



BRIEFING PAPER

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Plastic waste

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Summary

The scale of plastic in the UK

In the UK it is [estimated](#) that we use five million tonnes of plastic every year, nearly half of which is packaging, and demand is rising. The UK Government publishes regular statistics on the amount of plastic packaging produced and on its final treatment, although some of these statistics have been questioned for their accuracy both by the National Audit Office and WWF-UK.

Environmental problems and benefits

[Plastic waste](#) often does not decompose and can last centuries in landfill, or else end up as litter in the natural environment, which in turn can pollute soils, rivers and oceans, and harm the creatures that inhabit them.

Single use plastic does have a [number of benefits](#). These include contributing to food safety and hygiene and reducing packaging weight in transit and thereby reducing energy and emissions that would be generated by alternative materials.

Other plastics issues

Local authorities in particular have been affected by a number of issues related to plastic waste. These include a recent ban by China on accepting certain types of plastic waste, which has meant local authorities have had to find alternative end destinations for plastic waste, which has in turn increased their costs. It is often difficult for local authorities to find recycling solutions for certain types of black plastic and low-grade plastic.

In July 2018 WRAP published a guide, [Understanding plastic packaging and the language we use to describe it](#), setting out some of the terminology problems of describing plastic. In particular, how names given to plastics do not necessarily dictate the way the plastic will behave at the end of its life, for example that the term “bioplastic” does not automatically mean it will biodegrade.

EU strategy for plastics

At EU level there is a European Strategy for Plastics in a Circular Economy which, when adopted as a Directive and transposed would ban specified types of single use plastic. The implications of this for the UK will depend on the outcome of the Brexit negotiations, although the [Government has stated](#) that it supports this initiative and “will match or where economically practicable exceed the Directive’s ambition.”

UK Government ambitions and targets

The [UK Government](#) has a strategic ambition to “...work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025.” This follows on from and is intended to support [commitments](#) to leave the environment in a better condition for the next generation and, in particular:

- an “ambition” of zero avoidable waste by 2050
- a “target” of eliminating avoidable plastic waste by end of 2042.

Government proposals for change

The UK Government’s December 2018 [Resources and Waste Strategy](#) contained a number of current proposals and policies aimed at reducing plastic waste, including a ban on certain single use plastic items.

4 Plastic waste

A suite of consultations was then published on 18 February 2019 which have provided more detailed information on a number of different actions:

- [Consultation on reforming the UK packaging producer responsibility system](#);
- [Plastic packaging tax: consultation](#);
- [Introducing a Deposit Return Scheme \(DRS\) in England, Wales and Northern Ireland](#); and
- [Consultation on Consistency in Household and Business Recycling Collections in England](#).

Some of these policies and proposals are UK-wide (such as the packaging producer responsibility system and plastic packaging tax), whereas for others separate consultation has been undertaken by the devolved Governments – for example for the deposit return scheme in Scotland. This briefing paper explains further which proposals stem from which Government.

The UK Government has also signed up to many international agreements aimed at reducing plastic in the marine environment. An example of this is the [Commonwealth Clean Oceans Alliance](#).

Voluntary initiatives

There are a number of initiatives aimed at changing the way that plastics are designed, produced, used, re-used, disposed of and reprocessed by all stakeholders in the plastics chain. Examples of these include:

- the “Plastics Pact”, a collaboration of businesses, (including a number of supermarkets, retailers and manufacturers), which has set a target to eliminate unnecessary single-use plastic packaging, for all plastic packaging to be re-usable, recyclable or compostable and for 70% to be recycled or composted by 2025.
- The “Plastics Industry Recycling Action Plan” (PIRAP), an industry action plan which includes: increased collection of recyclable plastics; improve sorting; and developing end markets for recycled plastics.
- The “UK Circular Plastics Network” (UKCPN), which aims to bring together plastic product users through a programme of networking and knowledge-sharing events and related support activities.

Supermarkets and retailers also have many initiatives aimed at reducing plastic packaging, having plastic-free aisles and allowing customers to use their own personal packaging containers.

1. Statistics on plastic waste

How much plastic does the UK produce?

The latest estimates for the UK are for 2016 and cover all producing sectors, not just household waste. In that year an estimated 1.53 million tonnes of plastic waste was reported. This was up by 24% since 2010 and 13% since 2014. The service sector¹ was the largest single contributor with 53%. Households contributed just over 8%. These data are based on waste streams that are categorised as 'plastics wastes'(only) and exclude the plastic content of other mixed waste streams such as the general 'Households and similar wastes' stream.²

The coverage of UK data on plastic waste has been questioned by some organisations. A report for WWF calculated that total plastic waste generation in the UK in 2014 was around 4.9 million tonnes and could increase to around 6.3 million tonnes by 2030.³ Plastic packaging made up two-thirds of plastic waste in 2014 (3.3 million tonnes).

What happens to plastic waste?

In 2016, 91% of plastic waste (in this stream only) which was sent to treatment went to 'recycling and other recovery' and 9% to landfill. The amount of plastic waste going to landfill fell from 122,400 tonnes in 2012 to 53,400 tonnes in 2016.⁴

Again the coverage of this data has been questioned. The WWF-UK report calculated recycling rates for single use plastics, based on the amount of waste produced, not just the share going to 'treatment' of any kind (landfill, recycling, incineration etc.). They estimated recycling rates of 29% for 2018 and projected a rate of 37% for 2030 based on estimates of all plastic waste. Estimated landfill rates in 2018 were 48% with 22% going to energy recovery.⁵

¹ Includes all retail, transport, public administration, arts, education and health services

² [UK statistics on waste 2019 update, Defra](#) (Table 5.2)

³ WWF, [A Plastic Future – Plastics Consumption and Waste Management in the UK March 2018](#)

⁴ [UK statistics on waste 2019 update, Defra](#) (Table 5.4)

⁵ Eunomia (commissioned by WWF), [A Plastic Future – Plastics Consumption and Waste Management in the UK](#), March 2018

Plastic packaging waste

UK

Official estimates of the UK's plastic packaging waste recycling rate are given opposite. The recycling/ recovery rate has increased in each year and are now more than double the minimum target of 22.5%.⁶

The data on the amount of packaging waste produced are industry estimates. Alternative estimates of plastic waste recycling use higher figures for the amount produced.

PLASTIC PACKAGING WASTE IN THE UK				
million tonnes				
	Produced	Recovered or recycled	% recycled/ recovered	
2012	2.55	0.64	25.2%	
2013	2.26	0.71	31.6%	
2014	2.22	0.84	37.9%	
2015	2.26	0.89	39.4%	
2016	2.26	1.02	44.9%	
2017	2.26	1.04	46.2%	

Source: [UK statistics on waste - February 2019 update](#)

A report by environmental consultants, Eunomia, estimated that the actual volume produced was around 3.5 million tonnes in 2015 with a possible range of 3.1-3.9 million tonnes. Their central estimate is more than 50% above the figure used in the Government statistics for 2015-2017. Around two-thirds of this waste is collected by local authorities, mainly from households. Their calculation includes an estimate of plastics in the general household waste stream. With this highest estimate of waste produced the resulting recycling rate falls to 23-29% in 2015.⁷

A 2018 report by the National Audit Office also questioned the Government's data on packaging waste. It said:

However, the Department's estimates of packaging recycling rates are not sufficiently robust. The Department does not adjust its figures to account for undetected fraud and error. In order to determine the amount of packaging that is recycled each year, the Department uses the data that reprocessors and exporters report when claiming recovery notes. While the Agency does correct this data when it finds problems, we do not consider it is realistic to assume that undetected fraud and error is negligible: there is a financial incentive for companies to over-claim, and a particular risk that some of the material exported overseas is not fully recycled...

We are concerned that the reported recycling rate for plastic packaging could be overstated, although not by enough to undermine achievement of the overall target.⁸

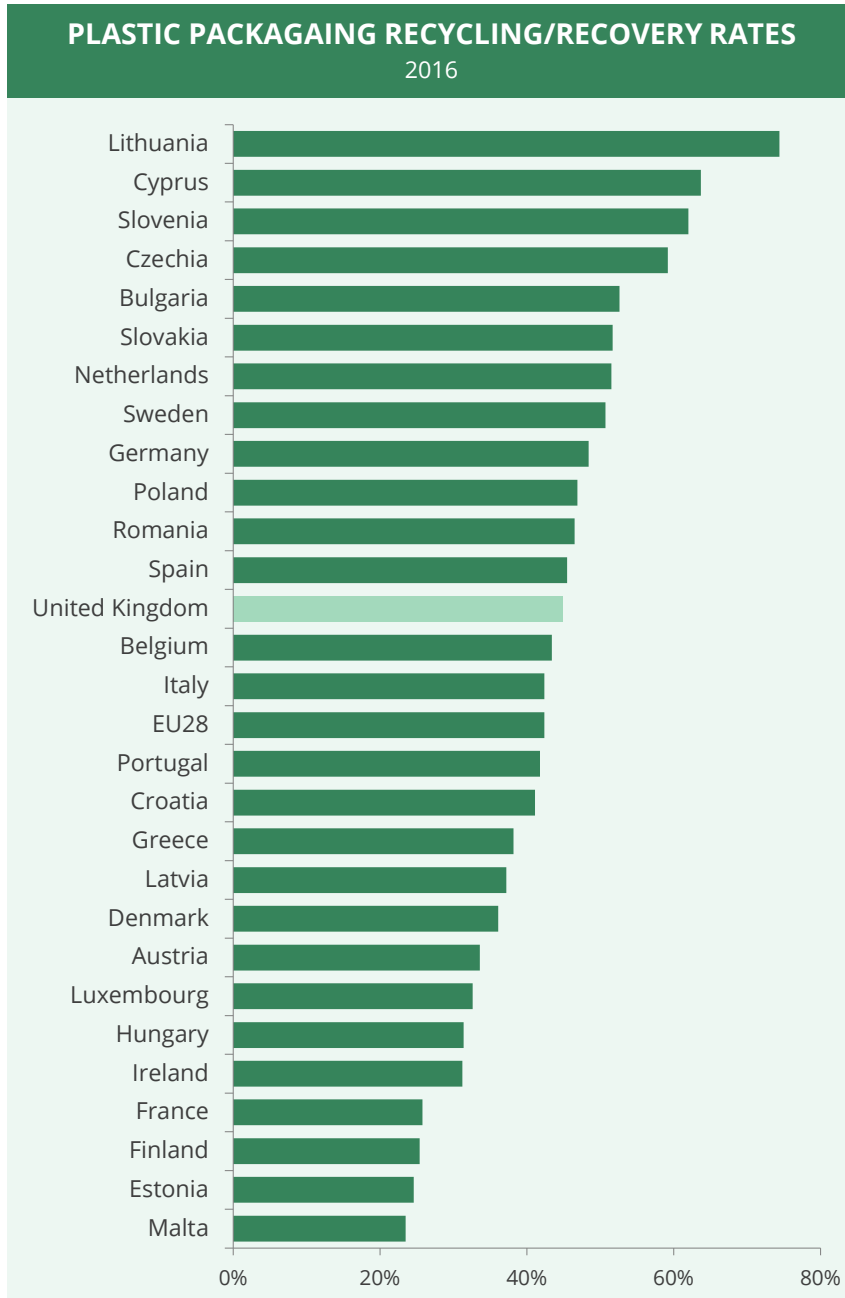
⁶ This minimum target stems from the EU Waste Framework Directive (2008/98/EC)

⁷ Eunomia, [Plastic Packaging – Shedding Light on the UK Data](#), March 2018

⁸ NAO, [The packaging recycling obligations](#), 23 July 2018, p6

EU

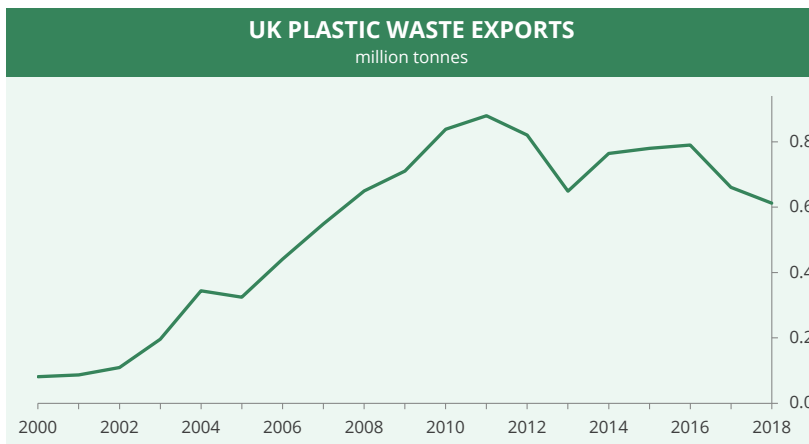
The chart below shows the latest plastic recycling rates for EU members. The UK's rate in 2016 was slightly higher than the EU average of 42.4%, but below levels in some larger Member States including Germany, Sweden and the Netherlands.⁹



⁹ EUROSTAT [Waste database](#) [downloaded on 27 February 2019]

Exports of plastic waste

In 2018 the UK exported 0.6 million tonnes of plastic waste. The amount exported increased rapidly in the decade to its 2011 peak of almost 0.9 million tonnes. The chart opposite shows that it has generally fallen since then. The 2018 level was the lowest for a decade.



Source: www.uktradeinfo.com

Until recently the most important destination for this was China/Hong Kong. Much of the expansion of waste exports went to China/Hong Kong and these exports accounted for more than 80% of the total in 2005 to 2012. They fell in importance after 2013, but were still the largest single destination in 2017 with 37% of the total. The decision by China to ban imports of certain types of waste for recycling from 2018 saw UK exports to China fall by almost 90%. In 2018 the most important export destinations were Malaysia (17%), Turkey (13%), Indonesia (12%) and China/Hong Kong (9%).¹⁰

¹⁰ HMRC [Build your own table webpage](#) [downloaded on 27 February 2019]

2. The environmental problems of plastic waste

The environmental implications of plastic pollution are wide-ranging. Plastic waste often does not decompose and so can last for centuries in landfill. Habitats are degraded when chemicals leach from plastic and animals suffer when getting caught in or having eaten plastic.¹¹

Energy use and emissions

A February 2019 Government consultation frames the environmental impact of plastic packaging in terms of the energy and emissions used to create new plastic:

Over 2 million tonnes of plastic packaging is used in the UK each year. The vast majority of this is made from new, rather than recycled plastic. Using new plastic typically has greater environmental impact: it requires unnecessary resource extraction and processing, with higher energy use and emissions than using recycled material. It also results in significant amounts of additional plastic waste on the market, which is generally sent to landfill or incinerated.¹²

A report from the circular economy charity, the Ellen MacArthur Foundation, provides more detailed estimates about the greenhouse gas emissions associated with plastic production and after-use treatment:

Greenhouse gas emissions. As pointed out above, plastic packaging can in many cases reduce the emission of greenhouse gases during its use phase. Yet, with 6% of global oil production devoted to the production of plastics (of which packaging represents a good quarter), considerable greenhouse gas emissions are associated with the production and sometimes the after-use pathway of plastics. In 2012, these emissions amounted to approximately 390 million tonnes of CO₂ [carbon dioxide] for all plastics (not just packaging). According to *Valuing Plastic*, the manufacturing of plastic feedstock, including the extraction of the raw materials, gives rise to greenhouse gas emissions with natural capital costs of USD 23 billion. The production phase, which consumes around half of the fossil feedstocks flowing into the plastics sector, leads to most of these emissions. The remaining carbon is captured in the plastic products themselves, and its release in the form of greenhouse gas emissions strongly depends on the products' after-use pathway. Incineration and energy recovery result in a direct release of the carbon (not taking into account potential carbon savings by replacing another energy source). If the plastics are landfilled, this feedstock carbon could be considered sequestered. If it is leaked, carbon might be released into the atmosphere over many (potentially, hundreds of) years.

This greenhouse gas footprint will become even more significant with the projected surge in consumption. If the current strong growth of plastics usage continues as expected, the emission of greenhouse gases by the global plastics sector will account for 15% of the global annual carbon budget by 2050, up from 1%

¹¹ HM Government, [Our Waste, Our Resources: A Strategy for England](#), December 2018, p22

¹² HM Treasury, [Plastic Packaging Tax: Consultation](#), 18 February 2019, p3

today. The carbon budget for the global economy is based on restricting global warming to a maximum increase of 2°C by 2100. Even though plastics can bring real resource efficiency gains and help reduce carbon emissions during use, these figures show that it is crucial to address the greenhouse gas impact of plastics production and after-use treatment.¹³

Human health and wellbeing

The Government Office for Science's Foresight [Future of the Seas: Final Report](#), March 2018, set out the environmental impact of coastal plastic pollution framed in terms of human health and wellbeing:

High levels of plastic pollution can affect health and wellbeing in several ways. Litter left or washed up on the coast can impact upon residents' quality of life by reducing recreational opportunities, and can deter coastal visitors. This reduces their access to the health benefits associated with outdoor activity, as well as potentially affecting the tourism industry. A recent EU-wide survey demonstrated that over 70 per cent of visitors noticed litter on either most or every visit to the coast. In the UK during 2010 around 40 per cent of local authorities undertook beach cleaning with annual costs in the region of £15.5 million. The uninhabited Henderson Island, one of the Pitcairn Islands, was recently found to have the highest density of man-made debris of anywhere in the world, with 99.8 per cent of it plastic. Coastal plastic litter can also increase the risk of bacterial pathogens such as *E. coli*. However there is currently no evidence that microplastics in seafood pose a threat to human health.¹⁴

Marine environment

The Government's 25 Year Environment Plan set out some of the environmental impacts of plastics in the marine environment:

Turtles choke on plastic bags because they mistake them for a jellyfish. Dolphins drown, tangled up in discarded plastic packaging. Albatrosses somehow find floating rice bags in the furthest reaches of the South Atlantic, far from human populations, and unwittingly feed them to their hungry chicks on the island of South Georgia. Millions of single-use bottles jostle their way around the oceans, carried on the currents even to the remotest and most fragile Pacific atolls. Latest estimates suggest that around 12 million tonnes of plastics enter the oceans each year. The annual cost of marine plastic pollution is estimated to be at least \$4.7 billion to the consumer goods industry alone.¹⁵

Further information about marine plastics is provided in later in this paper.

¹³ Ellen MacArthur Foundation, [The New Plastics Economy: Rethinking the future of plastics and catalysing action](#), 2016, p23

¹⁴ Government Office for Science, [Foresight, Future of the Seas: Final Report](#), March 2018, p80

¹⁵ HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), December 2018, p92

3. The benefits of plastic packaging

The British Plastics Federation's (BPF) position is that single use plastics have an important role to play in "modern life".¹⁶ It contends that plastics packaging saves resources and, "it is lighter, uses less energy and produces less greenhouse gas emissions than alternatives."¹⁷

A paper published by the BPF in 2018, [Plastic Packaging: Frequently Asked Questions](#) summarises some of the main benefits of plastic packaging as they identify them, as follows:

- Resource efficient
- Safe
- Hygienic
- Light weight
- Secure
- Durable
- Versatile
- Recyclable¹⁸

The BPF paper provides further information under each of these headings.

Food hygiene

An article on the [Foodmanufacture.co.uk](#) website cited comments from David McDowell, professor of food studies at Ulster University and Chairman of the UK advisory committee on the microbiological safety of food, expressing concern that proposals by the EU to restrict packaging and other items for serving food would lead to the spread of a number of foodborne virus and bacteria, such as salmonella and campylobacter. In particular, concern was highlighted about whether consumers' own packaging would be kept clean enough to limit bacteria growth and about the potential for cross contamination between products.¹⁹

Established recycling infrastructure

An article from [PackagingEurope](#) highlighted concern from waste recovery company, Veolia, that banning plastic packaging would lead to alternative types of packing being used which may also be a "challenge" to recycle.²⁰

Similarly, the oil company BP has argued that plastics may do less harm than alternative forms of packaging. In the BP Energy Outlook 2019, the

¹⁶ British Plastic Federation website, [Plastic Packaging and the Environment](#) [downloaded on 20 February 2018]

¹⁷ British Plastics Federation, [Plastic Packaging: Frequently Asked Questions](#), 2018

¹⁸ British Plastics Federation, [Plastic Packaging: Frequently Asked Questions](#), 2018, p4

¹⁹ [FoodManufactur.co.uk](#) "Food safety expert criticises EU packaging proposal" 2 October 2018

²⁰ Packaging Europe, [Mixed Reception to UK Government Plan](#), 12 January 2018

company said that in the case of a single use plastics ban overall energy consumption and emissions could increase, unless there was “widespread deployment of efficient collection and reuse systems” of alternative materials.²¹

Environmental cost of replacement material

In a 2016 report, environmental consultants Trucost highlighted that it is often the case that more of an alternative material is needed to perform the same function as any plastic that it is replacing:

The environmental cost of plastic in consumer goods is 3.8 times less than the alternatives materials that would be needed to replace plastic. Although alternative materials such as glass, tin, aluminum and paper are viable alternatives to plastic in many consumer goods applications, they have higher environmental costs in the quantities needed to replace plastic.

(...)

For example, a typical plastic soft drink bottle contains 30 grams of plastic. But if replaced by a weighted average mix of alternative materials currently used in the market, an equivalent capacity bottle would require 141 grams of alternative materials such as glass, tin or aluminum in the USA. Extrapolating to the entire consumer goods sector, over 342 Mt of alternative material would be needed to replace the 84 Mt of plastic used in consumer products and packaging in 2015.²²

Reduced weight and increased lifespan of products

The 2016 Trucost report also highlighted how plastics can bring environmental benefits by being lightweight and minimising food waste:

Some key examples include the lightweighting of automobiles and in the use of specialized packaging designs to minimize food waste. Trucost estimates that substitution of plastic components with alternative materials in passenger vehicles sold in the North America in 2015 would lead to an increase in lifetime fuel demand for those vehicles of over 336 million liters of gasoline and diesel, and at an environmental cost of \$2.3 billion. This equates to an environmental cost increase of \$169 per gasoline or diesel passenger car sold in North America in 2015.

Similarly, improved skin-type plastic packaging for sirloin steak can cut food waste by almost half compared to conventional plastic packaging (34% waste to 18% waste) with environmental savings of \$606 per metric ton of beef sirloin sold. This equates to environmental savings of over \$2.2 million for every additional 1% of sirloin steak sold in improved packaging in the USA. This case study illustrates the significant environmental net benefits that plastic food packaging can deliver where it helps to avoid the waste of resource intensive food products.²³

²¹ BP, [Energy Outlook 2019](#), p35

²² Trucost, [Plastics and Sustainability: A Valuation of Environmental Benefits, Costs and Opportunities for Continuous Improvement](#), 2016, p7

²³ Trucost, [Plastics and Sustainability: A Valuation of Environmental Benefits, Costs and Opportunities for Continuous Improvement](#), 2016, p10

4. Legal framework for dealing with waste

4.1 EU Waste Framework Directive

Current UK recycling policy is predominantly driven by the EU Waste Framework Directive ([2008/98/EC](#)) which provides the framework under which waste management policy is implemented throughout the EU. It also provides for 'daughter Directives' which deal with particular types of waste.

Although the Waste Framework Directive applies to the UK as a whole, waste is a devolved matter so the requirements are transposed into law in each UK national authority separately.

4.2 Waste management hierarchy

Box 1: What is a circular economy?

A circular economy means re-using, repairing, refurbishing and recycling existing materials and products and regarding waste as something that can be turned into a resource. It maximises the value of resources in order to benefit both the economy and the environment. This is in contrast to a linear "take-make-consume-dispose" model which assumes that resources are abundant, available and cheap to dispose.

The not-for-profit-organisation, the Waste and Resources Action Programme (WRAP) estimated that in 2010, the UK economy was 22% 'circular'. This figure has not been updated more recently. It estimated that by 2030, the UK economy's circularity could increase to 27% whilst also benefitting from a reduction in materials consumption of 30 million tonnes a year.²⁴

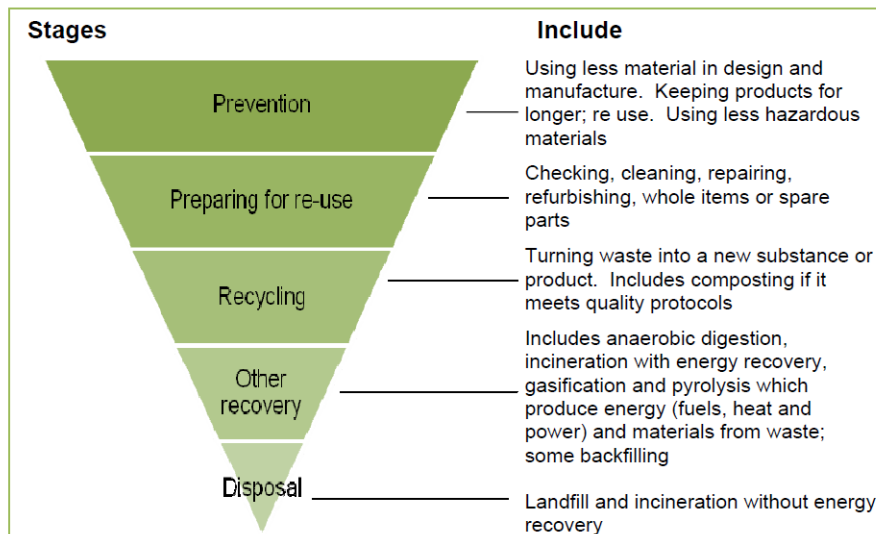
For further information about the circular economy concept see POSTnote, [Designing a Circular Economy](#), number 536, September 2016.

An overarching requirement of the EU Waste Framework Directive is that the UK applies the waste management hierarchy. This sets out the order of priority to apply to products and waste and shows that prevention and re-use options should be considered before recycling.²⁵ This is in line with moving towards the aims of a circular economy. The waste hierarchy is depicted by Defra as follows:²⁶

²⁴ House of Commons Environmental Audit Committee, [Growing a circular economy: Ending the throwaway society](#). Third Report of Session 2014-15, HC 214, 24 July 2014, para 8 [accessed 18 August 2015]

²⁵ EU Waste Framework Directive, Article 4

²⁶ Defra, [Guidance on applying the Waste Hierarchy](#), June 2011



4.3 EU Packaging Directive

Under the EU Waste Framework Directive, the UK also has a statutory producer responsibility regime for packaging, covering the whole of the supply chain from the raw material to the finished packaging. This is a way of incentivising packaging producers to take financial responsibility for the end recycling of their products. Packaging is any material used to hold, protect, handle, deliver or present goods. It covers a wide range of material beyond just plastic, encompassing paper, glass, aluminium, steel and wood.

This EU Directive sets minimum recovery targets (60%) and recycling targets (55%) for packaging waste, to be met by 31 December 2008, as well as material-specific recycling targets. These are 60% for glass, 60% for paper and cardboard, 50% for metals, 22.5% for plastics, and 15% for wood. Since 2008, Member States must continue to meet these minimum targets, but they have the freedom to set higher domestic targets if they so choose.²⁷

The UK Government implements the requirements of the Directive by placing a legal obligation on businesses over a certain size which make or use packaging, to ensure that a proportion of the packaging they place on the market is recovered and recycled. This known as an extended producer responsibility scheme (EPR) for packaging. It has been in place since 1997 and operates UK-wide under GB and parallel Northern Ireland regulations:

- The *Producer Responsibility Obligations (Packaging Waste) Regulations 2007* (no.871) (as amended) and the *Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 2007* (no. 198) (and amendments) cover the recycling and recovery of packaging waste (the Packaging Waste Regulations).

²⁷ HM Government, [UK Statistics on Waste](#), 14 February 2019, p7

- The *Packaging (Essential Requirements) (Amendment) Regulations 2015* (no.1640), cover single market and design and manufacturing aspects of packaging.

In 2017, 7,002 companies registered as having packaging obligations across the UK.²⁸ Relevant businesses discharge their responsibilities by collecting evidence of waste packaging recycling and recovery equivalent to the weight of their obligations from accredited reprocessors and exporters. Packaging Recovery Notes (PRNs) or Packaging Export Recovery Notes (PERNs) are issued by accredited businesses and provide the evidence for compliance.

More detailed information on the current rules on packaging producer responsibilities is provided on the GOV.UK website [Packaging waste: producer responsibilities](#).

Criticisms of the packing producer responsibility scheme in relation to plastic

British Plastics Federation

The [British Plastics Federation](#) (BPF) has expressed concern that the way the market for PRNs works has stagnated the UK plastics recycling industry and created a greater incentive for companies to seek PERNs, where plastic is exported overseas for recycling. This is because plastic waste is increasingly collected as comingled with other forms of waste. The costs faced by the overseas exporter/reprocessors for disposing of non-target contamination are apparently negligible compared to those experienced in the UK.²⁹

To skew the market back in favour of domestic recycling, the BPF has called for either a reform of the existing system to require more evidence of waste packing recycling to come from PRNs, rather than PERNs, or, (as its preferred option), a more radical reform to create a fund to ensure that money from producer responsibility goes towards developing the UK's plastic recycling industry.³⁰

Environmental Audit Committee

The Environmental Audit Committee examined the packaging producer responsibility scheme as part of its inquiry and December 2017 report on *Plastic bottles: Turning Back the Plastic Tide*. It noted that taxpayers, rather than producers, cover around 90% of the costs of packaging waste disposal, "indicating that the producer responsibility scheme is not working as it should."³¹ The Committee recommended that:

...the Government adapts a producer responsibility compliance fee structure that stimulates the use of recycled plastic, rewards design for recyclability, and increases costs for packaging that is difficult to recycle or reuse. This would incentivise producers to use more sustainable packaging, whilst reducing the costs on

²⁸ National Audit Office, [The packaging recycling obligations](#), 23 July 2018

²⁹ British Plastics Federation Recycling Group, [Proposals for Growth of the UK Plastics Recycling Sector in a Circular Economy](#), March 2017

³⁰ British Plastics Federation Recycling Group, [Proposals for Growth of the UK Plastics Recycling Sector in a Circular Economy](#), March 2017

³¹ House of Commons Environmental Audit Committee, [Plastic bottles: Turning Back the Plastic Tide](#), First Report of Session 2017–19, 22 December 2017, para 47

taxpayers. Additionally we recommend that the Government lower the de minimis packaging handling threshold from 50 tonnes to 1 tonne. This would ensure that all businesses who handle a significant amount of packaging are obligated to recycle.

The Committee also called for the Environment Agency (EA) to be given greater regulatory control and for waste processors to be held accountable to the EA for how they spend packaging revenue.³²

National Audit Office

The National Audit Office (NAO) also examined the packaging recycling obligations, in response to a request from the Environmental Audit Committee, and published a report on 23 July 2018, [The packaging recycling obligations](#). It highlighted that there were no checks to ensure exported material actually was recycled and that there were risks of fraud and error within the current system:

While there are questions about the exact scale of packaging recycling, it is clear that rates have increased over the lifetime of the packaging obligation system, and the system itself is likely to have made a contribution to this change. However, the system appears to have evolved into a comfortable way for government to meet targets without facing up to the underlying recycling issues. The government has no evidence that the system has encouraged companies to minimise packaging or make it easy to recycle. And it relies on exporting materials to other parts of the world without adequate checks to ensure this material is actually recycled, and without consideration of whether other countries will continue to accept it in the long-term. Despite it now being 20 years since the system was established, the Department does not know what value the system has added nor whether the Agency's approach to tackling the risks of fraud and error is proportionate. Our overall sense is that over a long period government has allowed the obligations to keep rolling forward without asking the important questions.³³

UK Government's response and proposed reform

The [Government's response](#)³⁴ to the Environmental Audit Committee's report and the [25 year environment plan](#)³⁵ both set out an aim to reform the EPR scheme for packaging. In the December 2018 [Resources and Waste Strategy for England](#), the Government set out its own criticisms of the current system of extended producer responsibility for packaging:

The current system, however, does not sufficiently incentivise design for greater reuse or recyclability and less than a tenth of the costs of managing household packaging waste is covered by producers. Our reforms will change this, and the full net costs will be covered.

³² House of Commons Environmental Audit Committee, [Plastic bottles: Turning Back the Plastic Tide](#), First Report of Session 2017–19, 22 December 2017, para 47–48

³³ National Audit Office (NAO), [The packaging recycling obligations](#), 23 July 2018, p11

³⁴ House of Commons Environmental Audit Committee, [Plastic bottles: Turning Back the Plastic Tide: Government Response to the Committee's First Report, Fourth Special Report of Session 2017–19](#), 26 February 2018, p6

³⁵ HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), January 2018, p87

(...)

Demand from reprocessors for recyclable materials is not being stimulated sufficiently and there are concerns that the current system favours the export of packaging waste for recycling. It is also not comprehensive enough, lacks transparency, and falls short of our new objectives.³⁶

To address this, the Government set out a series of reforms for “immediate priority”.³⁷ To address the shortcomings identified, the strategy proposed:

- Measures incentivise the reduction of unnecessary and difficult to recycle packaging, the production of packaging that can be recycled, and the recycling of packaging back into the same or similar products provided there is no conflict with other policies such as food hygiene requirements.
- Producers fund the management of packaging at the end of its life. Subject to consultation, this may include: collection, recycling, disposal, reduction of littering and fly-tipping, communications, data collection and reporting, compliance monitoring and enforcement.
- Collection of a nationally agreed set of packaging materials for recycling, adoption of minimum service standards and delivery of good quality recycle.
- It is easier for consumers to know what packaging they can recycle through the adoption of mandatory labelling on packaging and improved communications (funded by producers).
- Export of packaging waste is done in an environmentally responsible way and that there is a level playing field between accredited domestic reprocessors and exporters. We will consult on actions to better manage and control waste exports, including through tighter monitoring and enforcement of existing export regulations. We want to ensure that our exports do not have adverse impacts on human health and the environment when shipped overseas, and that domestic reprocessors are not unfairly disadvantaged by waste exports which do not meet our environmental and accreditation standards.

We will also review the effectiveness of the Packaging (Essential Requirements) Regulations 2015 by the end of 2020 and will reform them to make them more effective.³⁸

The Government published a consultation, [Reforming the packaging producer responsibility system](#) on 18 February 2019, seeking views on the above proposals. As the packaging waste producer responsibility scheme is operated on a UK-wide basis to date, the consultation is being undertaken jointly by the UK, the Scottish and the Welsh governments and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland.³⁹ It closes on 13 May 2019.

³⁶ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p34

³⁷ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p34

³⁸ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p35

³⁹ HM Government, [Consultation on reforming the UK packaging producer responsibility system](#), 18 February 2019, p7

In terms of timing of the reforms, the consultation stated the aim of having a new system in place from 2023:

The EU Circular Economy Package (Article 8a) establishes minimum operating requirements applicable to any EPR scheme. For existing producer responsibility schemes, it requires EU Member States to transpose these requirements into national law by the end of 2022. Government's intention is to make the necessary legislative changes for a reformed packaging producer responsibility system by 2021, with a new system to be operational from 2023. This will allow businesses two years to transition and adapt their activities to comply with the reformed regulations.⁴⁰

⁴⁰ HM Government, [Consultation on reforming the UK packaging producer responsibility system](#), 18 February 2019, p19

5. Overarching Government strategies on waste and resources

UK Government

The Government's most recent strategy on waste and resources was published in its December 2018 publication, [Our waste, our resources: a strategy for England](#) ("the Resources and Waste Strategy"). This Strategy sets out the Government's ambition to move towards a more circular economy, to "become a world leader in using resources efficiently and reducing the amount of waste we create as a society."⁴¹ It also set out the "strategic ambition" to "...work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025."⁴²

This follows on from and is intended to support commitments made in other documents, such as the January 2018 25 Year Environment Plan, [A Green Future: Our 25 Year Plan](#) to leave the environment in a better condition for the next generation and, in particular:

- Working towards our ambition of zero avoidable waste by 2050
- Working to a target of eliminating avoidable plastic waste by end of 2042.⁴³

The term "avoidable" is defined in the Resources and Waste Strategy as:

... when the plastic could have been reused or recycled; when a reusable or recyclable alternative could have been used instead; or when it could have been composted or biodegraded in the open environment.⁴⁴

The Government's April 2017 [Litter Strategy for England](#) also set an ambition to become "one of the most resource efficient countries in the world"⁴⁵, and contained specific proposals to reduce plastic litter.

Wales

The Welsh Government's 2010 document [Towards Zero Waste](#) (TZW) is the overarching waste strategy document for Wales. It is supported by a suite of sector plans and other documents, which together with TZW, comprise the statutory waste management plan for Wales.

Accompanying documents can be found on the [Welsh Government website](#).

⁴¹ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p7

⁴² HM Government, [Our waste, our resources: a strategy for England](#), Decr 2018, p17

⁴³ HM Government, [A Green Future: Our 25 Year Plan](#), January 2018, p29

⁴⁴ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p7

⁴⁵ Defra, [Litter Strategy for England](#), April 2018, p19

Scotland

The Scottish Government launched Scotland's first [Zero Waste Plan](#) in June 2010, which sets out the Scottish Government's vision for a zero waste society. The plan set out a number of new measures including introducing a 70% recycling target for *all* waste (regardless of its source) by 2025.

Northern Ireland

The [Delivering Resource Efficiency - Northern Ireland Waste Management Strategy](#), 2013, includes sections on resource re-use and recycling.

The Department of Agriculture, Environment and Rural Affairs published [The Waste Prevention Programme for Northern Ireland – The Road to Zero Waste](#), in September 2014, which set out a renewed focus on waste prevention (including re-use), preparing for re-use and recycling in accordance with the waste hierarchy.

6. Next steps: Government proposals on plastic waste

The sections below set out specific commitments, proposals and policies in relation to dealing with plastic waste. Where there are similar policies from the devolved administration Governments, these are also highlighted. Policies relating specifically to marine plastic waste are set out separately in section 9 below.

6.1 A “plastic packaging tax”

UK Government

In March 2018 the UK Government published a call for evidence, [Tackling the plastic problem: using the tax system or charges to address single-use plastic waste](#). The purpose of this was to “explore how changes to the tax system or charges could be used to reduce the amount of single-use plastics we waste in order to deliver better environmental outcomes”.⁴⁶ A [summary of responses to the call for evidence](#) was published in August 2018.

At Budget 2018, the Government announced that it would introduce a tax, in England, on the production and import of plastic packaging, from April 2022. This is intended to address the situation that it is often cheaper to use new, non-recycled plastic material, despite its greater environmental impact.⁴⁷ Further context and information was provided in an accompanying HM Treasury budget briefing on [Single Use Plastics](#).

HM Treasury published a [Plastic packaging tax: consultation](#) on 18 February 2019. The proposals for a plastic packaging tax were summarised as follows:

1.9 The government proposes that the tax would apply to all plastic packaging manufactured in the UK and unfilled plastic packaging imported into the UK. It would only apply to plastic packaging (as defined by the tax) with less than 30% recycled content. This consultation seeks views on whether this is the most appropriate scope of the tax in comparison to other options.

1.10 The definition of plastic packaging for the specific purposes of applying the tax would be set out in legislation.

1.11 Where there is one manufacturer involved in the manufacturing process the tax would be applied when the packaging product or component, such as a tub, tray or bottle, is made available for use or onward sale. This consultation seeks views on the most appropriate tax point where there are multiple manufacturers involved in a process.

1.12 For imported, unfilled plastic packaging, the tax would be charged when liable products are imported into the UK and released onto the UK market as plastic packaging or plastic packaging material which will be used to make plastic packaging.

⁴⁶ HM Treasury, [Tackling the plastic problem: using the tax system or charges to address single-use plastic waste](#), March 2018, p6

⁴⁷ HM Treasury, [Budget 2018](#), 29 October 2018, paras 3.56-3.57

Unfilled plastic packaging that is exported would not be subject to the tax.

1.13 The tax would be charged on the full weight of the packaging product, at a flat rate set per tonne of packaging material.

1.14 Currently within 'The Producer Responsibility Obligations (Packaging Waste) Regulations 2007' (as amended), converters are businesses which convert 'packaging materials' into 'packaging' and are the types of businesses likely to be liable for the tax.

1.15 Not all converters will be liable for the tax; throughout this consultation those obligated to pay the tax will be referred to as 'liable manufacturers'.⁴⁸

The consultation also sets out the UK Government's intention for this tax to be UK-wide:

1.16 The tax would be UK-wide, but the government is committed to engaging closely with the devolved administrations on its design. The government intends to share relevant responses to this consultation with devolved administrations.⁴⁹

6.2 Packaging producer responsibility reform

As set out in section 4.3 (above), the Government has committed to reforming the extended producer responsibility system for packaging. In February 2019 it published a joint-Government consultation, [Consultation on reforming the UK packaging producer responsibility system](#). The intention is for there to be a UK-wide reform of the system.

6.3 Disposable cups levy

UK Government

In a January 2018 report, the Environmental Audit Committee highlighted the difficulties in recycling disposable cups; they are made from paper and lined with plastic, which makes them waterproof and this plastic lining cannot be removed by most recycling facilities. The Committee recommended that the Government introduced a minimum 25 pence levy on disposable cups, with the rationale that the levy would change customer habits.⁵⁰

The Government, in its Budget 2018 document, ruled out a levy on disposable cups, for the time being:

3.59 Disposable cups – The government recognises the problems caused by disposable cups, which are difficult to recycle and often littered. The government has concluded that a levy on all cups would not at this time be effective in encouraging widespread reuse. Businesses are already taking steps to limit their environmental impact, but the government expects industry to go further and will return to the issue if sufficient progress is not made. In the meantime, the government will look in the

⁴⁸ HM Government, [Plastic packaging tax: consultation](#), February 2019, p4-5

⁴⁹ HM Government, [Plastic packaging tax: consultation](#), February 2019, p5

⁵⁰ House of Commons Environmental Audit Committee, [Disposable Packaging: Coffee Cups, Second Report of Session 2017–19](#), 5 January 2018, para 68

Resources and Waste Strategy at the best way to tackle the environmental impact of cups.⁵¹

Joint UK country consultations

In February 2019 consultations were published on reforming the packaging producer responsibility system and on introducing a deposit return system, both of which contained proposals relating to disposable cups.

The **UK-wide** [Consultation on reforming the UK packaging producer responsibility system](#) proposed that disposable cups could be encompassed within the extended producer responsibility system for packaging as a way of incentivising producers of these cups to fund systems for their collection:

Disposable cups are in scope for the measures set out in this consultation document. They could be accommodated within either a deposit approach or a modulated fee structure. Producers could have the flexibility to establish their own collection systems and determine how best to maximise the collection and recycling of disposable cups. Alternatively producers could be set a recycling target and invited by government or the producer management organisation to put forward their plans for meeting this target. Producers would fund the collection system directly and be responsible for achieving the target. Under such an arrangement the modulated fee structure for disposable cups would need to take this into account but it would be reasonable to expect producers to contribute to other EPR costs such as data/reporting and communications.⁵²

The consultation on introducing a deposit return scheme, which would apply in **England, Wales, Scotland and Northern Ireland**, sought views on whether disposable cups should be included within a deposit return scheme. It stated:

There are a number of reprocessing facilities that can recycle disposable cups in the UK, with enough capacity and facilities to recycle all plastic lined paper cups for coffee currently used in the UK. It is unclear if this capacity could cover paper cups used for other beverage types. Disposable cups, however, are not routinely collected for recycling, though some businesses are beginning to take steps to increase facilities for collection. There is therefore justification for including disposable cups in a DRS and it would be possible to do so, which could see recycling rates of these containers increase.⁵³

Welsh Government

In addition to its participation in the above two consultations, the Welsh Government website states that “We are exploring a Welsh tax on

⁵¹ HM Treasury, [Budget 2018](#), 29 October 2018, para 3.59

⁵² HM Government, [Consultation on reforming the UK packaging producer responsibility system](#), 18 February 2019, p52

⁵³ HM Government, [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), February 2019, p23

disposable single use cups to reduce their use, encourage re-use, and reduce the litter they can create.”⁵⁴

6.4 Proposed ban on single-use plastic

UK Government

At the Commonwealth Heads of Government Summit in April 2018, the UK Government announced its intention to ban the sale of plastic straws, drink stirrers and plastic-stemmed cotton buds in England.⁵⁵ It stated that in order to eliminate these items from use, it would work with industry to develop alternatives and to ensure there was sufficient time to adapt.⁵⁶

In October 2018, the Government published a [Consultation on proposals to ban the distribution and/or sale of plastic straws, plastic - stemmed cotton buds and plastic drink stirrers in England](#). This consultation was accompanied by a selection of impact assessments. The ban would come into force at some point between October 2019 and October 2020, subject to the views collected during consultation.⁵⁷ The Government has not yet responded to the consultation. A summary of responses and Government response is expected at the end of March 2019.⁵⁸

Welsh Government

A BBC News article reported that the Welsh Government said it would "welcome collaboration with the UK government" on the idea.⁵⁹

Scottish Government

On 27 April 2018, the Scottish Government published a consultation on [a proposal to ban the manufacture and sale of plastic-stemmed cotton buds in Scotland](#). The [Consultation Response](#) was published on 30 July 2018. The Response confirmed that, "We want to deliver on the commitment to develop policy to address marine plastics with new legislation to take action on one of Scotland's most common pieces of beach litter, plastic-stemmed cotton buds."⁶⁰

The Scottish Government's [Programme for Scotland 2018-2019](#), confirmed its intention to ban plastic-stemmed cotton buds "in the

⁵⁴ Welsh Government website, [Developing new Welsh taxes](#), 28 June 2018 update version

⁵⁵ HM Government press release, [UK Government rallies Commonwealth to unite on marine waste](#), 18 April 2018

⁵⁶ HM Government press release, [UK Government rallies Commonwealth to unite on marine waste](#), 18 April 2018

⁵⁷ HM Government, [Government launches plan to ban plastic straws, cotton-buds, and stirrers](#), 22 October 2019

⁵⁸ Gov.UK [Single use plastic: banning the distribution and/or sale of plastic straws, stirrers and plastic-stemmed cotton buds in England](#) [downloaded on 25 February 2019]

⁵⁹ BBC News "[Plastic straws: Welsh Government would 'welcome collaboration' on ban](#)" 19 April 2018

⁶⁰ Scottish Government, [Plastic Cotton Bud Submission: Consultation Response Report](#), July 2018, p3

coming year”, and highlighted its appointment of an expert panel to consider other measures on other types of single-use plastic items.⁶¹

In June 2018 the Scottish Government announced that communities would be able to bid for a share of up to £500,000 to reduce single-use plastics, through an initiative called Action on Zero Plastic Waste Towns.⁶²

6.5 Deposit return scheme for drinks containers

Box 2: What is a deposit return scheme?

In a deposit return scheme, consumers are charged a sum of money as deposit up-front when they buy a drink in a single-use container. This can be redeemed when the empty container is returned. In existing schemes in other countries consumers can either return containers through a reverse vending machine or manually to a retailer to redeem the deposit value.⁶³

UK Government

In April 2017, the UK Government published a [Litter Strategy for England](#), which included a commitment to establish a working group to consider the advantages and disadvantages of different types of deposit and reward and return schemes for drinks containers.⁶⁴ On 2 October 2017 the government [invited views](#) on how reward and return schemes for drinks containers could work in England by issuing a call for evidence.

On 28 March 2018 the Government confirmed it would introduce a deposit return scheme in England for single use drinks containers (including plastic, glass and metal).⁶⁵ Alongside this announcement the Government published the report of the Voluntary & Economics Incentives Working Group: [Voluntary and economic incentives to reduce littering of drinks containers and promote recycling](#). The December 2018 Resources and Waste Strategy for England then set out the Government’s preference for a UK-wide DRS scheme.⁶⁶

England, Wales and Northern Ireland consultation

In February 2019 the UK and Welsh Governments, alongside the Department of Agriculture, Environment and Rural Affairs in Northern Ireland published a [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#). In terms of what could be included within a deposit return system (DRS) the consultation proposed a broad range of drinks containers could be included within its scope:

⁶¹ Scottish Government, [Delivering for today, investing for tomorrow: the Government’s programme for Scotland 2018-2019](#), 4 September 2018, p59

⁶² Scottish Government press release, [Support to reduce single-use items](#), 18 June 2018

⁶³ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p61

⁶⁴ HM Government, [Litter Strategy for England](#), April 2017, p34

⁶⁵ HM Government press release, [Deposit return scheme in fight against plastic](#), 28 March 2018

⁶⁶ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p61

This consultation proposes that the materials included in a DRS could be PET and HDPE plastic bottles, steel and aluminium cans, and glass bottles. We are proposing that a broad range of drinks, including water, soft drinks, juices, alcohol, and milk-containing drinks, where they are sold in containers made of these materials, could be included in a DRS. We would not propose including milk (or plant-based drinks such as soya) within scope of a DRS as it is considered by many as an essential product which is only widely available in containers.⁶⁷

The Government has proposed a deposit level of 15 pence per container.⁶⁸ The consultation also seeks views on two possible options for how a DRS could work, based on the size of the drinks containers:

We are considering two options for a DRS, both of which would cover the same materials and drinks outlined above, but would differ in terms of the size of the drinks containers in scope. We are also seeking opinions on whether there are alternative approaches we could consider.

The first option, known as the **'all-in' model**, would not place any restrictions on the size of drinks containers in-scope of a DRS. This would target a large amount of drinks beverages placed on the market. The second option, known as the **'on-the-go' model**, would restrict the drinks containers in-scope to those less than 750ml in size and sold in single format containers. This model would target drinks beverages most often sold for consumption outside of the home (while 'on-the-go').⁶⁹

While the all-in model would encompass a wider range of plastic products on the market, the argument in favour of the on-the-go model is that it would focus the scheme on the most commonly littered items, excluding larger items that are more commonly recycled anyway. For both options, the assumed start date of the scheme would be 2023.⁷⁰

The consultation proposes that all producers of drink beverage products that would fall within the scope of a DRS would be mandated to join it. Drinks containers within a DRS could be returned either via an automated return point using a reverse vending machine (RVM), or via a manual return point that could be hosted by small retailers and involve containers being returned over-the-counter.⁷¹

The scheme's operation would be managed by a central body, the Deposit Management Organisation (DMO), which would be funded by fees paid by producers and revenue obtained from collected DRS material sent on for recycling. There would also be an enforcement

⁶⁷ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p6

⁶⁸ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p54

⁶⁹ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p7

⁷⁰ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p54

⁷¹ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p7

body, separate to the DMO, which the consultation proposes could be the Environment Agencies in England, Wales and Northern Ireland.⁷²

The consultation document also suggests that an “alternative to introducing a DRS” would be for all drinks containers to be captured under a reformed extended producer responsibility system packaging:

The aim of this would be to ensure producers obligated under a DRS would also be incentivised to change manufacturing processes and product design as a result of being obligated under the reformed packaging producer responsibility system. In this case, provisions would need to be made to ensure that producers obligated under a DRS would not be unfairly disadvantaged by a ‘double-charge’ under both systems.⁷³

The consultation closes on 13 May 2019.⁷⁴

Scottish Government

The Scottish Government asked Zero Waste Scotland⁷⁵ to explore the feasibility of a deposit return scheme. In May 2015, it published a feasibility study (carried out by environmental consultancy, Eunomia), looking at the benefits and challenges of a deposit return system in Scotland, and in the same year carried out a call for evidence on the issue from stakeholders. The relevant documents are available from the [Zero Waste Scotland website](#).

On 27 June 2018 the Scottish Government published a consultation on a [Deposit Return Scheme for Scotland](#). The consultation sought views on the options for distinct elements of a deposit return scheme on beverage containers, seeking views on “which options will deliver the best results for Scotland.”⁷⁶ The consultation sought views on questions including:

1. how much the deposit should be;
2. where people could return items; and
3. what sort of materials and products should be included.

The Scottish Government has not yet issued a response.

In the Scottish Government’s Programme for Scotland 2018-19, it confirmed plans to design a deposit return scheme.⁷⁷

6.6 Single use carrier bags charge

A five pence charge came into effect on single use carrier bags in England on 5 October 2015. The charge in England, which is paid by

⁷² [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p47

⁷³ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p28

⁷⁴ [Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland](#), 18 February 2019, p66

⁷⁵ A resources organisation funded by the Scottish Government and the European Regional Development Fund

⁷⁶ Scottish Government website, [A Deposit Return Scheme for Scotland](#) [downloaded on 10 October 2018]

⁷⁷ Scottish Government, [Delivering for today, investing for tomorrow: the Government's programme for Scotland 2018-2019](#), 4 September 2018, p59

customers to retailers, follows the introduction of similar levies in other parts of the UK. Wales, Northern Ireland and Scotland introduced a 5 pence levy on single use carrier bags in 2011, 2013 and 2014 respectively. The purpose of each single use carrier bag charge is to reduce the number of bags given out, increase their re-use and reduce litter. The *Climate Change Act 2008* and the *Climate Change (Scotland) Act 2009* provide the legislative framework for the single use carrier bag charge.

In Northern Ireland, from 19 January 2015, the levy was extended to all carrier bags with a retail price of less than 20 pence, whether they are considered single use or reusable.⁷⁸

For further information about the charges across the UK see Library briefing paper, [Plastic bags – the single use carrier bag charge](#).

UK Government

The current carrier bag charge legislation in England applies the charge only to retailers with over 250 employees. There is no such restriction in the other UK countries. In the 25 Year Environment Plan the Government said that it would consider extending uptake of the 5 pence plastic bag charge in England to small retailers, initially through voluntary agreement.⁷⁹

On 27 December 2018, the Government published a [Consultation on extending the Single-use Carrier Bag Charge in England to all retailers and on increasing the minimum charge to 10p](#).⁸⁰ It proposes to amend regulations to extend the single use carrier bags charge to all retailers and to increase the charge to 10 pence with effect from January 2020. In respect of the raising the charge to 10 pence, the Government forecasts the following reduction in supply of carrier bags:

39. However, by increasing the charge to 10p we forecast a 90% reduction in supply of single use carrier bags by large retailers in the first year. Small retailers are expected to see an initial reduction of 23%, gradually falling to 90% in the third year. Total consumption of 521 million single use carrier bags is estimated in year three and for this to then remain constant. This compares with current consumption estimated at 4.5 billion (see Table 9 of Impact Assessment).⁸¹

The Consultation closed on 22 February 2019.

⁷⁸ Northern Ireland Department of Agriculture, Environment and Rural Affairs website, [Northern Ireland carrier bag levy statistics](#) [downloaded on 12 February 2019]

⁷⁹ HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), January 2018, page 29

⁸⁰ HM Government, [Consultation on the proposal to extend the Single-use Plastic bag charge to all retailers and to increase the minimum charge to 10p](#), December 2018

⁸¹ HM Government, [Consultation on the proposal to extend the single-use carrier bag charge to all retailers and to increase the minimum charge to 10p](#), December 2018, p6

6.7 Funding to reduce plastic waste

Plastics Research and Innovation Fund (PRIF)

In the Spring Statement 2018, the Chancellor announced a £20 million “plastics research and innovation fund.”⁸² Further information about its operation was set out in the Resources and Waste Strategy:

We pledged £20 million to the Plastics Research and Innovation Fund (PRIF – co-ordinated by Innovate UK and EPSRC) which aims to reduce the environmental costs of plastic and litter. Our sights are set on problematic plastics such as cigarette filters and chewing gum, which contain single-plastic polymers, and blight our streets and seas.

The fund will seek to deliver strategic networking and research that will coordinate existing knowledge across the UK, catalysing new ideas and rapid solutions. It will support the polymer, packaging, retail and waste sectors as well as local government responsible for waste collection.

UKRI will work with WRAP to network and connect this fund with initiatives across business, government and the research and innovation community, to encourage knowledge exchange, and to identify future research and innovation priorities. Funded activities will be focused around developing solutions to reduce plastics entering our environment, funding for smart waste tracking data collection, storage and reporting services, for smart local energy systems, and for technology which advances the UK’s low carbon automotive capability.⁸³

In January 2019, the Government announced a new competition to offer UK businesses simultaneous public and private funding to tackle plastic waste, part of which comes from the PRIF.⁸⁴ The first part of the funding competition invites applications from projects that “reduce plastic waste and pollution of wider environment and promote a circular economy.”⁸⁵ For further information about this funding see the Innovate UK blog, [The Plastics Age](#), 12 February 2019.

Plastics and Waste Investment Fund

At Budget 2018, a further £20 million of funding was announced, to complement the PRIF: “£10 million more for plastics R&D, and £10 million to pioneer innovative approaches to boosting recycling and reducing litter, such as smart bins.”⁸⁶ The Resources and Waste Strategy set out further how it would work:

£10 million will complement the PRIF, focusing on research and development to help business transition away from polluting plastics. This will include exploration of new packaging materials, new recycling processes and packaging waste management. The other £10 million will pioneer innovative approaches to boosting recycling and reducing litter. This funding will be made available during the 2019/20 financial year.⁸⁷

⁸² [Spring Statement 2018: Philip Hammond's speech](#), 13 March 2018

⁸³ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p127

⁸⁴ HM Government, [New investment for businesses to tackle ocean plastics crisis](#), 11 January 2019

⁸⁵ Ibid

⁸⁶ HM Government, [Budget 2018](#), October 2018, p65

⁸⁷ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p128

7. EU Circular Economy Package

On 2 December 2015, the European Commission adopted a new [Circular Economy Package](#) to stimulate Europe's transition towards a circular economy (see box 1 above, "What is a circular economy?")

The Circular Economy Package consisted of:

- an EU Action Plan for the Circular Economy
- a timetable setting out when the actions will be completed (set out in an Annex to the Action Plan); and
- adoption of a number of interconnected legislative proposals which relate to waste legislation, including a:
 - Proposed Directive on Waste
 - Proposed Directive on Packaging Waste
 - Proposed Directive on Landfill
 - Proposed Directive on Electrical and Electronic Waste

The EU Circular Economy Package was formally agreed by the European Council on 22 May 2018, the final stage that it needed to pass.⁸⁸

The package includes new targets for recycling of municipal waste and of packaging waste, as follows:⁸⁹

Recycling targets for municipal waste:

By 2025	By 2030	By 2035
55%	60%	65%

It also included new recycling targets for various different types of packaging waste. For plastic packaging this is 50% by 2025 and 55% by 2030. This is an increase from the previous 2008 target of 22.5%.⁹⁰

For further information and links to the new Directives see EU Commission press release, "[Circular Economy: New rules will make EU the global front-runner in waste management and recycling](#)" 22 May 2018.

On 4 March 2019 the European Commission adopted a report on the implementation of the Circular Economy Action Plan.⁹¹ This sets out how actions under the plan have been delivered or are being implemented.

The UK Government's December 2018 Resources and Waste Strategy for England set out its intention to explore "more stretching targets" following Brexit:

⁸⁸ EU Commission press release, "[Circular Economy: New rules will make EU the global front-runner in waste management and recycling](#)" 22 May 2018

⁸⁹ EU Commission press release, "[Circular Economy: New rules will make EU the global front-runner in waste management and recycling](#)" 22 May 2018

⁹⁰ Article 11(3) EU Waste Framework Directive 2008/98/EC

⁹¹ European Commission, [Closing the loop: Commission delivers on Circular Economy Action Plan](#), 4 March 2019

The EU (Withdrawal) Act 2018 will ensure existing EU environmental law continues to have effect in UK law after we leave the EU, providing businesses and stakeholders with maximum certainty. This includes any commitments from the Circular Economy Package (CEP) in relation to waste and recycling that are part of UK legislation when we leave.

(...)

As we implement and deliver this Strategy we will explore whether more stretching targets, over and above those proposed by the EU, can be developed that will deliver the most effective approach to recycling. These won't just target weight but will also consider the environmental impacts of waste, though in doing so will ensure that the frequency and scope of household waste collections is not undermined. Should they be preferable, we will present proposals to the UK Parliament following the UK's departure from the EU.⁹²

7.1 A European Strategy for Plastics in a Circular Economy

Action on Plastics was identified as a priority in the 2015 Circular Economy Action Plan. A [European Strategy for Plastics in a Circular Economy](#) was adopted by the European Commission on 16 January 2018. A press release to accompany its adoption set out the ambition that "all plastic packaging on the EU market will be recyclable by 2030, the consumption of single-use plastics will be reduced and the intentional use of microplastics will be restricted."⁹³

The EU Strategy examines ways to stimulate secondary markets for recycled plastic, alongside possible legislative and fiscal measures to make all plastic packaging recyclable by 2030. A full list of measures proposed in the Strategy and their proposed timelines are provided in [Annexes](#) to the Plastics Strategy. These are also summarised in the Commission's brochure, [A European Strategy for plastics in a circular economy](#).

As part of the Strategy, the Commission published a [Proposal for a Directive on the reduction of the impact of certain plastic products on the environment & Annex](#). The new rules will introduce the following [bold retained from press release source]:

- **Plastic ban in certain products:** Where alternatives are readily available and affordable, single-use plastic products will be banned from the market. The ban will apply to **plastic cotton buds, cutlery, plates, straws, drink stirrers and sticks for balloons** which will all have to be made exclusively from more sustainable materials instead. Single-use **drinks containers** made with plastic will only be allowed on the market if their caps and lids remain attached;
- **Consumption reduction targets:** Member States will have to reduce the use of plastic **food containers and drinks cups**. They can do so by setting national reduction

⁹² HM Government, [Waste and Resources Strategy for England](#), December 2018, p113

⁹³ EU Commission, [Plastic Waste: a European strategy to protect the planet, defend our citizens and empower our industries](#), 16 January 2018

targets, making alternative products available at the point of sale, or ensuring that single-use plastic products cannot be provided free of charge;

- **Obligations for producers:** Producers will help cover the costs of waste management and clean-up, as well as awareness raising measures for **food containers, packets and wrappers (such as for crisps and sweets), drinks containers and cups, tobacco products with filters (such as cigarette butts), wet wipes, balloons, and lightweight plastic bags**. The industry will also be given incentives to develop less polluting alternatives for these products;
- **Collection targets:** Member States will be obliged to collect 90% of single-use *plastic drinks bottles* by 2025, for example through deposit refund schemes;
- **Labelling Requirements:** Certain products will require a clear and standardised labelling which indicates how waste should be disposed, the negative environmental impact of the product, and the presence of plastics in the products. This will apply to **sanitary towels, wet wipes and balloons**;
- **Awareness-raising measures:** Member States will be obliged to raise consumers' awareness about the negative impact of littering of single-use plastics and fishing gear as well as about the available re-use systems and waste management options for all these products.⁹⁴

In December 2018, the European Parliament and the Council of the European Union reached a provisional political agreement on the proposal.⁹⁵ On 27 March 2019 the European Parliament voted to agree the Directive on Single Use Plastic proposed by the Commission.⁹⁶ The next steps for the Directive are set out as follows, it is expected to come into force from 2021:

Following this approval by the European Parliament, the Council of Ministers will finalise the formal adoption. This endorsement will be followed by the publication of the texts in the Official Journal of the Union. The Member States will then have two years to transpose the legislation into their national law.⁹⁷

The implications of this for the UK will depend on the speed at which the proposal progresses through the European institutions and the outcome of the Brexit negotiations. In the UK Government's December 2018 Resources and Waste Strategy it supported the EU's proposals:

The actions listed in the EU's plastics strategy and its proposed Directive on reducing the impact of certain plastic products on the

⁹⁴ European Commission Press Release, [Single-use plastics: New EU rules to reduce marine litter](#), 28 May 2018

⁹⁵ European Commission, [Single-use plastics: Commission welcomes ambitious agreement on new rules to reduce marine litter](#), 19 December 2018

⁹⁶ European Commission Statement, [Circular Economy: Commission welcomes European Parliament adoption of new rules on single-use plastics to reduce marine litter](#), 27 March 2019

⁹⁷ European Commission Statement, [Circular Economy: Commission welcomes European Parliament adoption of new rules on single-use plastics to reduce marine litter](#), 27 March 2019

environment are broadly consistent with Government policy in this area. The UK supports this initiative and welcomes the EU in following our lead and recognising the importance of addressing plastic pollution. We will match or where economically practicable exceed the Directive's ambition.⁹⁸

⁹⁸ HM Government, [Our waste, our resources: a strategy for England](#), Dec 2018, p22

8. Other plastics initiatives

There are a number of initiatives aimed at changing the way that plastics are designed, produced, used, re-used, disposed of and reprocessed in the UK, examples of which are set out below.

8.1 The Plastics Pact

The Waste and Resources Action Programme (WRAP) coordinates a the “Plastics Pact” which is a collaboration which brings together businesses from across the plastics value chain, including a number of supermarkets, retailers and manufacturers. This has set a target to eliminate unnecessary single-use plastic packaging, for all plastic packaging to be re-usable, recyclable or compostable and for 70% to be recycled or composted by 2025. Further information about the pact and pledges taken by different companies are available from the [WRAP website](#).

8.2 Plastics Industry Recycling Action Plan

The [Plastics Industry Recycling Action Plan](#) (PIRAP), established in June 2015, is an industry action plan which aimed initially to increase the recycling of plastics to meet a 57% plastic packaging recycling target by 2017. This target has now been extended to 2020. Initiatives in the plan include: increased collection of recyclable plastics; improved sorting; and developing end markets for recycled plastics. PIRAP is implemented by the British Plastics Federation, PlasticsEurope and recycling charity Recoup, with the support of WRAP.

8.3 The UK Circular Plastics Network (UKCPN)

The UK Circular Plastics Network (UKCPN) aims to bring together plastic product users through a programme of networking and knowledge-sharing events and related support activities. The idea is that this will create a community of stakeholders, to examine the best means for reducing plastic waste entering the environment. UKCPN is an activity supported by UK Research and Innovation, and forms part of the Plastics Research Innovation Fund (PRIF). Specifically, UKCPN aims to facilitate the following:

- Eliminating the volume of plastic waste arising from within the UK.
- Raising awareness and sharing best practice to improve the rate of UK plastic recycling.
- Sharing best practice to reduce levels of confusion amongst citizens and highlighting user-centred design.
- Showcasing innovation that is focused on reducing the amount of plastic ending up in the environment.⁹⁹

⁹⁹ [UK Circular Plastics Network website](#) [downloaded on 19 February 2019]

8.4 Personal food containers

An increasing number of businesses have started to provide for customers to bring their own containers for food products. For examples, see the zero waste blog "[Shop Zero Waste: UK-Wide Stores](#)". The Supermarket Morrisons also has a blog about how customers can bring their own containers to use at meat and fish counters: "[Bring your own container to Market Street](#)".

Many coffee chains now actively offer a discount on takeaway hot drinks when people bring in their own reusable cups. See for example:

- [How can Pret encourage more customers to bring a reusable cup?](#),¹⁰⁰
- Costa website, [Our cups](#);¹⁰¹
- Starbucks website, [Get Recycling! And Get Rewarded](#).¹⁰²

8.5 Changing plastic packaging

Rather than allowing customers to bring in their own containers, some supermarkets are focussing their efforts on reducing packaging and ensuring that packaging that cannot be reduced is more easily and widely recyclable. For example, supermarket Waitrose has stated:

In July we announced a commitment that will make a major impact on the use of plastic in our packaging. By 2025 all our own-label packaging will be widely recyclable (using the widely recycled logo), reusable, or home compostable.

We believe there is a role that recyclable plastic can play with some products - to protect during transportation and to prevent food waste, which is why we are not planning to remove it entirely from our ranges.

Our commitment is a stretching target, but we are determined to achieve it through a mix of innovation and working with suppliers to change how we package the products we sell.¹⁰³

The supermarket Iceland has also announced that it will remove plastic packaging from its own label products by 2023.¹⁰⁴

An article from the [Metro.co.uk](#) lists some of the initiatives for changing and reducing plastic packaging announced by a number of different supermarkets.¹⁰⁵

¹⁰⁰ [How can Pret encourage more customers to bring a reusable cup?](#), Blog by Clive Schlee, CEO of Pret, 6 December 2017

¹⁰¹ Costa website, [Our cups](#) [accessed 12 February 2019]

¹⁰² Starbucks website, [Get Recycling! And Get Rewarded](#) [accessed 12 February 2019]

¹⁰³ Waitrose website, [Innovating in packaging](#) [accessed 11 September 2018]

¹⁰⁴ [Iceland](#) website "It's time to put a freeze on plastics", 16 January 2018

¹⁰⁵ Metro.co.uk, [We grilled the major UK supermarkets on what they're doing to reduce plastic waste](#), 5 July 2018

9. Plastic in the marine environment

Effect of plastic in the marine environment

Plastic and other forms of litter can be harmful to marine life. The main threats come from marine creature becoming entangled in litter or ingesting it. A 2015 [review of the literature](#) from Plymouth University found that:

- Plastic accounted for 92% of encounters between litter and marine life reported in the literature.
- At least 17% of species threatened by entanglement or ingestion of marine litter were listed as threatened or near-threatened species.¹⁰⁶

The durability of plastic poses a particular problem. When littered, it can last centuries in the natural environment, where wildlife can become entangled in plastic or ingest small pieces of it.¹⁰⁷ Plastics can eventually degrade into micro-plastics, which can then enter the food chain. A 2018 Government press release stated that there are over 150 million tonnes of plastic in the world's oceans and that every year one million birds and over 100,000 sea mammals die from eating and getting tangled in plastic waste.¹⁰⁸

In 2017 the Government published a report it commissioned as part of the Government Office for Science "Foresight" Future of the Sea project, [Future of the sea: plastic pollution](#). This report summarised some of the harmful effects of plastic in the marine environment as follows:

Plastic pollution can be harmful to wildlife, human well-being and to the economy in the UK, its Overseas Territories (OTs) and internationally. There is extensive evidence that entanglement in, or ingestion of, plastics can cause injury and death to a wide range of marine organisms, including commercially important fish and shellfish. Plastic pollution is also hazardous for mariners and reduces the amenity value of coastlines necessitating costly ongoing clean-up operations. In addition, there are emerging concerns of potential negative consequences for human well-being, but currently there is a lack of evidence on which to base firm conclusions here. The effects of small particles of micro and nano-sized plastic debris are not fully understood, but these particles could present different types of impact to those described for larger items.

Plastics are persistent contaminants and while there is uncertainty about the absolute quantity currently in the environment, it is

¹⁰⁶ Gall, S. C. & Thompson, R. C. (2015), [The impact of debris on marine life](#). Marine Pollution Bulletin 92, 170-179

¹⁰⁷ HM Government, [Tackling the plastic problem: using the tax system or charges to address single-use plastic waste](#), March 2013, p8-9

¹⁰⁸ HM Government press release, [UK Government rallies Commonwealth to unite on marine waste](#), 18 April 2018

clear that in the absence of any actions both the quantity and the associated impacts will increase.¹⁰⁹

A study reported in the journal [Nature](#) examined how deep sea organisms were ingesting microfibrils in a natural setting. It also set out further work that is needed to examine the impact on ecosystems.¹¹⁰

For further background information see POST Note [Marine Microplastic Pollution](#) 05 June 2016.

Extent of plastic in the marine environment

A [study published in Science in 2015](#) estimated that around 8 million tonnes of plastic is released into the ocean each year. There is some uncertainty around this estimate: authors report that the figure is likely to be between 4.8 and 12.7 million tonnes.¹¹¹

The BBC [reported on this study in 2017](#) and published a map, available online, showing which nations contribute the most plastic waste. The map also shows the location of gyres: areas of the ocean with circular currents that trap floating debris. The study estimated that Asian countries including China, Indonesia and the Philippines are some of the biggest contributors.¹¹²

There are also discrepancies around the percentage of total marine litter that is made up from plastics. In 2016 the [UN Environment Programme](#) estimated that plastics make up as much as 95 per cent of the marine litter found on coastlines, sea surface, and the ocean floor.¹¹³ The 2017 Foresight report estimated that around 70 per cent of all the litter in the oceans is made of plastic.¹¹⁴

Another Foresight publication, [Future of the Seas: Final Report](#), from March 2018 estimated that plastic in the ocean is projected to treble between 2015 and 2025, without further intervention.¹¹⁵

Sources of plastic in the marine environment

A 2016 briefing paper by the Imperial College London's Grantham Institute, [The ocean plastic pollution challenge: towards solutions in the UK](#), set out that 80% of plastic pollution originates from land-based

¹⁰⁹ Foresight, Government Office for Science, [Future of the sea: plastic pollution](#), 3 August 2017, p4

¹¹⁰ "Plastic microfibre ingestion by deep-sea organisms" M. L. Taylor, C. Gwinnett, L. F. Robinson & L. C. Woodall, [Nature.com](#), 30 September 2016

¹¹¹ Jambeck et al (2015), *Plastic waste inputs from land into the ocean*. Science 347 (6223), 768-771

¹¹² BBC News, [Seven charts that explain the plastic pollution problem](#), 10 December 2017

¹¹³ UN Environment Programme, [Marine Litter Legislation: A Toolkit for Policymakers](#), 2016, p2

¹¹⁴ Foresight, Government Office for Science, [Future of the sea: plastic pollution](#), 3 August 2017, p4

¹¹⁵ Foresight, Government Office for Science, [Future of the Seas: Final Report](#), March 2018, p11

sources with the remainder coming from ocean-based sources.¹¹⁶ It lists the following as land based sources of ocean plastic pollution:

- Illegal dumping and inadequate waste management;
- Industrial activity;
- Insufficiently filtered wastewater;
- Coastal littering;
- Discharge of storm water;
- Combined Sewer Overflows (CSOs); and
- Natural disasters.¹¹⁷

Further information about each of these bullet headings is provided in the briefing. Marine based sources of plastic pollution are listed as fishing, shipping and offshore oil and gas platforms, undersea exploration.¹¹⁸

Microfibres

The shedding of microfibres from clothes and textiles is also thought to be a source of marine plastic pollution. Synthetic textiles, such as polyester, polyamide and acrylic can contain plastic. The plastic most commonly used in textiles is polyethylene terephthalate (PET) or polyester.¹¹⁹

An “Evaluation of microplastic release caused by textile washing processes of synthetic fabrics” was published in 2017 in the journal *Environmental Pollution*.¹²⁰ The researchers used an electron microscope to count how many fibres had been released after a wash. They found the number of microfibres released from a typical 5kg wash load of polyester fabrics was estimated to be over 6,000,000 depending on the type of detergent used.¹²¹ The article concluded that

...the amount and size of the released microfibres confirm that they could not be totally retained by wastewater treatment plants, and potentially affect the aquatic environment.¹²²

¹¹⁶ Van Sebille, et al. (July 2016), [The ocean plastic pollution challenge: towards solutions in the UK](#). Grantham Inst., Briefing paper No 19.

¹¹⁷ Van Sebille, et al. (July 2016), [The ocean plastic pollution challenge: towards solutions in the UK](#). Grantham Inst., Briefing paper No 19.

¹¹⁸ Van Sebille, et al. (July 2016). [The ocean plastic pollution challenge: towards solutions in the UK](#). Grantham Inst., Briefing paper No 19.

¹¹⁹ Environmental Audit Committee, [Fixing fashion: clothing consumption and sustainability](#), 19 February 2019, p31

¹²⁰ De Falco, F., et al., [Evaluation of microplastic release caused by textile washing processes of synthetic fabrics](#), *Environmental Pollution* (2017), <https://doi.org/10.1016/j.envpol.2017.10.057>

¹²¹ De Falco, F., et al., [Evaluation of microplastic release caused by textile washing processes of synthetic fabrics](#), *Environmental Pollution* (2017), <https://doi.org/10.1016/j.envpol.2017.10.057>

¹²² De Falco, F., et al., [Evaluation of microplastic release caused by textile washing processes of synthetic fabrics](#), *Environmental Pollution* (2017), <https://doi.org/10.1016/j.envpol.2017.10.057>

9.1 Domestic policies to tackle marine plastic waste

While the policies set out in section 6 may have a bearing on reducing the amount of waste entering the seas and oceans, Governments in UK countries also have specific policies aimed at marine plastics, as well as specific funding commitments.

Microbeads ban

A [joint-UK consultation](#) was completed in February 2017 to investigate a ban on the use of plastic microbeads in cosmetics and personal care products in the UK, and called for evidence on other sources of microplastics entering the marine environment. This was also the subject of a 2016 Environmental Audit Committee inquiry and report, [Environmental impact of microplastics](#) which had recommended a ban on microbeads from bathroom products.¹²³

On 9 January 2018 the UK Government introduced a ban on the manufacture of products containing microbeads.¹²⁴ A ban on the sale of products containing microbeads followed later in 2018 in England, Scotland and Wales as follows:¹²⁵

- In England by the [Environmental Protection \(Microbeads\) \(England\) Regulations 2017](#) (No.1312).
- In Scotland by the [Environmental Protection \(Microbeads\) \(Scotland\) Regulations 2018](#) (No.162).
- In Wales by the [Environmental Protection \(Microbeads\) \(Wales\) Regulations 2018](#) (No151).

Litter Strategies

UK Government

In April 2017, the UK Government published a [Litter Strategy for England](#), which contained a section called Litter in Context – Aquatic and Marine Litter, which set out a number of Government, business and community initiatives to tackle issues to do with marine litter. In particular, it highlighted Defra's role in microplastic research:

Defra plays an active role in advising and influencing marine litter and microplastics research, and is a member of the Marine Litter Action Network, which works with stakeholders from various sectors to raise awareness of the sources and problems associated with marine litter. We endorse and support a range of initiatives such as the MARLISCO project, the Seafish Responsible Fishing Scheme and Operation Clean Sweep to improve education around marine litter.¹²⁶

¹²³ House of Commons Environmental Audit Committee, [MPs urge Government to ban microbeads in cosmetics](#), 24 August 2016

¹²⁴ HM Government, [World-leading microbeads ban takes effect](#), 9 January 2018

¹²⁵ HM Government, [World-leading microbeads ban takes effect](#), 9 January 2018

¹²⁶ HM Government, [Litter Strategy for England](#), April 2017

Scottish Government

The Scottish Government published [A Marine Litter Strategy for Scotland](#) in August 2014. The aim of the strategy is to help realise the vision of “clean, healthy, safe, productive and biologically diverse marine and coastal environment that meets the long term needs of people and nature”.¹²⁷ [Scotland’s National Marine Plan](#) underpins this Strategy and includes marine planning policy to ensure measures are taken to address marine litter.

The Scottish Government also supports the Keep Scotland Beautiful [Upstream Battle campaign](#), which is also supported by a number of plastics industry organisations. This campaign aims to prevent litter from entering the seas by working with communities by conducting litter surveys and clean ups along rivers and tributaries.

Welsh Government

In October 2018 the Welsh Government announced its support for a new research project into marine litter led by Keep Wales Tidy.¹²⁸ The project will deliver actions from the [Marine Litter Action Plan for Wales \(2018-2020\)](#), which aims to help tackle marine litter and maintain or achieve Good Environmental Status in sea waters by 2020 under the EU Marine Strategy Framework Directive.

Microfibres

In the 2018 Resources and Waste Strategy, the Government said that it had commissioned research to better understand “how plastic particles from a range of sources including synthetic materials enter waterways and the marine environment, and to analyse their impact.”¹²⁹

The Environmental Audit Committee 19 February 2019 report, [Fixing fashion: clothing consumption and sustainability](#) recommended the establishment of a new Extended Producer Responsibility (EPR) scheme (a policy approach where producers are given responsibility—be it financial and/or physical—for the treatment or disposal of products they put on the market), to reduce textile waste, with a one penny charge per garment on producers.¹³⁰ The Government responded to this recommendation in a [Defra in the Media blog](#) piece, also on 19 February 2019, to say that “We are developing proposals for extended producer responsibility (EPR) for textiles and other priority waste streams, so that producers are responsible for the full net costs of managing their products at the end of their useful life, and to encourage greater reuse and recycling.”¹³¹

9.2 International cooperation

The UK Government is also involved at an international level with a number of initiatives to tackle ocean plastics. The sections below

¹²⁷ Scottish Government, [A Marine Litter Strategy for Scotland](#) in August 2014, p2

¹²⁸ Welsh Government, [New marine litter project launched](#), 19 October 2018

¹²⁹ HM Government, [Waste and Resources Strategy for England](#), December 2018, p42

¹³⁰ Environmental Audit Committee, [Fixing fashion: clothing consumption and sustainability](#) 19 February 2019, para 131

¹³¹ [Defra in the Media blog](#) “Coverage of the Environmental Audit Committee report into ‘fast fashion’” 19 February 2019

highlight examples of some of these international agreements and policies. The aim of many of these is to raise awareness and commit other countries to taking action to reduce plastic waste. Many of the UK's actions to meet these international agreements are through the policies outlined in section 6 of this paper.

Commonwealth Clean Oceans Alliance

The issue of ocean plastic was raised at the Commonwealth Heads of Government meeting in April 2018. The Government reported Commonwealth countries had been urged to sign-up to the newly formed Commonwealth Clean Oceans Alliance and take action to eliminate avoidable plastic waste.¹³²

Further information about the Commonwealth Clean Oceans Alliance is available from the International Institute for Sustainable Development (IISD) website which sets out how the initiative supports other international agreements:

The Commonwealth Clean Oceans Alliance represents an agreement among the UK, Ghana, Sri Lanka, New Zealand and Vanuatu to jointly tackle marine plastic. The countries have pledged to ban microbeads in personal care products and rinse-off cosmetics and to cut plastic bag use by 2021. The Alliance aims to drive action on SDG 14 (life below water) and to encourage other Commonwealth countries to sign up to and implement international agreements to protect the ocean, including the UN Clean Seas campaign, the Global Ghost Gear Initiative and the London Protocol.¹³³

UN Sustainable Development Goal 14

The [United Nations 2030 Agenda for Sustainable Development](#) is a “plan of action for people, planet and prosperity” consisting of 17 Sustainable Development Goals. [UN Sustainable Development Goal \(SDG\) 14](#) aims to “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”. In September 2015, 193 Member States, including the UK, adopted this Agenda and committed themselves to working “tirelessly for the full implementation of this Agenda by 2030”.

SDG14 includes the target of:

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Further information about SDG 14 and progress on it can be found on the [UN Sustainable Development Knowledge Platform](#). In December 2017 the UK Government published a report, [Implementing the Sustainable Development Goals](#), which provides further information about the ways that the Government is supporting the delivery of the SDGs (including SDG 14).

¹³² HM Government, [UK Government rallies Commonwealth to unite on marine waste](#), 18 April 2018

¹³³ International Institute for Sustainable Development (IISD) website, [Commonwealth Clean Oceans Alliance Supports SDG 14 Achievement](#), 17 April 2018

UN Clean Seas Campaign and the Global Partnership on Marine Litter

The United Nations Environment Programme (UNEP) [#CleanSeas Campaign](#) was launched in February 2017 with the aim of “engaging governments, the general public, civil society and the private sector in the fight against marine plastic litter.”¹³⁴ The UK Government has signed up to this campaign.¹³⁵

The campaign contributes to the goals of the [Global Partnership on Marine Litter](#) (GPA) a voluntary open-ended partnership for international agencies, governments, businesses, academia, local authorities and non-governmental organisations hosted by the UN Environment Programme:

The GPA is the only global intergovernmental mechanism directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems.

It aims to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities.

UNEP hosts the GPA Coordinating Unit and coordinates some activities in support of the programme. Intergovernmental Review Meetings are organized every 5 years to review the progress made by countries in the implementation of the GPA through their respective National Action Plans.¹³⁶

UN resolution on marine litter and microplastics

In December 2017, the UK Government reported that the UK was one of the 193 UN Member States to sign a resolution, [Marine Litter and Microplastics](#) (UNEP/EA.3/Res.7), to help reduce the amount of plastic in the world's seas.¹³⁷ Under the agreement, an international taskforce will advise how to combat marine litter. Among other things, the Resolution:

- *Stresses* the importance of long-term elimination of discharge of litter and microplastics to the oceans and of avoiding detriment to marine ecosystems and the human activities dependent on them from marine litter and microplastics;
- *Urges* all actors to step up actions to “by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution”;
- *Encourages* all member States, based on best available knowledge of sources and levels of marine litter and microplastics in the environment, to prioritize policies and

¹³⁴ Clean Seas website, [About](#) [downloaded on 6 March 2019]

¹³⁵ [Written question HL670: Lord Hylton 11-07-2017v](#)

¹³⁶ GPA website, [Why does addressing land-based pollution matter?](#) [downloaded on 20 February 2019]

¹³⁷ HM Government news story, [Global commitment at United Nations Assembly to reduce pollution](#), 7 December 2017

measures at the appropriate scale to avoid marine litter and microplastics from entering the marine environment;¹³⁸

The resolution also decides to establish an “ad hoc expert group to further examine the barriers to and options for combating marine plastic litter and microplastics from all sources, especially land-based sources”, and “to convene at least one meeting, but no more than two meetings, before the fourth session of the United Nations Environment Assembly, including enabling the participation of developing countries”. The fourth session is expected to take place from 11-15 March 2019.

An article from the Independent reported that there had been dissent from some countries to putting specific reduction targets into the resolution:

A United Nations agreement that would have called for specific, internationally-agreed goals to tackle plastic waste in our oceans has been rejected by the US.

Several countries, including China and India, also refused to include in the resolution a call on nations to adopt any reduction targets, but US officials “were clearly leading the discussion on this”, a source at the UN Environment Assembly in Nairobi told The Independent.

Countries did agree that the world needs to stop plastics from entering the sea, but the final resolution published on Wednesday has no timetable and is not legally binding.¹³⁹

Following the session, the UK Government issued a press release to welcome the resolution.¹⁴⁰

The IMO “London Protocol”

The “Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972”, (the “London Convention”), was one of the first global conventions to protect the marine environment from human activities and has been in force since 1975. In 1996, the “London Protocol” was agreed to further modernise the Convention and, eventually, replace it. Under the Protocol all dumping is prohibited, except for possibly acceptable wastes on a “reverse list”. The Protocol entered into force on 24 March 2006 and there are currently 51 Parties to the Protocol.¹⁴¹

The objective of the London Convention and Protocol is to promote the effective control of all sources of marine pollution. Contracting Parties “shall take effective measures to prevent pollution of the marine environment caused by dumping at sea” (see articles I and II of the Convention and article 2 of the Protocol).

¹³⁸ United Nations Environment Assembly, [Marine Litter and Microplastics](#) (UNEP/EA.3/Res.7), 30 January 2018

¹³⁹ The Independent “[UN resolution calling for targets to tackle ocean plastic waste rejected by US, China and India](#)”, 7 December 2017

¹⁴⁰ Gov.uk press release, [Global commitment at United Nations Assembly to reduce pollution](#), 7 December 2017

¹⁴¹ IMO website, [Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter](#) [downloaded on 6 March 2019]

Further information about the London Protocol is available on the [IMO website](#).

OSPAR Regional Action Plan on marine litter

The UK is an active participant in OSPAR (the Oslo and Paris Convention for the protection of the marine environment of the North-East Atlantic). This is a collaborative effort with neighbouring countries to address marine litter.

The OSPAR objective with regard to marine litter is “to substantially reduce marine litter in the OSPAR maritime area to levels where properties and quantities do not cause harm to the marine environment”, by 2020. To fulfil this objective OSPAR 2014 agreed a [Regional Action Plan \(RAP\) for Marine Litter](#) for the period 2014-2021. The RAP contains 55 collective and national actions which aim to address both land based and sea based sources.

Further information is available on the OSPAR Commission website on [Marine Litter](#).

9.3 Other marine plastic initiatives

There are many other initiatives outside Government, from environmental groups, NGOs, the plastics industry and other bodies that aim to deal with the problem of plastic in the marine environment.

Examples of some of these include:

- The [Marine Litter Action Network](#) (MLAN), which brings together 60 organisations across different sectors to tackle the issue of marine litter.
- [Operation clean sweep](#): a plastics industry initiative which aims to help plastic resin handling operations implement good housekeeping and pellet, flake, and powder containment practices.
- [Surfers Against Sewage](#), a campaign group with an aim to stop plastic pollution at source and clean up beaches.
- [Plastic Oceans](#), an organisation which organises awareness initiatives on plastic pollution.
- [Sky Ocean Rescue](#), a campaign to find innovative solutions to the problem of ocean plastics.

10. Other plastics issues

10.1 Overseas export bans on plastic waste

On 18 July 2017, China notified the World Trade Organisation (WTO) that it intended to ban four classes and 24 kinds of solid waste by the end of 2017.¹⁴² The ban includes all plastics scrap as well as other types of waste.

In a January 2018 written statement, the Government provided information about the levels of plastic waste sent to China and about the implications of this ban for the UK:

On 1 January 2018 China imposed a ban on the import of certain types of waste including mixed paper and post-consumer plastics (plastics thrown away by consumers). In addition, some other types of waste, including all other paper and plastics exports, will have to meet a reduced acceptable contamination level of 0.5% from March 2018.

China's decision has a global impact, including in the UK. 3.7 million tonnes of plastic waste are created in the UK in a single year. Of that total, the UK exports 0.8 million tonnes to countries around the world, of which 0.4 million tonnes is sent to China (incl. Hong Kong). In comparison, other countries including Germany (0.6 million tonnes), Japan and the US (both 1.5 million tonnes) export more plastic to China for reprocessing than the UK.¹⁴³

The written statement also set out the Government's steps taken in relation to the ban:

Since China announced its intentions on 18 July 2017, ministers have worked with industry, the Environment Agency, WRAP, the devolved administrations and representatives from local government to understand the potential impact of the ban and the action that needs to be taken. We have engaged internationally to understand the scale and scope of China's waste restrictions. The UK Government raised the issue with the EU in September. Alongside four other members, the EU subsequently questioned the proposals at the WTO in October.

Domestically, the government and the Environment Agency took steps last year to ensure that operators were clear on their duties to handle waste in light of China's proposals. The Environment Agency issued fresh guidance to exporters, stating that any waste which does not meet China's new criteria will be stopped, in the same way as banned waste going to any other country. There is evidence that some operators have already been finding alternative export markets in response to the Chinese restrictions. Data for the third quarter of last year showed increases in exports of plastics to Turkey, Taiwan, Vietnam and Malaysia and increases in exports of paper to Turkey, Taiwan and Vietnam.¹⁴⁴

The Government's February 2019 consultation on *Consistency in household and business recycling collections in England* set out how other countries in South East Asia had also banned recovered plastics

¹⁴² WTO [notification G/TBT/N/CHN/1211](#) 18 July 2017

¹⁴³ [Waste: Written statement - HCWS391 8 January 2018](#)

¹⁴⁴ [Waste: Written statement - HCWS391 8 January 2018](#)

from overseas, with indications that other countries may also follow suit:

During the first 5 months of 2018, the most notable increases in UK plastics exports in absolute terms went to Malaysia, Vietnam and Turkey. Trade data available for this period showed a doubling in UK exports of plastic to Indonesia (up to 10kt in May).

The export market for recyclables continues to be characterised by instability and price volatility. Apart from restrictions on waste imports announced by China, concern is growing that other economies in South East Asia will also introduce waste import restrictions in the near future. In late June 2018, the government of Thailand banned all recovered plastics from entering its ports. It joined Vietnam and Malaysia who announced temporary bans on the import of plastics, after being overwhelmed by the volume of recovered recyclables being diverted their way following the restrictions on Chinese waste imports.¹⁴⁵

The consultation document also set out how this “instability” had created a “challenge” for local authorities in finding end destinations for recycled materials, which in turn has increased recycling costs:

The ongoing instability in recycling export markets is proving to be a challenge for English local authorities and the difficulties in finding end destinations is putting a strain on the financial viability of recyclables collections from households. In a recent survey of English local authorities undertaken by the LGA, some of the councils that have been most impacted by the recent China waste import bans warned that their recycling costs have increased by £500,000 on average over the last year as a result of the restrictions.¹⁴⁶

10.2 Unrecyclable plastics

Black plastic

As a briefing from the Waste and Resources Action Programme (WRAP) sets out, black plastic packaging has carbon black pigments which absorb infra-red light and cannot be optically sorted by equipment using near infra-red detection technology. As a result, black plastic packaging commonly ends up as residue and is disposed of in landfill or recycled into lower value materials where polymer sorting is not required. See WRAP website, [Recyclability of black plastic packaging](#).

The WRAP website sets out the work being done to improve the recyclability of black plastics and prevent these materials from going to landfill. Technical solutions have been found to solve the problem with the black plastic, but this requires further investment and support to prove its operational and economic viability in full scale commercial conditions.

Black plastic is commonly used because the colour is often considered the most visually appealing for the presentation of many food items.

¹⁴⁵ HM Government, [Consultation on consistency in household and business recycling collections in England](#), February 2019, p42-3

¹⁴⁶ HM Government, [Consultation on consistency in household and business recycling collections in England](#), February 2019, p43

Some retailers however have recognised black plastic as a problem and have made pledges to reduce it. Waitrose for example, has pledged to stop using black plastic trays by the end of 2019 and other retailers have made similar commitments.¹⁴⁷

In September 2017, it was reported in the specialist packaging press that a voluntary commitment had been made by packaging manufacturers, packers, retailers and brands, material reprocessors and trade associations to enable the sustainable recycling of all black plastic packaging bottles, pots, tubs and trays by the end of 2018.¹⁴⁸

Low grade/ mixed plastics

Packaging for food can be made from a variety of polymers – molecules which make up plastic – which need to be separated out to remove “low grade” and non-recyclable polymers such as polystyrene. This can either make it very difficult and expensive to recycle or can render an item technically unrecyclable. Local Government Association (LGA) analysis published on 4 August 2018 highlighted that:

LGA analysis suggests that only a third of plastic used by households is able to be recycled. It found 525,000 tonnes of plastic pots, tubs and trays are used by households a year but just 169,145 tonnes of this waste is able to be recycled.

The LGA is calling for manufacturers to work with councils and develop a plan to stop unrecyclable packaging from entering the environment in the first place. (...)

In addition to developing a plan that ensures recyclable packaging is used where possible, councils are calling on the Government to consider a ban on low-grade plastics, and for producers and manufacturers to contribute to the cost of collection or disposal.

Councils have done all they can to tackle this issue, with 99 per cent of councils collecting plastic bottles for recycling and 77 per cent collecting pots, tubs and trays, but the inclusion of these challenging polymers in so much packaging is making it extremely difficult for councils.

In order to increase recycling rates, it's essential that manufacturers prevent materials entering the environment which hamper recycling efforts. Alternatives to the packaging saturated in polymers which are challenging to recycle could include cardboard, paper or a recyclable version of pots. For instance, if margarine tubs were made out of the same material as plastic water bottles, they would be recyclable.¹⁴⁹

¹⁴⁷ For further information see “Why black plastic is hard to recycle and why Waitrose has pledged to stop using it” [I News](#), 19 January 2018.

¹⁴⁸ “Industry sets deadline for recycling of black plastic packaging” [Packaging News](#), 27 September 2017

¹⁴⁹ LGA, [Two-thirds of plastic in packaging pots and trays is unrecyclable](#), 4 Aug 2018

10.3 Terminology and standards: bioplastics, biodegradable and compostable plastic

In July 2018 WRAP published a guide, [Understanding plastic packaging and the language we use to describe it](#). The guide sets out how the way a plastic is designed as well as what material it is made from affects what it can be used for as well as how it can be recycled and disposed of at the end of its life. It stated, for example, that use of the term “bioplastic” does not automatically mean that a product will biodegrade:

Plastic can be made from fossil-based or bio-based materials. Both can be used to make highly durable, nonbiodegradable plastics, or plastics which either biodegrade or compost. The nature of the material used to make a plastic or the term used to describe it does not necessarily dictate the way it will behave at the end of its life e.g. a bio-based plastic or bioplastic does not automatically mean it will biodegrade.

It also made clear that the fact that a plastic is described as “biodegradable” does not mean that it should be freely released into the environment in an uncontrolled manner. The speed, method and nature of biodegradation differs between materials. Currently biodegradable plastic cannot be recycled in the same way as non-biodegradable plastic. It must be separated from nonbiodegradable plastic streams and dealt with separately. If not, it causes problems during the recycling process.¹⁵⁰

In terms of environmental impact of biodegradable and compostable packaging, the WRAP guide stated:

There is a lack of clarity concerning standards that define the biodegradability of biodegradable or compostable plastics in any environment. There is a particular lack of evidence on the behaviour of these materials in water, and there is a need to understand biodegradation at lower temperatures. Therefore, it is very difficult to accurately assess environmental impact of biodegradable and compostable plastic packaging.¹⁵¹

In its December 2018 Resources and Waste Strategy, the UK Government said that it would launch a call for evidence on the development of standards for bio-based and biodegradable plastics:

Innovative new packaging types could help reduce the environmental impact of plastic, if disposed of in the right way. We want to make this easy for people. One potential solution could be to introduce new standards for them. We will work with UK Research and Innovation, and industry, to examine the demand, benefits and implications, starting in 2019 with the launch of a call for evidence.¹⁵²

¹⁵⁰ WRAP, [Understanding plastic packaging and the language we use to describe it](#), July 2018, p5

¹⁵¹ WRAP, [Understanding plastic packaging and the language we use to describe it](#), July 2018, p7

¹⁵² HM Government, [Waste and Resources Strategy for England](#), December 2018, p125

11. What are other countries doing to tackle plastic waste?

A number of reports also set out what other countries outside the UK are doing to reduce the volume of avoidable plastic waste. For example, see:

- UN Environment Programme, [Single-Use Plastics: A Roadmap for Sustainability](#), 2018. This provides an overview of different policy instrument used around the world to either ban or discourage use of certain single use plastics;
- Annex D of the February 2018 Voluntary & Economics Incentives Working Group Report, [Voluntary and economic incentives to reduce littering of drinks containers and promote recycling](#), contains a table summarising details of other countries with a deposit return scheme and their reported rates of packaging recycling;
- The September 2017 Valpak [Packflow 2025 report](#) on extended packaging producer responsibility schemes contains an appendix providing country comparison profiles between France, Italy, Spain, Germany, Belgium and the Netherlands and the UK;
- The 2016 Chartered Institute of Wastes Management (CIWM) report, [Packaging Waste Recovery – A European comparison](#), contains policy comparison tables covering all types of packaging (not just plastics);
- The recycling company, Plastic Expert, has a series of articles on its website comparing plastics recycling in the UK with other countries:
 - [How Does The UK Compare At Plastic Recycling With Holland?](#) 19 August 2016
 - [How Does The UK Compare At Plastic Recycling With Germany?](#), 26 August 2016
 - [How Does the UK Compare at Plastic Recycling with France?](#) 20 September 2016
 - [How Does the UK Compare at Plastic Recycling with Sweden?](#), 18 October 2016
- The European Commission (DG Environment), published a report [Plastic waste in the environment – Final Report](#) from the Bio Intelligence Service, April 2011. Although many of the statistics in it are now out-dated, it highlights some of the different policy responses to different types of plastics waste from different sectors.

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