Marine Litter Misconceptions, concerns and impacts on marine environments-2015BiodegradablePlasticsAndMarineLitter.pdf.pdf?sequence=3](https://wedocs.unep.org/bitstream/handle/20.500.11822/7468/-/Biodegradable%20Plastics%20and%20Marine%20Litter%20Misconceptions,%20concerns%20and%20impacts%20on%20marine%20environments-2015BiodegradablePlasticsAndMarineLitter.pdf.pdf?sequence=3)

Q5. What impact will the following two Government proposals have on reducing plastic food and drink packaging?

- a. an extended producer responsibility scheme for packaging to ensure the costs of collection and recycling are borne by those that produce packaging and place it on the market, and**
b. a tax on plastic packaging with less than 30% recycled plastic, to encourage manufacturers to produce more sustainable packaging and create greater demand for recycled material?

5.1. We welcome the current consultations which seek to introduce a number of measures across the packaging chain as an improvement on the current system, but note that they are not fundamentally designed to bring about a wholesale reduction in single-use packaging and shift to reusable and refillable alternatives.

5.2. As currently proposed, revisions to the EPR scheme for packaging are likely to encourage use of more recyclable materials, pass the cost of waste management from Local Authorities to producers, and improve the standards around packaging waste exports. The increased funding to local authorities will alleviate the financial burden of managing full net cost recovery of packaging at its end-of-life. Harmonising the set of materials collected will also improve the quality of feedstock going to Material Recovery Facilities (MRFs) which will help assist in the delivery of the Plastic Packaging Tax. However, the scheme is not primarily designed to catalyse a wholesale transition away from single-use packaging towards reusable and refillable alternatives.

5.3. Similarly to the EPR proposals, the plastic packaging tax as currently proposed is not designed to reduce single-use plastic packaging, but to ensure that it contains a higher level of recycled content. We are concerned that by solely focusing on plastic, its implementation could lead to substitutions from one material to another which will result in unintended environmental consequences. Although a target of 30% recycled content is more challenging than existing voluntary agreements such as the UK Plastics Pact (targeting an **average** of 30% recycled content), we do not believe it is sufficiently challenging for certain materials where there is already a well-established recycling stream. To be as effective as possible at reducing plastic packaging and increasing recycled content, we want to see differentiated thresholds for the various materials and for these to be reviewed regularly accounting for the recycling stream available. And as recycling infrastructure improves as a result of the proposals within the Deposit Return Scheme and Consistent Collections consultations, this will drive availability of food grade recycle such as rPET and 30% as a threshold would not be sufficiently ambitious especially where, as previously mentioned, individual businesses are committing to higher levels e.g. Coca-Cola targeting 50% rPET.

5.4. In their current forms, neither of these proposals directly address the need to avoid and reduce the volume of plastic and other packaging in use. To achieve this, we recommend the following:

- *Implement a revised UK wide Extended Producer Responsibility Scheme with the principles of avoidance, reduction and reuse at its heart. Alongside reduction/reuse targets, this will ensure a focus on reducing all forms of packaging and encourage an increase in packaging free alternatives.*
- *Implement a tax on all packaging materials, not just plastic, with multiple thresholds for different materials dependent on the existing recycling stream. And flexibility to increase the target recycled content threshold as infrastructure improves.*
- *Introduce a Deposit Return System for containers of all sizes and materials.*

Q6. Is there adequate research and development funding and support for alternatives to plastic food and drink packaging?

6.1. Ultimately, we need a wholesale transition away from throwaway packaging and towards a reusable, refillable society. As outlined in this response, solutions are available to tackle the packaging problem but they need Government support to be delivered on a wider scale. Supporting 'alternative' single-use materials does not address the problem, and could result in unintended environmental consequences.

6.2. Research around plastics UK and the circular economy has been identified by the government as Areas of Research Interest (ARIs). Funds available for research in this area include the £20m Plastics Research and Innovation Fund and the £20m Plastics and Waste Investment Fund. Also the Government aims to show global leadership by committing a £61.4m package of funding to boost global research across the Commonwealth on the marine plastics problem. Further opportunities to apply for funding in this area will be available with the launch in December 2018 of the £60m Smart Sustainable Plastic Packaging Fund, part of the Industrial Strategy Challenge Fund.

6.2.1 UKRI investment in polymer-related research from Research Councils and Innovate UK totalled ~£140m from 2014-2017. The gaps in the research are around the human impact and human behaviour factors in relation

to the plastic waste issue (~5% of the total funding)³¹. It is vital that all aspects of this issue are tackled including consumer behaviour which has a crucial role in ensuring waste is disposed of responsibly and with a view to enabling greater reduction, recovery and recycling in line with circular economy principles.

6.3. Recommendations: Whilst we welcome this funding from the Government, we call for a joined up effort to tackle this issue of plastic waste and would like to see outcomes from the various research projects which are focused on reduction and do not lead to unintended environmental consequences. We would also welcome further research in the area of human behaviour as education of consumers is critical to tackling this issue.

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³¹ <https://admin.ktn-uk.co.uk/app/uploads/2017/07/Polymer-Report-2017-web-160617.pdf>