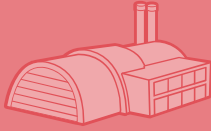
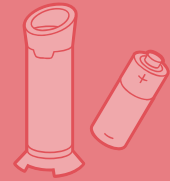




HM Government



# OUR WASTE, OUR RESOURCES: A STRATEGY FOR ENGLAND





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# MINISTERIAL FOREWORD

Dame Ellen MacArthur broke the solo record for sailing round the world and is now dedicated to an even tougher challenge – completely rethinking how we use resources, and designing out waste and pollution.

This superb advocate for a circular economy speaks of the vital lesson she learned on her lengthy voyages, about the true value of resources which are so often taken for granted: from fuel, food and water, to wood, metals and plastics.

Because in a boat, thousands of miles from land, ‘What you have is all you have,’ as Dame Ellen observes. And that means valuing finite resources by keeping them in the economy and out of the environment.

The same should be true of the planet’s raw materials – the source of all that we eat, drink, wear, drive, use and breathe. We rely upon these valuable assets, the Earth’s ‘natural capital’, for energy to fuel homes, businesses and transport; the materials to build shelter; the seeds, soil and water we use to grow food.

And our consumption of them places greater strain on our planet as the global population grows. More people are migrating from rural areas to cities. Greater prosperity and higher living standards are driving demand for nutritious food, comfortable housing, reliable energy and consumer goods. With everything humans do, we inevitably create waste. However we manage it, there is an impact on the environment.

The Government’s ambitious new Resources and Waste Strategy seeks to redress the balance in favour of the natural world. Our goal is to move to a more circular economy which keeps resources in use for longer – for that to happen, we must all reduce, reuse and recycle more than we do now.

Our Strategy focuses on known problems with effective solutions that, among other benefits, will reduce our reliance on single-use plastics, cut confusion over household recycling, tackle the problems of packaging and end the economic, environmental and moral scandal that is food waste.

We also tackle the problem of waste crime, which cost the English economy around £600 million in 2016, harms local communities and which pays no heed to the value of scarce resources.

Our goal is to maximise the value of the resources we use, minimise the waste we create, cut emissions and help create a cleaner, greener, healthier planet.

## Turning the tide on pollution

By making sure that manufacturers and producers bear a heavier financial burden for the pollution they cause, the Strategy fully upholds the ‘polluter pays’ principle.

By introducing new incentives – regulatory and economic, along with better infrastructure and information, our measures help people do the right thing.

And by protecting the natural world, and leaving it in a healthier state for the next generation, it will help us uphold a core pledge of our 25 Year Environment Plan.

This Strategy reflects that ambition. Leaving the European Union is an opportunity to refresh and renew our environmental policy, and show domestic and international leadership.

Secondly, these new measures support our commitments, in the Industrial and Clean Growth Strategies, to double resource productivity and eliminate avoidable waste, both by 2050.

Thirdly, and as importantly, we know there is an urgent need for new thinking to tackle avoidable waste, particularly plastic. An estimated eight million tonnes of plastic waste enter the sea each year. Devastating evidence of the damage to wildlife and habitats has been shown in programmes such as Blue Planet II on the BBC, and Sky's Ocean Rescue campaign.

We will consult on increasing our successful 5p plastic bag charge to 10p, and extending the scheme to small retailers. We will consult on introducing a deposit return scheme for drinks containers, to reward people for bringing back bottles and encourage them not to litter their empties. We have also consulted on banning plastic straws (except for medical use), stirrers and cotton buds.

Plastic pollution is, however, far from the only threat to the environment. Radical action is necessary to improve our use of resources and our handling of waste. Government moves to cut consumption of single-use plastics have both paved the way for the fundamental reforms set out here, and put the sector on notice that we expect lasting, long-term change.

The consequences of every country's behaviour are seen and felt across the world. Pollution knows no national boundaries - it damages the global environment as well as our own landscapes, rivers and seas. And countries are responding to the threat they face. Nations such as China are no longer prepared to accept lower quality waste materials; nor indeed should this nation be offshoring its waste for others to deal with.

In recent decades, this country has been making progress on how it manages waste and resources. Recycling rates are up, and carbon emissions are holding steady. But we are ambitious for more. The planet needs us to do more. And with this Strategy we will go further, faster.

**Michael Gove**  
Secretary of State for  
Environment, Food  
and Rural Affairs



# THE RESOURCES AND WASTE STRATEGY AT A GLANCE



Natural capital is one of our most valuable assets. The air we breathe, the water we drink, the land we live on, and the stock of material resources we use in our daily lives are at the heart of our economy, our society and our way of life. We must not take these for granted.

Our Strategy sets out how we will preserve our stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. At the same time we will minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and by tackling waste crime. It combines actions we will take now with firm commitments for the coming years and gives a clear longer-term policy direction in line with our 25 Year Environment Plan. This is our blueprint for eliminating avoidable<sup>1</sup> plastic waste over the lifetime of the 25 Year Plan, doubling resource productivity, and eliminating avoidable waste of all kinds by 2050.

We want to be ambitious. Where existing legislation cannot match our ambitions, we will take new powers to strengthen it.

## Introduction – The case for action

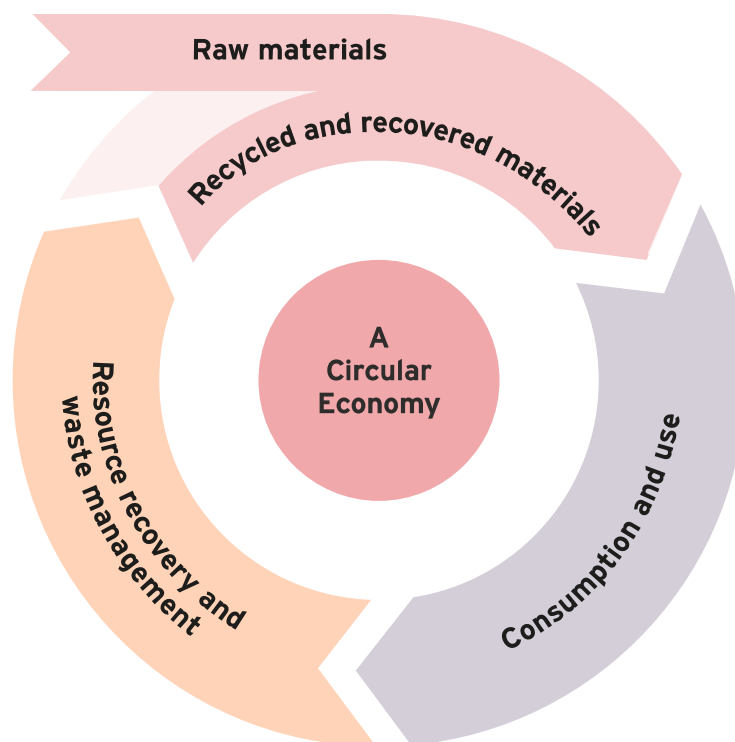
In the 25 Year Environment Plan, the Government pledged to leave the environment in a better condition for the next generation. This Strategy will help us meet that commitment. It will be supported by a series of consultations on known problem areas, such as packaging waste, and we encourage you to engage with us in delivering this strategy by sharing your views.

Our plan is to become a world leader in using resources efficiently and reducing the amount of waste we create as a society. We want to prolong the lives of the materials and goods that we use, and move society away from the inefficient ‘linear’ economic model of ‘take, make, use, throw’.

A more circular economy will see us keeping resources in use as long as possible, so we extract maximum value from them. We should recover and regenerate products and materials whenever we can, giving them a new lease of life.

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<sup>1</sup> We talk about plastic waste being ‘avoidable’ 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



## Chapter 1 - Sustainable production

During the first stage of the resources lifecycle, we turn valuable natural resources and materials into the goods and services upon which modern life and a healthy, vibrant economy depend. Evidence suggests that 80% of the damage inflicted upon the environment when products become waste can be avoided if more thoughtful decisions are made at the production stage<sup>2</sup>.

This chapter sets out how we will:

- **Invoke the 'polluter pays' principle and extend producer responsibility for packaging, ensuring that producers pay the full costs of disposal for packaging they place on the market**
- **Stimulate demand for recycled plastic by introducing a tax on plastic packaging with less than 30% recycled plastic**
- **Harness the potential of extended producer responsibility for other product types**
- **Set minimum requirements through ecodesign to encourage resource efficient product design**
- **Manage chemicals sustainably and address barriers to reuse and recycling posed by their use, through a Chemicals Strategy**
- **Develop a model for realising resource efficiency savings, working with businesses through 'resource efficiency clusters'**

<sup>2</sup> WRAP (2013) <http://www.wrap.org.uk/sites/files/wrap/Embedding%20sustainability%20in%20design%20%20-%20final%20v1.pdf>



## Chapter 2 - Helping consumers take more considered actions

Helping consumers choose and use more sustainable products, is both good for them and the environment. Despite advances in technology in recent decades, the average life span of many products we buy and use in daily life is actually lower than it was 20 years ago<sup>3</sup>. We want to extend the lives of products through repair, reuse and remanufacture. We want to help consumers to be able to recycle the materials they contain and dispose of them in the most environmentally sensitive ways.

This chapter sets out how we will:

- **Incentivise consumers to purchase sustainably**
- **Provide consumers with better information on the sustainability of their purchases**
- **Ban plastic products where there is a clear case for it and alternatives exist**
- **Address barriers to reuse**
- **Support the market for remanufactured goods**
- **Encourage appropriate disposal of used products**
- **Lead by example through procurement and the Greening Government Commitments**

## Chapter 3 - Resource recovery and waste management

Household waste recycling rates in England have risen from around 11% in 2000/1 to about 45%<sup>4</sup>. Recycling rates in construction have also improved over the same period<sup>5</sup>. But since 2013 rates for both have plateaued. We need to drive better quantity and quality in recycling, and more investment in domestic recycled materials markets. This government supports comprehensive and frequent waste collections and is determined to help local authorities and waste management companies act in the most sustainable and resource-efficient way possible. We want to promote UK-based recycling and export less waste to be processed abroad.

This chapter sets out how we will:

- **Improve recycling rates by ensuring a consistent set of dry recyclable materials is collected from all households and businesses**
- **Reduce greenhouse gas emissions from landfill by ensuring that every householder and appropriate businesses have a weekly separate food waste collection, subject to consultation**
- **Improve urban recycling rates, working with business and local authorities**

3 The German Environment Agency (2017) <https://www.umweltbundesamt.de/en/press/pressinformation/lifetime-of-electrical-appliances-becoming-shorter>

4 Local authority collected waste from households from January 2010 to March 2018. (<https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>)

5 UK Government services and information (2018) <https://www.gov.uk/government/statistics/uk-waste-data>

- **Improve working arrangements and performance between local authorities**
- **Drive greater efficiency of Energy from Waste (EfW) plants**
- **Address information barriers to the use of secondary materials**
- **Encourage waste producers and managers to implement the waste hierarchy in respect to hazardous waste**

## Chapter 4 - Tackling waste crime

Waste-related criminal activity costs the economy hundreds of millions of pounds per year<sup>6</sup>. Rogue operators illegally dump or export waste, undermining legitimate businesses by disposing of waste cheaply and recklessly. This deprives the economy of tax income and harms the environment and local communities. By tackling this crime we will ensure that resources are properly recycled or recovered and fed back into the economy.

This chapter sets out how we will:

- **Improve the transport, management and description of waste by reforming existing regulations**
- **Strengthen intelligence sharing and engagement to tackle illegal activity**
- **Prevent illegal activity being hidden through waste exemptions by reforming the existing regime**
- **Mandate the digital recording of waste movements, subject to consultation**
- **Create a Joint Unit for Waste Crime**
- **Toughen penalties for waste criminals**
- **Increase awareness of waste regulations and publicise positive work of enforcement bodies as they tackle waste crime**

## Chapter 5 - Enough is enough: cutting down on food waste

We have long recognised the need to tackle food waste. In the UK alone, an estimated 10 million tonnes of food and drink are wasted post-farm gate annually, worth around **£20 billion**. Excess food waste costs us money and is environmentally damaging. Growing excess food that no one eats damages the Earth's ecosystems when we dispose of it. Moreover, a fifth of UK greenhouse gas (GHG) emissions are associated with food and drink, mostly created during production (agriculture and manufacturing) – and needlessly if the food and drink are wasted<sup>7</sup>. We are fully committed to reducing food waste, reducing our carbon footprint, and also meeting the UN Sustainable Development Goal to halve global food waste at consumer and retail levels by 2030.

6 DEFRA - Rethinking Waste Crime (2018) [https://consult.defra.gov.uk/waste/crime-and-poor-performance-in-the-waste-sector/supporting\\_documents/Waste\\_Crime\\_Cons\\_English.pdf](https://consult.defra.gov.uk/waste/crime-and-poor-performance-in-the-waste-sector/supporting_documents/Waste_Crime_Cons_English.pdf)

7 WRAP (2016) <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/food-waste/written/38003.html> .

This chapter sets out how we will:

- **More effectively redistribute food to those who need it most before it can go to waste**
- **Consult on annual reporting of food surplus and waste by food businesses**
- **Consult on legal powers to introduce food waste targets and surplus food redistribution obligations**
- **Publish a new food surplus and waste hierarchy**
- **Promote awareness of the issue by appointing a new food waste champion**
- **Support cross sector collaboration through the Courtauld 2025 agreement**

## Chapter 6 - Global Britain: international leadership

Concerns over resources and waste management cut across continents and oceans. Pollution and environmental damage do not respect national borders and tackling them requires a broad coalition. Plastic which pollutes the ocean can be carried by currents and cause damage far from where it originated: there is little to be gained by making improvements in isolation. International leadership is needed.

This chapter sets out how we will:

- **Promote the goals of our Resources and Waste Strategy internationally**
- **Drive international political commitments through the ground-breaking Commonwealth Clean Oceans Alliance**
- **Support developing nations to tackle pollution and reduce plastic waste, including through UK aid**
- **Improve the quality of plastics exported for recycling through the Basel and Stockholm Conventions**
- **Establish cross-government oversight of the UK's natural resource security**

## Chapter 7: Research and innovation

In some areas where we are seeking transformative change, our knowledge, data or technology has yet to match the breadth of our ambitions. Innovation here is vital - both to developing novel solutions and improving the efficiency, cost and/or effectiveness of existing technologies. As Government, we can support industry and academia to stimulate innovation.

This chapter sets out how we will:

- **Support further investment and innovation in resource efficiency, working with UK Research and Innovation (UKRI) on our Areas of Research Interest**
- **Launch a call for evidence on the development of standards for bio-based and biodegradable plastics**
- **Support further investment in resource efficient technologies, including through the Industrial Strategy Challenge Fund**
- **Support the Waste and Resources Action Programme**
- **Encourage innovative waste treatment technologies that create transport fuels through the Renewable Transport Fuels Obligation (RTFO)**

## Chapter 8 – Measuring progress: data, monitoring and evaluation

High quality data, information and insights are essential for effective policy making.

This chapter sets out how we will:

- **Work with our partners and stakeholders to develop a shared vision and bold new approach to data on resources and waste**
- **Move away from weight-based towards impact-based targets and reporting, focusing initially on carbon and natural capital accounting**
- **Maintain the coverage and quality of local authority-collected waste and improve data collection to meet future needs**
- **Work with tech firms to develop innovative digital solutions for tracking waste, and consult on options to mandate the digital recording and sharing of waste movement data**



# THE CASE FOR ACTION



Our growth over many decades has been over-reliant on exploiting finite natural resources whose depletion inevitably leaves future generations poorer.

## A new chapter in resources and waste management

Material resources are at the heart of our economy, and we consume them in large quantities. They allow us to meet our basic human needs as well as generate economic growth and create social value. But our use of resources is unsustainable. We use too much and are too ready to throw things away, and this waste causes damage if it is not managed properly. We can no longer ignore this. In the 25 Year Environment Plan, the Government pledged to leave the environment in a better condition for the next generation. This Resources and Waste Strategy is a key part of this new chapter.

Our goals are clear. We will lead the world in using resources efficiently and reduce the waste we create. We will keep resources in use for as long as possible. We will safeguard and enhance the natural capital upon which our wellbeing and prosperity depend. We will unlock the value in waste and think smarter about how it is managed. We will help consumers by tackling confusion over domestic recycling. We will eliminate from use the most problematic plastics. And we will make sure that those responsible for creating polluting products pay for the costs of that pollution: enshrining the **'polluter pays principle'** throughout our Strategy.

### What is natural capital?

When we talk about 'natural capital', we mean the elements of nature that directly or indirectly produce value for people, including resources, ecosystems and species, the land, air and oceans, as well as the natural processes and functions that link them together and sustain life<sup>8</sup>.



<sup>8</sup> Natural Capital Committee (2017) How to do it: a natural capital workbook [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/608852/ncc-natural-capital-workbook.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/608852/ncc-natural-capital-workbook.pdf)

The measures set out in this Strategy will help our society move away from a ‘take, make, use and throw’ approach to resources and materials and instead waste less and reuse, recycle and repair more. We will leave behind our traditional linear economic model and create a more sustainable and efficient circular model from which the environment, the economy and society all benefit.

This Strategy is for the long term. It is our policy framework for decision making and action and establishes what we all need to do to achieve our goals. We will go further in areas where we are already doing well, including the move to a low carbon economy. The Strategy does not answer all the questions for implementation or cover historic waste policy. Instead, it aims to be a guide to future government policy, our commitment to safeguard the planet’s precious natural resources and environment. It encourages and invites you to play your part.

This document is to be read in conjunction with its [Evidence Annex](#) and sets out why our current approach to using resources isn’t working and why we must all make some changes. The Strategy proposes a new approach, new policy objectives, and sets out how they can be achieved. This document, divided into **three parts**, sets out these policies, actions and commitments:

**Part 1, the product lifecycle**, considers the production (chapter 1), consumption (chapter 2), and end of life<sup>9</sup> (chapter 3) of resources and materials.

**Part 2, topical areas**, focuses on two areas – waste crime (chapter 4) and food waste (chapter 5) – for which the lifecycle approach is not the best way to tackle them.

**Part 3, the bigger picture**, explores three areas which cut across the lifecycle – international leadership (chapter 6), research and innovation (chapter 7), and data, monitoring and evaluation (chapter 8).

## This Strategy

This Strategy is the first significant government statement in this area since the 2011 Waste Review and the subsequent Waste Prevention Programme 2013 for England. It builds on this earlier work but also sets out fresh approaches to long-standing issues like waste crime, and to challenging problems such as packaging waste and plastic pollution.

Some things don’t need to change – like our commitment to the ‘polluter pays’ principle. Reforming existing producer responsibility systems in line with this principle, will make certain that both the responsibility for and the cost of treatment or disposal of post-consumer products sits fairly and squarely with producers and not tax payers. Our determination to rid the country of waste crime is not new, but our strategic approach to achieving this is, including the Government’s response to the recommendations of the [review of serious and organised waste crime](#).

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<sup>9</sup> The phase of the product life-cycle after the product reaches its end of life. It includes collection, treatment and reprocessing.



## Our strategic framework

Our Strategy is framed by natural capital thinking and guided by **two overarching objectives**:

- 1 To maximise the value of resource use; and
- 2 To minimise waste and its impact on the environment.

We will deliver this through policies, actions and commitments which adhere to at least one of **five strategic principles**:

- 1 To provide the incentives, through regulatory or economic instruments if necessary and appropriate, and ensure the infrastructure, information and skills are in place, for people to do the right thing;
- 2 To prevent waste from occurring in the first place, and manage it better when it does;
- 3 To ensure that those who place on the market products which become waste to take greater responsibility for the costs of disposal – the ‘polluter pays’ principle;
- 4 To lead by example, both domestically and internationally; and
- 5 To not allow our ambition to be undermined by criminality.

This Strategy complements and helps deliver other government strategies which relate to the environment and include our ambitions to double resource productivity<sup>10</sup> and eliminate avoidable waste by 2050. As well as the 25 Year Plan, they include: the Clean Growth Strategy<sup>11</sup>, the Industrial Strategy<sup>12</sup>, and the Litter Strategy<sup>13</sup>. It also responds to the recommendations of the 2017 Government Office for Science Report, *From Waste to Resource Productivity*<sup>14</sup>. This explores how we can treat waste as a valuable resource and this Strategy takes forward a number of its recommendations.

Our Strategy will contribute to the delivery of **five strategic ambitions**:

- 1 To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025;
- 2 To work towards eliminating food waste to landfill by 2030;
- 3 To eliminate avoidable<sup>15</sup> plastic waste over the lifetime of the 25 Year Environment Plan;
- 4 To double resource productivity<sup>16</sup> by 2050; and
- 5 To eliminate avoidable waste of all kinds by 2050.

10 A measure of the value obtained from resources. Typically measured as value added per tonne of resources used. At national level, measured by GDP/Domestic Material Consumption (DMC measures the total amount of materials directly used by an economy and is defined as the annual quantity of raw materials extracted from the domestic territory, plus all physical [imports](#) minus all physical [exports](#)).

11 UK Government services and information (2017) <https://www.gov.uk/government/publications/clean-growth-strategy>

12 UK Government services and information (2017) <https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future>

13 UK Government services and information (2017) <https://www.gov.uk/government/publications/litter-strategy-for-england>

14 UK Government services and information (2017) <https://www.gov.uk/government/publications/from-waste-to-resource-productivity>

15 We talk about plastic waste being ‘avoidable’ 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.

16 Resource productivity is a measure of the value (in terms of GDP) we generate per unit of raw materials we use in the economy.

As most of our existing waste legislation is EU-derived, this will be retained in UK law through the European Union Withdrawal Act 2018. And proposals which follow from this Strategy will take account of the future relationship we negotiate with the EU on environmental matters. Where existing legislation is insufficient to deliver our ambition we will take new powers to do so, including through our Environment Bill. And we will work with the devolved administrations to co-ordinate policy on resources and waste, to ensure that approaches are aligned and impacts on the UK Internal Market are minimised.

**Material or sector specific targets**, for example for packaging waste, will primarily be addressed through particular policies rather than the Strategy as a whole, and so are referenced in the appropriate chapters.

## Our Approach

On the basis of the best available evidence, set out in the evidence annex, and valuable input from stakeholders<sup>17</sup>, we have summarised the current position, established the case for government intervention, and assessed the policy instruments available to achieve the desired outcomes. We have explored a range of ways government can incentivise action including the application of behavioural insights to complement conventional economic thinking. We have considered ways to motivate organisations and individuals to do things differently, including regulatory, market and communicative solutions. Government has three critical roles within this framework:

- 1 To set the framework including clear objectives and direction of travel;
- 2 To put the incentives in place to motivate change; and
- 3 To lead by example.

Whilst government can set the direction, we encourage you to continue to make the difference for the environment. Local authorities, the waste sector, manufacturers and retailers, businesses, schools, charities, designers, academics, campaign groups, individual citizens – all are central to the success of this new approach on resources and waste. As we consult on many of the proposals contained within, we invite contributions from all.

Government recognises the financial pressures on local authorities. They will therefore receive additional resource to meet new net costs arising from the policies set out in this Strategy once implemented. This includes both net up front transition costs and net ongoing operational costs.

## Monitoring and Evaluating Progress

It's not enough to challenge ourselves to meet ambitious targets, we must also track our progress, monitor how things change, and carry out quality evaluation of our flagship policies. We have developed a suite of indicators which we will use to assess our progress and complement the goals of the 25 Year Environment Plan. Each has one or more metrics associated with it which we will update annually and report publicly on every three years.

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<sup>17</sup> For example, via the Defra (2018, forthcoming) 'Post Implementation Review of the Waste (England and Wales) Regulations 2011' on [legislation.gov.uk](http://legislation.gov.uk).

The strategic indicators are:

### **Maximise the value of resource use, and minimise adverse environmental impacts**

- 1 Raw material consumption
- 2 Carbon footprint of resource use
- 3 Carbon footprint of a basket of consumer goods

### **Minimise waste and its impact on the environment**

- 1 Waste generation
- 2 Recycling
- 3 Landfilling
- 4 Illegal waste sites
- 5 Fly-tipping
- 6 Litter

Currently our metrics are framed in tonnage terms. We are committed to moving away from weight-based to impact-based targets. Using weight as the basis for making policy, setting targets and monitoring progress can lead us in inappropriate directions as some lightweight materials have large environmental footprints, like plastics, while some heavy materials have small footprints, like aggregates. Initially we will focus on greenhouse gas emissions and natural capital. It will take time, and some new research, to develop versions of our targets and indicators that help us understand and act more in line with our strategic principles. More detail about our framework of indicators can be found in Chapter 8.

We expect the policies set out in this Strategy to contribute to a wide range of economic and social goals. Although our initial focus is on measuring natural capital related outcomes, we will also develop indicators of social and economic outcomes.

We will continue to refine and improve the Strategy, reporting every three years on our progress and refreshing it every five years.

## **Time for change, our wasted resources**

Our current linear approach to resource use means that we are failing to capitalise on the true value of these resources. Not only are we wasting these valuable resources we are also seeing the impacts of such waste. Illegal waste dumping and littering causes local blight and the transport of waste materials around the country causes atmospheric pollution. Biodegradable waste in landfill breaks down anaerobically, leading to the generation of significant amounts of methane (a

greenhouse gas 25 times more potent than CO<sub>2</sub>, and which accounted for 11% of the UK National Inventory of greenhouse gases in 2016)<sup>18</sup>, some of which escapes and contributes to global warming.

## Eliminating biodegradable waste to landfill

Despite significant progress, England continues to rely on landfill<sup>19</sup>. Twelve million tonnes of municipal waste<sup>20</sup> were landfilled in 2016, half of which was biodegradable. The Committee on Climate Change (CCC) highlight this as a concern and we want tackle it. That's why, over and above our commitment to work towards eliminating food waste to landfill by 2030, we will explore policies to work towards eliminating all biodegradable waste to landfill by the same date.

Growth in energy from waste (EfW)<sup>21</sup> and alternative residual waste treatment infrastructure will divert further waste from landfill. And several proposals in this Strategy, such as maximising separate capture of food waste (Chapter 3), should significantly reduce the volume of biodegradable waste sent to landfill. Once these have been implemented, we will conduct composition analysis to determine whether food and other biodegradable waste to landfill remain an issue and, if so, consult on banning biodegradable material being sent to landfill.

The waste hierarchy, which ranks options for waste management, has driven some progress. Priority goes to preventing the creation of waste in the first place, followed by preparing waste for reuse; to recycling, and then recovery. Disposal - in landfill for example - is regarded as the worst option. Instead we have increased our rates of recovery and recycling and generated much more energy from waste. We want to shift away from waste towards resource efficiency, and will do this by focusing not just on managing waste, but, on managing the resources which become waste.



Existing measures such as the landfill tax and the 5p plastic bag charge have brought about the kind of changes in behaviour and attitude that we want to encourage. More than 15.6 billion fewer plastic bags have been used since the charge was introduced. The landfill tax was introduced in 1996 and has been a key influencing factor on the waste management industry and a driver for the fall in demand for landfill and a rise in demand for alternatives<sup>22</sup>.

18 UK Greenhouse Gas Emissions, final figures (2018) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/680473/2016\\_Final\\_Emissions\\_statistics.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/680473/2016_Final_Emissions_statistics.pdf)

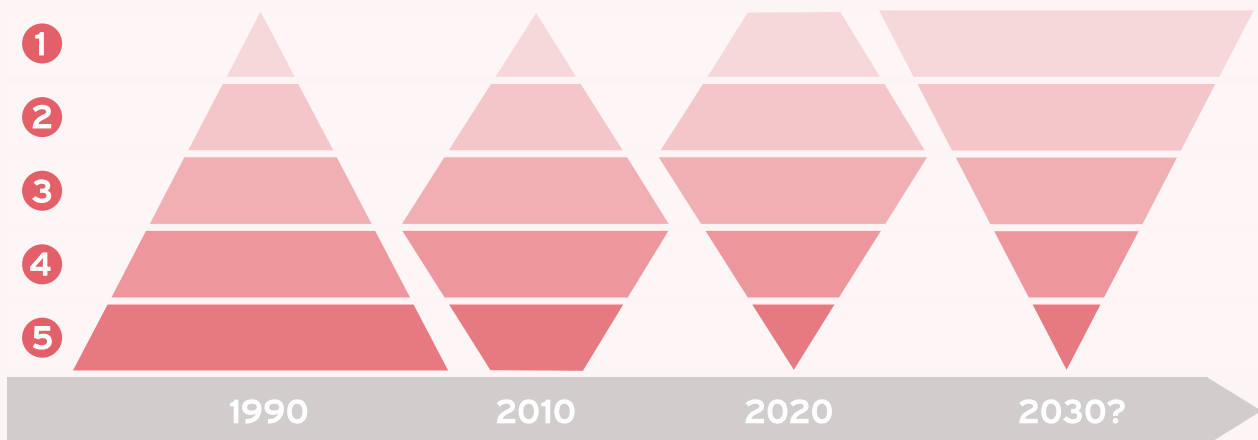
19 The current level of biodegradable municipal waste sent to landfill across the UK is 22% of 1995 production levels, on track to deliver our commitment of a reduction of biodegradable municipal waste sent to landfill to 35% of 1995 production levels by 2020.

20 [UK Statistics on Waste \(2018\)](#)

21 Energy from waste (EfW) technologies include: The controlled combustion of municipal waste or products derived from municipal waste in specialised plant specifically to generate power and/or heat from waste feedstock.

22 UK Parliament website (2014) <https://publications.parliament.uk/pa/cm201415/cmselect/cmenvfru/241/24105.htm>

**Evolution of Waste Management Practices:** In the past, most waste was dealt with by disposal, but over time that will shift increasingly to recycling, reuse and ultimately prevention.



### 1 Prevention

Using less material in design and manufacture. Keeping products for longer; reuse. Using less hazardous materials.

### 2 Preparing for reuse

Checking, cleaning, repairing, refurbishing, whole items or spare parts.

### 3 Recycling

Turning waste into a new substance or product. Includes composting if it meets quality protocols.

### 4 Other recovery

Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste; some backfilling.

### 5 Disposal

Landfill and incineration without energy recovery.

We have also made great progress in recent decades on larger, more complex global challenges. The ozone layer was saved after nations signed up to the Montreal Protocol, spurring technological advances around alternatives to CFC gases<sup>23</sup>. 35% of England's seas are now within designated marine protected areas, safeguarding important and vulnerable habitats and species. And since 1990, the household recycling rate has increased fourfold and the proportion sent to landfill has fallen by three quarters<sup>24</sup>. We will face the global plastic pollution challenge with the same determination.

## Tackling plastic pollution

Plastic is everywhere, for good reason. When it was first created it was hailed as a wonder product: robust but lightweight, malleable but resilient, and low cost. Today, those same qualities mean it poses one of the greatest pollution challenges we face. Since the mid-20<sup>th</sup> century, this durable and versatile material has been manufactured in abundance - and disposed of in substantial quantities.

<sup>23</sup> The United Nations Development Programme (2014) <http://www.undp.org/content/undp/en/home/sustainable-development/environment-and-natural-capital/montreal-protocol.html>

<sup>24</sup> DEFRA (2017) [Statistics on waste managed by local authorities in England in 2016/17](#)

Only now are we realising the full extent of the damage that thoughtless disposal of plastic causes to the environment.

We use five million tonnes of plastic in the UK every year, nearly half of which is packaging, and demand is rising<sup>25</sup>. Plastics are in our clothes and shoes, in products on supermarket shelves, in vehicles and buildings. Yet plastic waste often does not decompose and can last centuries in landfill, or else ends up littering the streets or polluting the natural environment. This means plastics are also found where we don't want them – polluting our soils, rivers and oceans, and harming the creatures that inhabit them. Animals suffer when they eat plastics, and habitats suffer when chemicals leach from plastics. Between 2015 and 2025, if we do not act, marine plastic pollution is set to treble world-wide to 150 million tonnes<sup>26</sup>.



Our priority will continue to be preventing plastic entering the environment in the first place and eliminating avoidable plastic waste over the lifetime of the 25 Year Environment Plan.

## Plastics in the Circular Economy

The UK welcomes international collaboration on preventing and reducing plastic waste. The actions listed in the EU's plastics strategy<sup>27</sup> and its proposed Directive<sup>28</sup> on reducing the impact of certain plastic products on the 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.

What does that mean in practice? It means avoiding unnecessary use of plastics – as with all materials – in the first place. And where we do, for good reasons, continue to use plastics, stopping them being sent to landfill or incineration. Not all plastics can be recycled indefinitely: it is not always technically, environmentally, and economically practicable to do so. Polymers can start to degrade, meaning their quality is too poor to be used in new products. However, there is also scope for innovation in terms of plastics and in finding substitute materials.

We will also carry on cleaning up and clearing plastic dumped on land and at sea. And we will continue to lead international efforts and help developing nations reduce their plastic waste. Our

25 British Plastics Federation (2016) [http://www.bpf.co.uk/sustainability/plastics\\_recycling.aspx](http://www.bpf.co.uk/sustainability/plastics_recycling.aspx)

26 Government Office for Science (2018), Foresight Future of the Sea. <https://www.gov.uk/government/publications/future-of-the-sea-2>

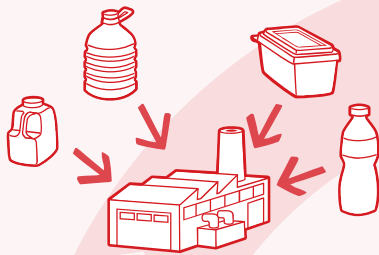
27 European Commission (2018), An European Strategy for Plastics in a Circular Economy <http://ec.europa.eu/environment/circular-economy/pdf/plastics-strategy-brochure.pdf>

28 European Commission (2018) [http://ec.europa.eu/environment/circular-economy/pdf/single-use\\_plastics\\_proposal.pdf](http://ec.europa.eu/environment/circular-economy/pdf/single-use_plastics_proposal.pdf)

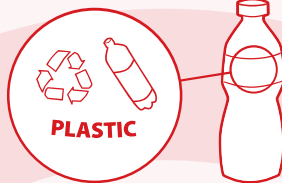
commitment to tackling plastic pollution reflects feedback we have received from businesses and the world-leading UK Plastics Pact, which Defra supports.

## A CIRCULAR ECONOMY FOR PLASTICS

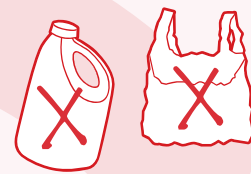
Products are made from some recycled materials...



...and are easy to recycle.



Some products are no longer made from plastic but from alternative materials.



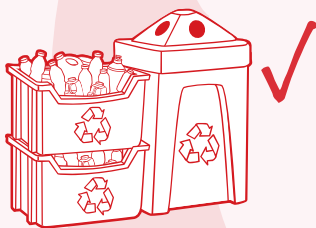
### OUR AMBITION

To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan

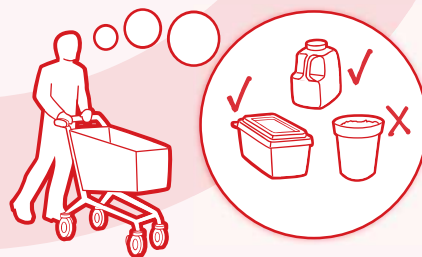
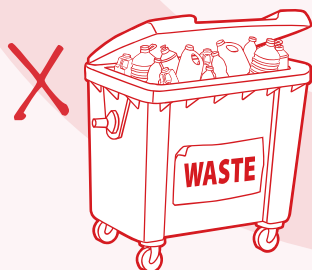
Consumers use more reusable items...



More plastics are reused, repaired or recycled.



...and know what can be recycled.



## What is the UK Plastics Pact?

The **UK Plastics Pact** is a collaborative initiative to create a circular system that keeps plastic in the economy and out of the natural environment. Led by the charity WRAP and set up in partnership with the Ellen MacArthur Foundation, it is a coalition whose members cover the entire plastics value chain. Its ambitious targets to 2025 for plastic packaging<sup>29</sup> are:

- **100% to be reusable, recyclable or compostable**
- **70% to be effectively recycled**
- **30% average recycled content across all plastic packaging**
- **Action taken to eliminate problematic or unnecessary single-use plastic packaging items**

A roadmap to achieving these targets has been published<sup>30</sup>.

## Looking ahead - putting a price on waste and valuing our resources

To do this means understanding where things aren't working, where market failures are holding us back, and what needs to change. Consultations on our proposals will continue to explore just this. As set out in more detail below, we want to focus not just on managing waste, but on managing the resources which become waste.

### Case study: The Waste to Wealth commitment

Government welcomes the leadership taken by the Prince's Responsible Business Network, as members of Business in the Community (BITC), to organise the inaugural "Waste to Wealth Summit" in November 2018.



The 'Waste to Wealth Summit' saw HRH The Prince of Wales stress the importance of resource efficiency. The Prince highlighted the opportunities created by a prosperous and resilient, low carbon economy and the case for making the most out of precious resources, wasting as little as possible and finding ways of turning the waste we do create into new wealth.

Over 200 leaders from business, government, academia and civil society came together to help tackle this challenge head on and create radical new solutions that will double resource productivity and eliminate avoidable waste by 2030, supercharging this Strategy's 2050 targets.

<sup>29</sup> Current Pact business members are responsible for 80% of plastic packaging sold through UK supermarkets.

<sup>30</sup> WRAP (2018) <http://www.wrap.org.uk/content/the-uk-plastics-pact-roadmap-2025>



The Government will support businesses which are stepping up to this challenge. Over 40 leading businesses signed the Waste to Wealth Commitment and more are expected to join. The Waste to Wealth Commitment signatories committed to:

- **Set targets** to improve the productivity of resources that are key for business
- **Work collectively** towards doubling the nation's resource productivity and eliminate avoidable waste by 2030, contributing in the way that is most relevant to business
- **Redesign** how resources are used in products, services and operations
- **Collaborate** across organisations, value chains and sectors
- **Reconvene and report** on progress annually to share learning and demonstrate results

Seven Waste to Wealth Champions representing five key areas identified by Defra (chemicals, construction, food, metals and textiles) also signed the Commitment. The Waste to Wealth Champions will develop and deliver innovation hubs to identify challenges, create roadmaps and start to develop innovative solutions, reporting annually to The Prince's Responsible Business Network.

BITC will develop a programme of research, learning and action working closely with Waste to Wealth Champions and supporting partners. They will support businesses to define individual and collaborative action plans and start to identify innovative solutions to shared challenges within and across sectors, reporting back at the Waste to Wealth Forum in 2019.

The environment will benefit as we reduce landfill and carbon emissions, and use fewer finite natural resources. Reducing carbon emissions is fundamental to mitigating the severe risks and impacts posed by a warmer world, and, as highlighted by the IPCC (2018)<sup>31</sup>, urgent action is required.

The economy benefits as producers become more efficient, paying less for resources. We will become more resilient to critical raw material shortages and less vulnerable to price volatility. A number of our initiatives will give businesses the confidence to invest more in resource-efficient technology and infrastructure, helping them to understand and mitigate risks in raw material supply chains and rewarding them for good product design.

Importantly, society benefits too - experiencing all the rewards of a healthy, protected environment and a natural world that is being safeguarded from dangerous climate change.

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31 IPCC (2018), [Global Warming of 1.5°C](#)

## Valuing resources, changing behaviour and reducing litter

When we all, as consumers, come to realise that possessions – even those we no longer want – retain a latent value as resources, and are not simply ‘waste’, long-term attitudes will change. The right infrastructure will help to change society’s mind-set, as will appropriate enforcement measures that nudge people to ‘do the right thing’<sup>32</sup>. Our policies seek to speed up this process – helping people value the resources that pass through their hands, and supporting them with the right infrastructure to keep those resources in use.

There will be a positive effect on littering in society. By reducing waste – particularly single-use plastics – and making it clearer how people should best dispose of unwanted items, the problem of littering will ease.

## Hand in hand: the ‘lifecycle approach’ and the circular economy

When products made from Earth’s precious raw materials are recycled, it removes the need to go back to the original, depleted source for more. And when resources are reused, it also prevents many harmful materials leaching into the environment – chemicals and acids from batteries dumped in landfill; shreds of plastic that swirl around our oceans, choking marine life and acting as a breeding-ground for harmful bacteria; as well as pollutants entering our atmosphere that damage air quality.

Over the life of a car we can fix it when it goes wrong until it’s finally beyond repair. We can then reuse the components and recover useful materials, such as alloys. This ensures that at each stage in the product lifecycle, we are extracting the highest quality and value.

But it’s not just in material reuse that the circular economy delivers benefits. It’s also relevant to energy generation and savings. Incinerating non-recyclable or contaminated waste (such as food packaging) can generate energy. Bio-waste can also be used to make bio-gas, a renewable energy source. Reusing products preserves the energy and materials embedded in them during their production.

The ‘lifecycle’ approach complements the circular economy model. It requires us to focus not just on managing waste responsibly, but on preventing its creation in the first place. It means taking into account how decisions taken during the design stage – at the start of the lifecycle – affect how a product is used and then disposed of by the consumer. At every stage of a product’s lifecycle there is scope for people to do all they can to maximise resource value and minimise waste.

32 UK Government services and information (2018) <https://www.gov.uk/government/publications/litter-strategy-for-england>

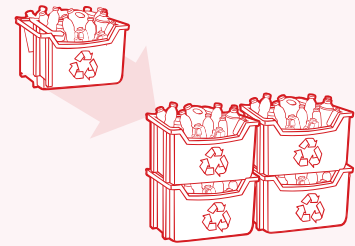
## OUR PROGRESS SO FAR



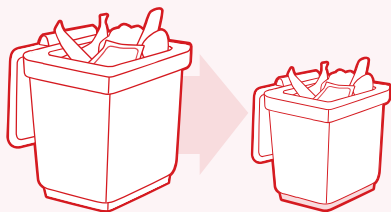
Consumption of raw materials **down almost a third** since 2000



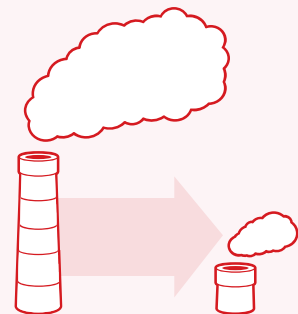
Local authority collected waste sent to landfill **down over 85%** since 2000



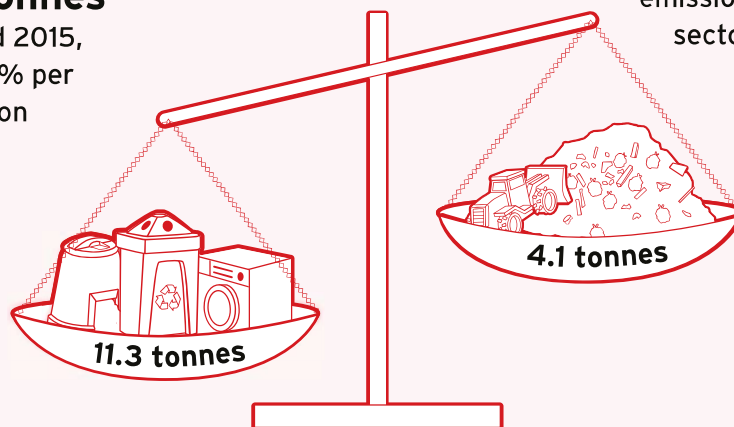
Household recycling levels have **quadrupled** since the turn of the century



UK food waste **reduced by a million tonnes** between 2007 and 2015, equivalent to a 14% per capita reduction



A **70% fall** in carbon emissions from the waste sector on 1990 level



### Increased recycling

In 2016/17 in England, local authorities recycled, composted or reused 11.3 million tonnes of the waste they collected, far outweighing the 4.1 million tonnes (15.7%) that were landfilled. 9.9m tonnes (37.8%) were incinerated in the UK or abroad

Chapter 1

# SUSTAINABLE PRODUCTION



During the first stage of the product lifecycle, we turn valuable natural resources into the goods and services upon which modern life and a healthy, vibrant economy depend. Evidence suggests that 80% of the damage done to the environment from waste products can be avoided if more thoughtful decisions – about their design, the choice of materials and chemicals used, and how they will be distributed and sold to consumers – are made at the production stage<sup>33</sup>. This is why it is so important to prevent waste occurring in the first place, as well as manage it better when it does.

To be more efficient in the way we use our stock of natural resources we need to rethink how we design and make products. This will involve those who place products on the market which become waste taking greater responsibility for the costs of disposal for those products – the ‘polluter pays’ principle.

**This chapter sets out how we will:**

- **Invoke the ‘polluter pays’ principle and extend producer responsibility for packaging, ensuring that producers pay the full net costs of managing packaging waste at end of life**
- **Harness the potential of extended producer responsibility for other product types**
- **Stimulate demand for recycled plastic by introducing a tax on plastic packaging with less than 30% recycled plastic content**
- **Set minimum requirements through ecodesign to encourage resource efficient product design**
- **Manage chemicals sustainably and address barriers to reuse and recycling posed by their use, through a Chemicals Strategy**
- **Develop a model for realising resource efficiency savings through ‘resource efficiency clusters’**

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33 TechUK (2018), *Reuse, Repair, Remanufacture in the ICT Sector Report*

## 1.1 Resource efficient product design

Currently, too many products are discarded before their useful life is over. This is wasteful of our precious stock of natural resources, some of which cannot be renewed. We want products to be designed to use less material and achieve greater circularity. Where possible we want to support the replacement of products with services (as with online music replacing CDs), and encourage the adoption of more resource efficient business models.

### What are resource efficient business models?

The common feature is that they extend product life, conserve resources and prevent materials from becoming waste. Examples include:

- Product-service systems - for example Rolls Royce sell their aerospace engines' thrust as 'power by the hour', which includes full in-use monitoring, servicing, repair, remanufacture, and replacement<sup>34</sup>.
- Hire and leasing - for example, joining a car club and hiring a car as and when necessary. There are several companies in this market in the UK<sup>35</sup>.
- Incentivised return - for example Desso offer a carpet take-back programme and have developed an innovative separation technique to tackle the millions of square metres of worn-out carpet thrown away every year<sup>36</sup>.
- Reuse - for example RDC Recycling is an IT asset recovery company specialising in the reuse and recycling of used computer equipment<sup>37</sup>.
- Product life extension - for example Kyocera's printer design concept means only the toner, rather than the whole toner cartridge, needs to be replaced. As many as 500,000 pages can be printed without replacing anything except toner, significantly reducing waste and cost<sup>38</sup>.

The REBus project, led by WRAP, has estimated that widespread roll-out of resource efficient business models across the UK economy could add up to £75 billion to GVA<sup>39</sup> by 2030.<sup>40</sup>

34 Rolls Royce (2017) <https://www.rolls-royce.com/media/press-releases/2017/24-05-2017-nor-lines-and-rr-sign-landmark-power-by-the-hour-service-agreement.aspx>

35 Zipcar (2018) <https://www.zipcar.co.uk/what-is-zipcar>

36 Desso Holding PSV (2016) <http://www.desso.com/c2c-corporate-responsibility/cradle-to-cradle-achievements/>

37 Arrow (2018) <https://www.arrow.com/s-tech/>

38 Kyocera (2018) [https://www.kyoceradocumentsolutions.eu/index/about/corporate\\_profile/ecosys.html](https://www.kyoceradocumentsolutions.eu/index/about/corporate_profile/ecosys.html)

39 GVA: Gross value added

40 'Resource efficient business models: moving to a circular economy' (2017) [www.rebus.eu.com/resources/reports-and-tools/](http://www.rebus.eu.com/resources/reports-and-tools/).

The products designed for traditional business models must be more durable. Spare parts should be readily available long-term, and components able to be easily and efficiently taken apart to facilitate reuse, repair, and recycling.

**To achieve this, actions we will take include:**

**1.1.1 Invoking the 'polluter pays' principle and extending producer responsibility for packaging, ensuring that producers pay the full net costs of managing packaging waste at end of life**

**1.1.2 Reviewing the effectiveness of legislation designed to minimise packaging and encourage design for greater reuse and recycling**

'Extended Producer Responsibility' (EPR) is a powerful environmental policy approach through which a producer's responsibility for a product is extended to the post-use stage. This incentivises producers to design their products to make it easier for them to be reused, dismantled and/or recycled at end of life. Alongside stakeholders<sup>41</sup>, we consider EPR to be a crucial tool in moving waste up the hierarchy, and stimulating secondary markets. It has been adopted in many countries around the world, across a broad range of products, to deliver higher collection, recycling and recovery rates. The most successful schemes use a range of measures to encourage more sustainable design decisions at the production stage.

### The current state of play



UK-wide producer responsibility (PR) schemes are already in place for four waste streams, putting a level of financial responsibility on producers for their goods at end-of-life. These are:

- Packaging waste;
- End-of-life vehicles (ELV);
- Batteries and accumulators;
- Waste electrical and electronic equipment (WEEE).

While these schemes have been broadly successful in meeting recycling targets, they can do more to drive sustainable design decisions, make it easier for consumers to make more sustainable choices, and fully fund the management of products at end of life. Our reforms will explore how we can incentivise producers to redesign products in support of a more circular economy.

Our existing producer responsibility schemes operate on a UK-wide basis, recognising that many manufacturers and retailers operate as part of UK-wide supply chains. As we reform our existing schemes and develop new schemes we will continue to work with the governments of the devolved administrations.

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<sup>41</sup> For example, see Defra (2018, forthcoming) 'Post Implementation Review of the Waste (England and Wales) Regulations 2011' on [legislation.gov.uk](http://legislation.gov.uk).

## Our framework for EPR

We have developed a set of core principles that will act as a framework for reviewing our existing producer responsibility schemes and developing new EPR schemes:

- 1 **Clear outcomes, objectives, targets and responsibilities** are set for individual EPR schemes to support long-term planning, investment, and research and development by producers in specified sectors and the resource management sector.
- 2 **Producers bear the full net cost of managing their products at the end of their life<sup>42</sup>**, including impacts on the environment and society so that objectives and targets are met.
- 3 **Modulated fees or other measures** are used to encourage producers to make more sustainable design, production and purchasing decisions in line with the waste hierarchy and our resources and waste priorities. For example, producers may pay a lower fee for products which are easy to reuse, repair or recycle and a penalty for those that are not.
- 4 Schemes are designed and implemented to make it **easy for consumers to play their part**, whether through their choices at point of purchase, during ownership of a product, or at the end of its life.

The following principles underpin how we expect the EPR schemes to be organised. They will apply to all reformed and future EPR schemes:

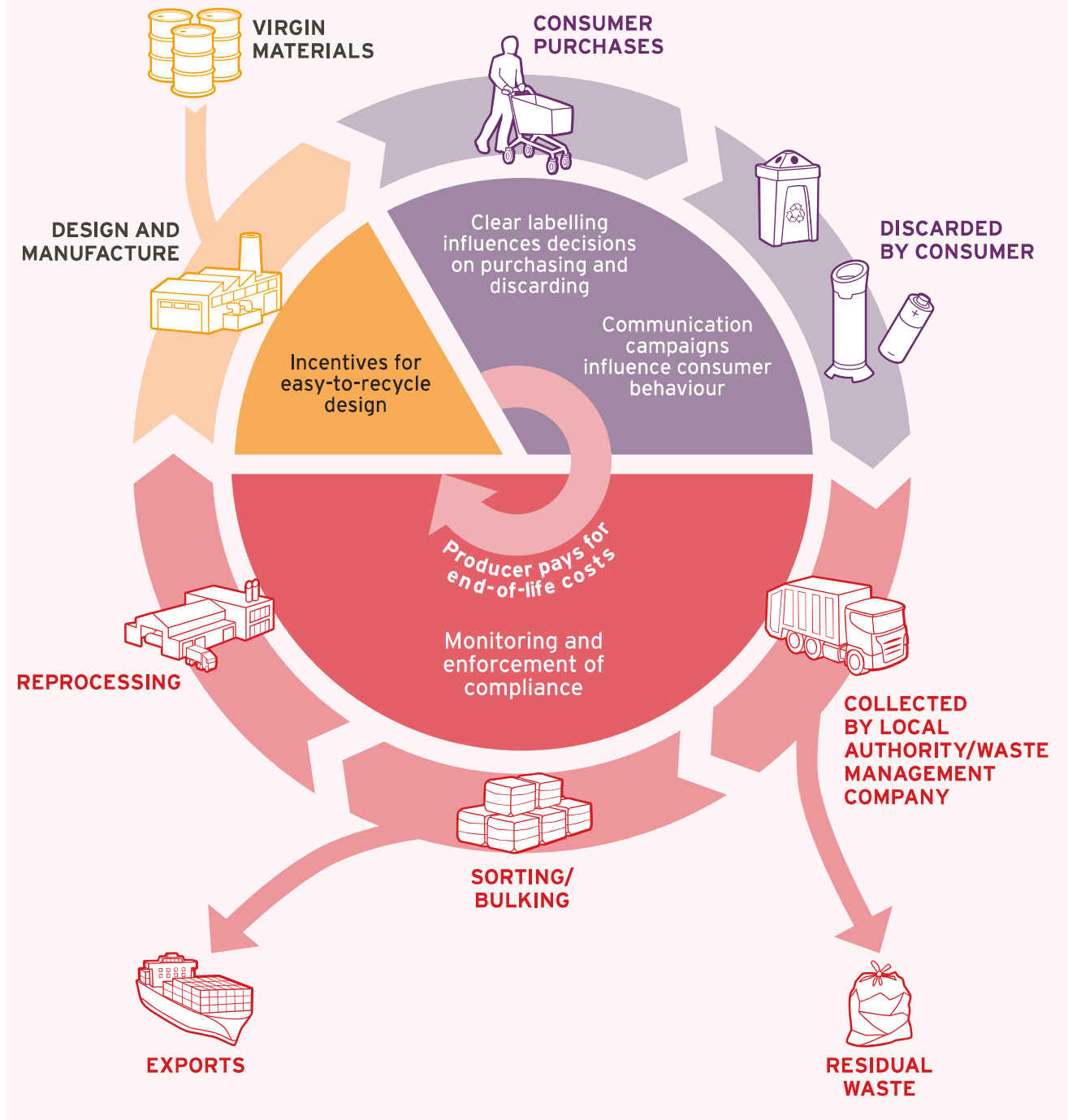
- 5 **All producers are expected to pay into the system**, either directly or through the price they are charged by others in the supply chain, in line with the 'polluter pays' principle. These payments will be proportionate, and without unnecessary administrative burden.
- 6 Appropriate measures are put in place to increase transparency of markets, target setting and costs, in order to drive efficiency and to reduce waste crime along the value chain and ensure **costs to producers are fair, necessary and transparent**.
- 7 **Government will support measures relevant to a scheme's targets and objectives, and ensure that costs to local authorities are met where appropriate**.
- 8 EPR measures should **complement other policy measures** which aim to achieve similar outcomes (such as product standards, resource efficiency criteria and landfill tax).
- 9 **Appropriate governance, compliance and enforcement arrangements** will be decided for each individual scheme, as not all products or materials will benefit from the same approach. These will however need to enable delivery of the principles set out above.

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<sup>42</sup> We will ensure that local authorities are resourced to meet new net costs arising from the policies in this Strategy, including upfront transition costs and ongoing operational costs.

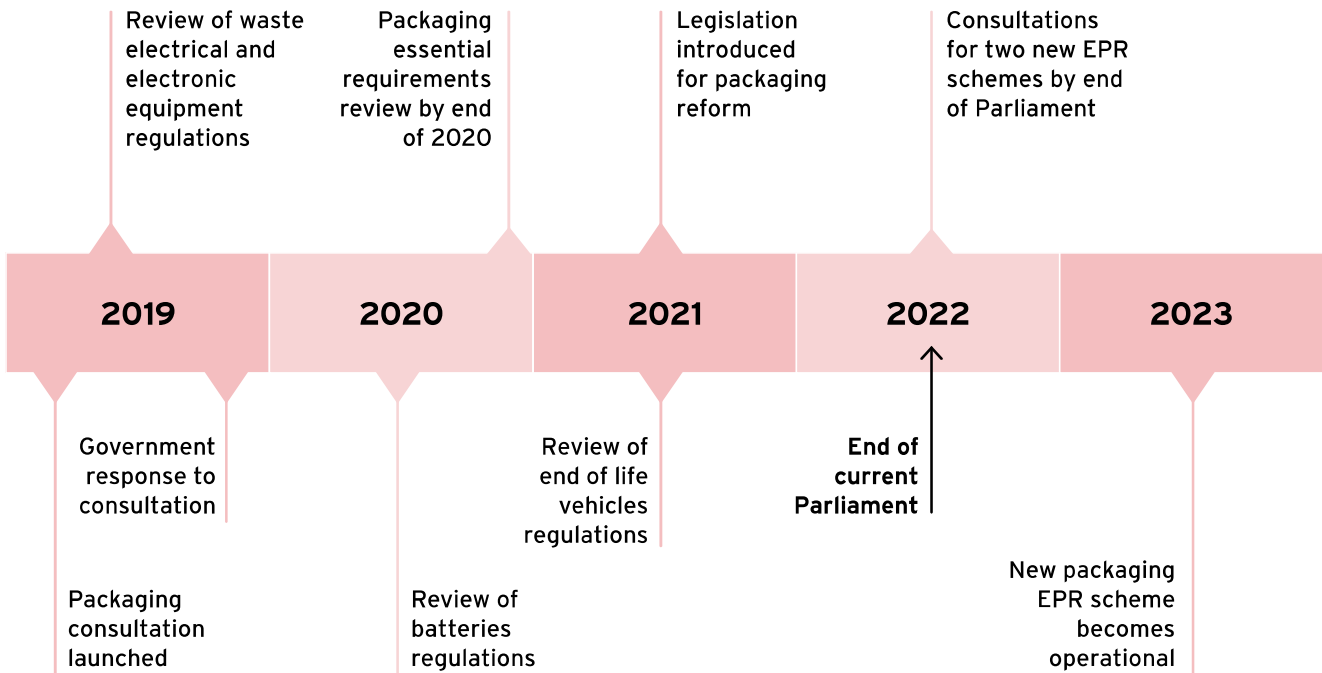


# EXTENDED PRODUCER RESPONSIBILITY



For all EPR schemes, we will put in place appropriate risk-based monitoring and effective enforcement to ensure compliance by all obligated parties, and structure the chosen models to minimise the opportunity for fraud. We will work with producers to ensure that there is a level playing field, so that no one can gain an unfair or illegal advantage.

## EXTENDED PRODUCER RESPONSIBILITY TIMELINE



Indicative timeline only

### Packaging

**Packaging reform is our immediate priority. We will launch a consultation to reform the packaging waste regulations shortly. Our intention is to legislate by 2021 and to have reforms operational by 2023. We will ensure that the reformed system will match or exceed the revised packaging recycling targets set by the EU for 2025 and 2030.**

The Government has made a clear commitment to increase the recycling of packaging waste and the recyclability of packaging. The Producer Responsibility Obligations (Packaging Waste) Regulations have succeeded in ensuring that the UK has met its targets at the lowest possible cost to producers. In the current system, producers of packaging (raw material manufacturers, converters, pack-fillers, sellers and importers) are obligated to meet a share of the annual recycling targets. This share is based on the weight of each type of packaging material that they place on the market. Producers, usually through compliance schemes, purchase packaging waste recovery notes (PRNs) from accredited reprocessors (or packaging waste export recovery notes, PERNs, from accredited exporters), as evidence that they have met their obligations.

**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.**

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.

As we reform the Packaging Waste Regulations we will address these issues and ensure:

- 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.

### Black plastics and rigid plastic packaging

Food retailers use black packaging to make products look more attractive; they also do this when the packaging itself contains recycled content which, without additional pigment, may be of an inconsistent colour. But most black plastic is not recycled because sorting machinery cannot detect the black pigment. Black plastic is one of the problematic packaging materials being addressed through the UK Plastics Pact. Solutions include using detectable pigments, improving optical sorting technologies at plastics recovery facilities or moving away from the use of black plastic packaging.

Some rigid plastic packaging, such as pots, tubs, and trays (but not bottles), can also be difficult to recycle. Some items are composites, made from multiple polymers and are also prone to contamination by food waste. Here too, initiatives are underway that will make it easier for people to recycle. Industry is committed to increasing the recyclability of all plastic packaging and to streamline the plastic polymers used for packaging.

These initiatives by industry, combined with packaging producer responsibility reform, will work together to eliminate from use the most problematic and difficult to recycle plastic packaging.

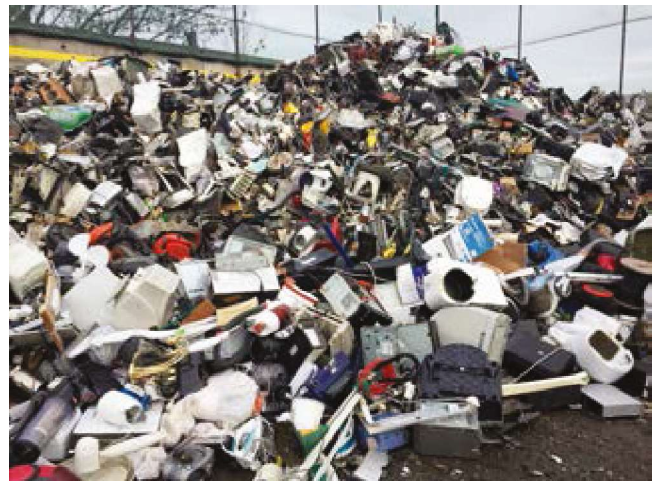
### 1.1.3 Improving producer responsibility for waste electrical and electronic equipment, batteries and end-of-life vehicles

**By the end of 2020 Government will consult on changing the waste electrical and electronic equipment (WEEE) and batteries producer responsibility regimes to incentivise more sustainable product design, increase recycling and ensure alignment with the wider EPR framework. Following these reviews, we will amend the Regulations as necessary.**

#### Waste electrical and electronic equipment

The current system for WEEE is based on 'collective producer responsibility' – producers pay based on their market share in specified equipment categories, but do not have to reprocess their own equipment, unlike in an individual producer responsibility scheme. The 2013 WEEE Regulations have led to separate collections of WEEE, primarily via Household Waste Recycling Centres, with producers financing the full cost of collection and proper treatment. Retailers also have obligations, either to take back waste electrical equipment from consumers, or to engage in a Distributor Take-back Scheme (DTS) which provides funding for local authorities to support collection and reuse. Nevertheless, more needs to be done to increase collections, particularly of small items (often with high plastic content) that are easily discarded as residual black-bin-bag waste. The current system does not reward producers for designing and selling more resource efficient products or services.

We will publish a review of the effectiveness of the 2013 WEEE Regulations in 2019 and will seek views by the end of 2020, including on how the existing Regulations can be amended to encourage better designed products. These will incorporate findings from our consultation on EPR for packaging. The review will explore options for tackling the growing numbers of internet sellers who do not meet their obligations, taking into account the recommendations from the Organisation for Economic Co-operation and Development (OECD) in addressing free-riding in the context of electrical and electronic equipment<sup>43</sup>. We will review the role of retailers, in particular the Distributor Take-back Scheme as a mechanism designed to fulfil their take-back obligations.



43 OECD, Working Party on Resource Productivity and Waste, Extended Producer Responsibility (EPR) and the Impact of Online Sales, 2018. [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WPRPW\(2017\)2/FINAL&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WPRPW(2017)2/FINAL&docLanguage=En)

## Case study: White Goods leasing trial – Beko and Cottsway Housing

One of the problems encountered by some housing association tenants, when moving into a new property, is that they can find it difficult to afford to buy high quality, resource and energy efficient white goods, and may instead end up with appliances that are cheaper to purchase but are lower quality, have higher running costs and do not last long. White goods manufacturer Beko, in partnership with the Cottsway Housing Association in Oxfordshire and the consultancy Resource Futures, is conducting a pilot project to explore whether a resource efficient business model could provide a solution to this issue that works for all the parties.

The pilot involves 36 of Cottsway's tenants. They will be invited to lease up to three white goods (a cooker, a washing machine and/or a fridge-freezer) for a two-year period, during which they will receive a maintenance and repair service, with a take-back option at the end of the lease period.

A parallel feasibility study will assess the potential impact of a national roll-out of such a scheme, if it proves successful, recognising that there are more than 4 million socially rented homes in England, with 2.8 million of them owned by housing associations.

The closed-loop leasing model is designed to reduce the volume of white goods that become waste, whilst providing an alternative method for tenants to access affordable, high quality and efficient appliances which deliver an improved standard of living, and reduced energy, food and clothing costs. The products will be kept in use for longer through good maintenance, and all products will be captured at end-of-life for reuse and recycling by Beko.

## Batteries



The Waste Batteries and Accumulators Regulations have similarly led to an increase in the collection and recycling of portable batteries, alongside a ban on the disposal of industrial and automotive batteries to landfill. However, the current system should be pulling more portable batteries out of residual, black-bin-bag waste. Lead-acid batteries make up only 4% of portable batteries placed on the market every year, but make up over 50% of the batteries that contribute towards collection targets. We estimate that the over-contribution

of lead-acid batteries means that there are over 320 million portable batteries which aren't being recycled every year in the UK<sup>44</sup>. This must be addressed. We will review the current system to target higher recycling rates for non-lead-acid portable batteries, including consideration of chemistry-specific targets and whether there should be increased kerbside collection.

44 Assuming an average of 24 grams per AA battery, and the 7800 tonne difference in lead-acid batteries collected beyond that declared as placed on the market – 2017 UK Portable Batteries Data Summary, National Packaging Waste Database.

Industrial and automotive batteries are changing, with the Government investing £246 million through the Faraday battery challenge to support the development of new battery technologies, and the rapid uptake of electric vehicles. As the number of electric vehicles increases, so will the number of waste electric vehicle batteries. These are currently predominately lithium ion technology cells, defined as industrial batteries, but new lithium ion and alternative chemistries are being developed rapidly. The Faraday Battery Challenge aims to make batteries more sustainable, and is sponsoring research and innovation projects to do just this. This includes promotion of improved technologies to increase the feasibility of remanufacturing or recycling of batteries.

We will work across Government and with industry to ensure that British companies are well placed to respond to these changes. This will include consideration of how to develop and enhance domestic processing infrastructure.

We will consult by the end of 2020 on changes to the batteries regulations to resolve the imbalance in the recycling of portable batteries between chemistry types as well as other emerging issues, such as non-complying internet sellers. Part of this may involve an expansion of collection points, and greater consumer awareness of how to recycle their batteries. This may, for example, include using EPR fees to cover the costs of local and national communications campaigns, or new mandatory labelling requirements. We will also look to ensure that the financial responsibilities placed on battery producers properly reflect treatment costs.

We will consider under these reviews whether closer alignment between the batteries and WEEE regimes, or indeed a single approach for both batteries and WEEE, is possible.

### **End-of-life vehicles**

The End-of-Life Vehicles (ELV) Regulations have led to an improvement in the treatment of scrap vehicles and increased recycling and recovery rates. Vehicle manufacturers and importers are obligated under an “own marque” approach to maintain a collection system into which last owners can deliver their vehicles free of charge, and to ensure that the recycling and recovery targets are met for these vehicles.

In 2016, the UK achieved an overall recovery rate of 92%. Although this is high compared to many other waste streams, this was below the target of 95% and the system is not without its issues. We will continue to consider whether links between target obligations and achievement are sufficiently robust to drive recycling and recovery investment in the sector. We aim to consult on reform to ELV Regulations in 2021.

### **1.1.4 Invoking the ‘polluter pays’ principle and harnessing the potential of EPR for other waste streams**

**By the end of 2025 we will have reviewed and consulted on measures such as Extended Producer Responsibility and product standards for five new waste streams, two of which we plan to complete by 2022.**

We have identified the following five areas as priorities:

- **Textiles** - Including at least all clothing, as well as other household and commercial textiles such as bed linens;
- **Bulky waste** - Including mattresses, furniture and carpets;
- **Certain materials in the construction and demolition sector** - The full list of products and materials in scope are yet to be defined, and will be subject to further review and consultation;
- **Vehicle tyres** - Including tyres from cars, motorcycles, commercial and goods vehicles, and heavy machinery;
- **Fishing gear** - We expect the EU to introduce legislation requiring Member States to implement EPR for fishing gear. We are supportive of this measure and expect to review and consult on our own EPR scheme. We will ensure that any new requirements do not create a competitive disadvantage for our fishing industry, and this will be a key consideration in the consultation.

This list is not fixed and does not exclude the potential to review and consult on EPR for other waste streams if these are identified as being of equal or higher priority.

As we consider EPR more broadly we will put in place appropriate arrangements for business, technical experts and other relevant stakeholders to provide advice to government.

## EPR and the chemicals-waste interface

Chemicals contribute significantly to human wellbeing and economic growth. Very few products on the market are produced without industrial chemicals: around 140,000 chemicals are in known use today. There are regulations and systems in place to help assess the impact of chemicals on human health and the environment before they reach the market, however there are instances where evidence of increased risk comes to light only after some time in use, for example so-called 'legacy chemicals' which contaminate waste streams and pose a barrier to efficient and safe recovery of resources. Other chemical additives, while benign, are disruptive in different ways - in some cases by making items difficult to sort or reducing the quality of recycled material. Regulations allow bans or other restrictions on use to be introduced when evidence becomes available that limitations are needed but this can often be after the chemicals are in widespread use.

Extended producer responsibility can help deal with those items and products which cannot be classified as hazardous waste, for example soft furnishings that contain chemicals which were legal at time of manufacture but which have subsequently been banned.

The chemical content of packaging varies widely across sectors, as does the likelihood of it coming into contact with people or the environment. We want to encourage the use of the safest available chemicals by using green chemistry principles as well as non-chemical alternatives, and will explore how we can promote this approach through producer responsibility.

### 1.1.5 Setting minimum requirements through ecodesign to encourage resource efficient product design

Our producer responsibility reforms should drive the production of more resource-efficient products, such as those which are more durable or readily repairable. We will strengthen this framework through setting minimum ecodesign standards.

Ecodesign is a way of designing products which takes a preventative approach to protecting our natural capital by considering whole lifecycle impacts. To date minimum Ecodesign requirements have been used in the EU to transform the design of energy-using products to reduce energy consumption. Recently Member States voted to include eco-design requirements in product regulation for resource efficiency, taking into account the potential to design for disassembly, repair and recyclability.

Through similar mechanisms to the EU Ecodesign system we will seek to drive change in product standards by gradually removing from the market the least resource efficient products and demanding a certain level of resource efficiency.

We will match or where economically practicable exceed the ambition of the EU's Ecodesign standards which to some extent currently allow for material efficiency standards, by legislating to expand the scope to cover more resource intensive product groups, such as textiles and furniture. We will also explore using this mechanism to mandate that spare parts be made available for repair.

We will also look to address the presence of harmful chemicals in products, to ensure they neither end up in secondary products, where they may pose a high risk due to increased exposure, nor prevent recycling altogether owing to their presence in the waste stream.



## 1.2 Sustainable material choices

**We want producers to use materials which reduce the impacts of products and services over their lifecycle whilst keeping pace with changing customer requirements.**

When we use virgin raw materials in production, we deplete precious resources. The process of extraction can also harm habitats and landscapes, affecting the beauty of our environment and compromising its ability to function. Conversely, making new products from recycled materials (or secondary raw materials) can cause less harm, using less water and energy, and generating lower carbon emissions. When we create new markets for recycled materials, we also make recycling more economically viable. Other ways to boost economically-viable recycling include cutting the use of hazardous materials during production, such as the phase out of Persistent Organic Pollutants<sup>45</sup>.

**Our producer responsibility reforms will help to achieve this. In addition, actions we will take include:**

### 1.2.1 Stimulating demand for recycled plastic by introducing a tax on plastic packaging with less than 30% recycled plastic

The vast majority of plastic packaging used in the UK is made from new plastic, rather than recycled material, as recycled plastic can be expensive than new plastic, despite its lower environmental impact.

Budget 2018 announced the introduction of a world-leading new tax on plastic packaging from April 2022. Subject to consultation, this tax will apply to plastic packaging containing less than 30% recycled plastic, to encourage manufacturers to produce more sustainable packaging and in turn create greater demand for recycled material.



This tax will work hand in hand with our reforms to the current system of producer responsibility for packaging, described above. The revenue collected from these measures will enable investment in further action to address the issues surrounding single-use plastics, waste and litter, to help improve the waste system in the UK. We will consult on these policies together to ensure that they work in a coherent way.

Business will have until April 2022 to adapt their processes before the introduction of the tax. This will allow them to adjust their behaviour and manage any costs they face while ensuring action is still taken to tackle this important environmental issue. As seen following the announcement of the Soft Drinks Industry Levy, Government expects businesses to begin to change their practices before the tax is introduced.

<sup>45</sup> World Health Organisation (2018) [https://www.who.int/foodsafety/areas\\_work/chemical-risks/pops/en/](https://www.who.int/foodsafety/areas_work/chemical-risks/pops/en/)

## 1.2.2 Developing policy proposals to reduce the environmental impacts of clothing, including the impacts of microplastics in the water system

Achieving our overarching targets requires identifying those product or material streams which have the biggest impact on our environment – and one of these is clothing. Across the EU and UK, clothing is the eighth largest sector in terms of household spending. In terms of environmental impact, however, it is fourth - behind only housing, transport, and food<sup>46</sup>. The industry is highly complex, with supply chains stretching worldwide. It affects the world's natural capital in many ways:

- **Water pollution**, from processes such as dyeing: The Global Leadership Award in Sustainable Apparel reports that 20% of freshwater pollution comes from textile treatment and dyeing<sup>47</sup>;
- **Water use**, in particular to grow cotton: The water used to make cotton is 60% of the total water footprint of fabric processing. This considerably outweighs its 43% share of the market<sup>48</sup>;
- **Microplastic shedding**, released when clothes are washed: whilst the impacts are not yet fully understood, we have 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<sup>49</sup>.



Since 2011 we have worked with WRAP, clothing brands, manufacturers, retailers, charities and others to reduce environmental impacts under a voluntary agreement, **the Sustainable Clothing Action Plan (SCAP)**. Its signatories, representing nearly 60% of clothes sold in the UK market and including retailers such as Primark and Marks & Spencer, have agreed to reduce their carbon and water footprints by 15%, waste to landfill by 15%, and whole lifecycle waste by 3.5% by 2020. Good progress has been made in achieving these targets.

The European Clothing Action Plan is extending the SCAP circular economy approach for the clothing sector across Europe. This project involves partners from the UK, Denmark and the Netherlands, and is applying the principles of SCAP on a wider basis.

Taking on board this research and progress to date under the SCAP, we will consider how best Government can continue to support voluntary industry action, as well as the role of wider policy measures to support reuse and closed-loop recycling to reduce the environmental impacts

46 'Valuing Our Clothes – the Cost of UK Fashion' (2017) [http://www.wrap.org.uk/sites/files/wrap/valuing-our-clothes-the-cost-of-uk-fashion\\_WRAP.pdf](http://www.wrap.org.uk/sites/files/wrap/valuing-our-clothes-the-cost-of-uk-fashion_WRAP.pdf) WRAP 2017

47 The State of the Apparel Sector 2015 Special Report (2015) [https://glasaaward.org/wp-content/uploads/2015/11/GLASA\\_StateofApparelSector\\_SpecialReport\\_Water\\_Final\\_151001.pdf](https://glasaaward.org/wp-content/uploads/2015/11/GLASA_StateofApparelSector_SpecialReport_Water_Final_151001.pdf)

48 The European Commission (2006) <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/environmental-improvement-potential-textiles-impro-textiles>

49 UK Government (2018) <https://www.gov.uk/government/news/government-launches-microplastics-research-to-protect-oceans>

of clothing. This work will form part of our review and consultation on extended producer responsibility for textiles, and we will continue to work closely with WRAP and others on future policy development.

### What is fast fashion?

One aspect of the clothing industry we will particularly focus on is so-called 'fast fashion'. Fast-fashion refers to clothing which is produced relatively quickly to capture current trends, but which as a result of typically being poorly made (for example in terms of durability) often ends up as waste following a short lifespan.

The impacts of this are severe, with 300,000 tonnes of clothing in UK household residual waste going to landfill or incineration in 2015<sup>50</sup>. We want to address this, in line with the 'polluter pays' principle. As we consider policy proposals for the environmental impacts of clothing we will give particular attention to fast fashion, including as we consider an EPR for textiles.

### 1.2.3 Supporting the Office for National Statistics to develop a 'National Materials Datahub'

Lack of reliable data on the availability of secondary materials is cited by industry as a barrier to their use. A National Materials 'Datahub' could help address this issue by providing comprehensive data on the availability of raw and secondary materials, including chemicals, across the economy to industry and the public sector, and by modelling scenarios around material availability. The Datahub would be hosted, managed and assured by the Office for National Statistics (ONS), and openly available as a public good. There will potentially be strong synergies between this project and the development of innovative digital solutions for tracking waste (see Chapter 4).

Following a successful pilot project by a joint BEIS, Defra and ONS team in 2018, a further phase of work has been commissioned, concluding in April 2019, to determine the need for and viability of such a Datahub, and to develop the scope and business case for delivery if appropriate. Delivery of the final product will be dependent upon this phase demonstrating benefits to industry.

An Advisory Group, including representatives from industry, will guide the project through this phase, and ONS, BEIS and Defra will continue to ensure links to related initiatives are identified and exploited - for example the development of electronic tracking of waste.

<sup>50</sup> Government evidence to Environmental Audit Committee enquiry on the sustainability of the fashion industry (2018) <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environmental-audit-committee/sustainability-of-the-fashion-industry/written/88753.html>

## 1.3 Manufacturing processes which maximise resource productivity

**We want to increase the material efficiency of production and manufacturing processes, as part of our strategic ambition to double resource productivity by 2050.**

Poor product design and inefficient production processes result in valuable material resources being wasted which is not only a waste of money but also has negative environmental impacts. There is a wide variation in the productivity of different businesses across the UK; improving resource efficiency increases productivity, cuts carbon emissions and enhances resource security. Creating waste or by-products during manufacturing processes cannot always be avoided. But one company's rejects can be another's raw materials and we want to incentivise businesses to do just this.



**To drive progress, actions we will take include:**

### 1.3.1 Developing a model for realising resource efficiency savings, working with businesses through 'resource efficiency clusters'

One of the key barriers to increasing the resource efficiency of businesses is insufficient information to enable them to cut resource use and waste. Small and medium-sized businesses in particular may lack the budget, personnel or time to devote to researching issues around waste and resource use. Yet increasing resource efficiency can be good both for the environment and the bottom line: Defra research suggests<sup>51</sup> that businesses overall could save £3 billion annually through short-term investments by making their processes more resource efficient.

One way to support businesses to innovate and achieve such savings is by supporting clusters of them to come together to share knowledge and good ideas with counterparts - this may be on a local or regional level, on a sectoral level, or by bringing two or more sectors together. By joining forces businesses can spread the costs and leverage the benefits from economies of scale. Specialist technical advice can also strengthen the impact of these clusters.

To begin with we will review the results being achieved in a small number of existing LEP-led, local authority or industry-led sectoral business clusters, and have commissioned research for this purpose. We will use this review to develop models and plans for taking this idea further. Subject to the findings, we will roll out plans from 2020. Through this Strategy we invite expressions of interest by LEPs or sectoral groups in taking this work further.

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<sup>51</sup> Oakdene Hollins for Defra (2017) [Business Resource Efficiency Quantification of the no cost/low cost resource efficiency opportunities in the UK economy in 2014](#)

## Case Study: Leeds City Region Enterprise Partnership (LCREP)

In February 2017, The Leeds City Region Enterprise Partnership launched a £2.65m programme to support small and medium-sized enterprises (SMEs) to become more resource efficient.

The LEP's Resource Efficiency Fund (REF) provides specialist advice and financial support to help make businesses more efficient with their energy, water and waste.

The process begins with eligible businesses benefitting from a free efficiency audit of their current operations to assess where they can make savings. Specialist advisors work with businesses to analyse the results and address areas where resource efficiency can be improved. Businesses are then able to apply for financial support to invest in efficiency measures.

The benefits for businesses are huge - they can invest in their operations, use resources more efficiently, save money and have a positive impact on the environment.

### 1.3.2 Developing plans to increase resource efficiency and minimise waste in the construction sector, working with the Green Construction Board



We will only achieve our overarching resource productivity and waste targets by working with the key sectors through which resources flow. Constructing, maintaining and repairing our built environment - our homes, schools, offices, hospitals and infrastructure - represents a major material resource flow in the economy. Such material flows inevitably create waste, with the construction, excavation and demolition sector estimated to have produced around 120 million tonnes in 2014 in the UK<sup>52</sup>.

The construction sector has already made considerable progress in increasing resource efficiency. Between 2008 and 2012 WRAP's Halving Waste to Landfill commitment to significantly reduce the amount of construction, demolition and excavation (CD&E) waste successfully stimulated industry wide discussion on construction waste. By 2012 over 800 companies had signed the commitment to reduce waste diverting 5 million tonnes of waste per year from landfill and saving £400 million per year<sup>53</sup>. But there is considerable scope for further improvement<sup>54</sup>, something which has been underlined by our stakeholders<sup>55</sup>.

52 Defra (2018), Digest of waste and resource statistics, 2018 edition.

53 The Environment Agency (2016) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/652423/Regulating\\_the\\_waste\\_industry\\_2015\\_evidence\\_summary\\_LIT\\_10488.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/652423/Regulating_the_waste_industry_2015_evidence_summary_LIT_10488.pdf)

54 Financial savings available through resource efficiency opportunities estimated at £1,589m/year (Eunomia, Material Resource Efficiency Report, 2017).

55 For example in the Defra (2018, forthcoming) 'Post Implementation Review of the Waste (England and Wales) Regulations 2011' on legislation.gov.uk.

The construction industry is on the brink of fundamental change with developments such as digitalisation, off-site manufacturing and new, innovative construction materials and techniques offering huge potential for increasing resource efficiency. The recently announced Construction Sector Deal<sup>56</sup> recognises this and will deliver an investment of up to £420 million between industry and Government to accelerate this transformation. The focus on transforming construction through use of digital building design and new manufacturing technologies offers a unique opportunity to reduce waste and increase productivity, with an overall aim of a 50% reduction in build time.

The Green Construction Board<sup>57</sup> has already developed guidance<sup>58</sup> for increasing resource efficiency and reducing waste in the sector through the adoption of circular economy principles. We will work with them to establish a definition of zero avoidable waste in the sector and develop an ambitious route map by 2020 setting out how and when this can be achieved.

We will also work with the construction industry in preparation for reviewing and consulting on EPR for certain construction materials.

### 1.3.3 Managing chemicals sustainably and addressing barriers to reuse and recycling posed by their use, through a Chemicals Strategy

As with construction, there are significant opportunities for resource efficiency savings in the chemicals sector<sup>59</sup>, and we want to put in place the framework for them to be realised. This sector is additionally important due to the presence of 'legacy chemicals' in products, which can contaminate waste streams and pose a barrier to efficient and safe recovery of resources. Currently such chemicals cannot be tracked through the supply chain, meaning recyclers often don't know which chemicals are present in the materials they receive.

Measures such as EPR and Ecodesign can help address this. But we can, and will, go further. Our Chemicals Strategy will set out further detail on how we will strengthen the chemicals-waste interface and will:

- Consider how we address the identification and tracking of chemicals in products across supply chains to reduce barriers to reuse and recycling, whilst preventing a risk from harmful chemicals.
- Set out our approach to working internationally to strengthen the standardisation of methods that assess chemical safety. This will support the mutual acceptance of data to identify and share information on emerging concerns and new approaches to risk assessments.

56 UK government services and information (2018) <https://www.gov.uk/government/publications/construction-sector-deal>

57 Construction Leadership Council (2018) <http://www.constructionleadershipcouncil.co.uk/workstream/sustainability/>

58 Green Construction Board (2018) <https://www.greenconstructionboard.org/index.php/resources/circular-economy>

59 Estimated at £306m/year (Eunomia, Material Resource Efficiency Report, 2017).

We will also:

- Shape the post-2020 framework under the Strategic Approach to International Chemicals Management (SAICM) to ensure:
  - Actions are based on strong scientific evidence;
  - A focus on tackling chemicals throughout the product lifecycle;
  - A global approach to resource and waste issues.
- Take action to address the issues associated with the presence of persistent organic pollutants (POPs) in products, including by:
  - Establishing a programme of work to effectively implement regulations for both legacy and future products containing POPs;
  - Continuing to fund targeted research on POPs and other substances of concern aimed at increasing our knowledge base;
  - Encouraging innovation on chemical identification and extraction technologies, working with stakeholders and industry;
  - Continuing to engage internationally to align rules on the classification of hazardous chemicals with hazardous waste rules.

## 1.4 Resource efficient distribution

The distribution of products to the consumer can result in wasted resources across the supply chain. It's not just the amount of packaging used; it's what happens if a customer is dissatisfied with their purchase. In a competitive marketplace, retailers trading on the quality of their customer service have introduced return policies that go beyond their statutory obligations in respect of faulty goods. In the electronics sector the typical return rate is up to 10%<sup>60</sup>. Where a business focuses on reducing damage to products during distribution, and thereby minimises returns, it can make clear cost savings, boost customer satisfaction and improve resource efficiency.

Separately, the growing popularity of online retailing has completely transformed how people shop. More orders come straight to the doorstep, meaning there are more delivery vehicles on the road and more packaging left for the consumer to handle.

We want to minimise the impact of distribution on the environment, and make sure business models are designed around 'circularity' and keeping products in use for longer. This means adopting more resource efficient models which generate less waste, fewer returns, and make better use of reverse logistics<sup>61</sup> to capture value and avoid wasting resources unnecessarily.

UK legislation requires some retailers to take back unwanted electrical equipment and batteries, and recycle a proportion of the packaging they put on the market. We propose to revise these regulations, subject to consultation, to ensure that producers bear the full net costs of dealing with products as they become waste. This includes making sure that online sellers with an internet-only presence are fully meeting their obligations.

**As we reform existing producer responsibility systems, and look to introduce new EPR schemes, we will consider how retailer take-back and reverse logistics can be incentivised. The forthcoming consultation on packaging waste will consider opportunities for incentivising reverse logistics and back-hauling<sup>62</sup> of packaging waste.**

### Case Study: Sony Interactive Entertainment reverse logistics



For over 20 years Sony Interactive Entertainment (SIE) has provided affordable repair and reuse of PlayStation consoles outside of warranty in the UK. Up to 4000 consoles a month can be repaired, avoiding the creation of electronic waste and unnecessary consumption of virgin resources.

60 WRAP (2017) Switched On To Value <http://www.wrap.org.uk/sustainable-electricals/switched-on-to-value>

61 "All activity associated with a product/service after the point of sale, the ultimate goal to optimise or make more efficient aftermarket activity, thus saving money and environmental resources." Reverse Logistics Association (2018) <http://www.reverselogisticstrends.com/reverse-logistics.php>

62 Where companies which use packaging have their own systems for managing that packaging once it becomes waste.



To return a console for repair consumers can take it back to the retailer, use a website, or phone a dedicated call centre to organise for it to be collected. SIE partners with a specialist logistics company, Cycleon, who manage and organise the collection of consoles from retailers and customers. They take the consoles to a dedicated service centre, Infoteam, who carry out diagnostics and repairs. Any consoles beyond economic repair are harvested for reusable spare parts before being sent to secure facilities for recycling. Cycleon also organise carriers to return the repaired or replacement consoles to customers.

As the cost of repairing a console is less than the cost of a new product the out-of-warranty repair service is viable and SIE's reverse logistics operations successful. The overall process of console repair is also quick and easy from the customer's perspective; the partnership with a 4PL has brought the end-to-end average time within 21 days. Consoles are complex products using proprietary technology; this service depends on having dedicated expert technicians at Infoteam.

The repair process is made more efficient by collecting data on recurring issues from the service centres. This information is fed back to product design teams and used to improve the product, making consoles more reliable in the longer term; there has been an 80% reduction in return rates from the initial PlayStation®4 model to the most recent. This reverse logistics business model benefits both the consumer and the environment as it considers the whole lifecycle of the product, helps to improve product reliability, and avoids the need for consumers to replace broken consoles unnecessarily through an efficient collection, repair and return process.

## Chapter 2

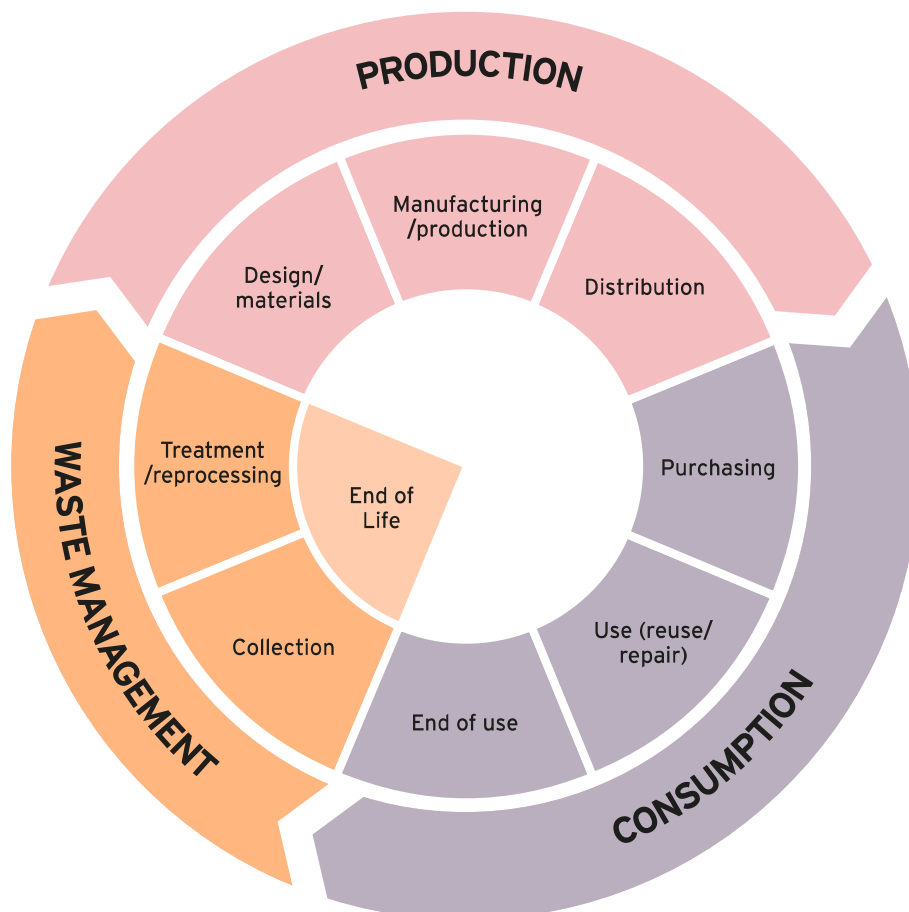
# HELPING CONSUMERS TAKE MORE CONSIDERED ACTION



Consumers deserve to know more about how they can unlock hidden value for themselves, and for the good of the environment. Our policies will help consumers identify and access more sustainable products, and extend the lives of them when they do. And, when it's time to dispose of them, we will help them recycle the materials contained within.

This chapter sets out how we will:

- Incentivise consumers to purchase sustainably
- Provide consumers with better information on the sustainability of their purchases
- Ban plastic products where there is a clear case for it and alternatives exist
- Address barriers to reuse
- Support the market for remanufactured goods
- Encourage appropriate disposal of used products
- Lead by example though procurement and the Greening Government Commitments



## 2.1 More sustainable purchasing

Most people want to do the right thing – and we want to help them do it. This means making it easier for people and organisations to buy products that are better designed to be re-usable or upgradable – that have longer lives and lower environmental impacts. Producers need to help consumers by giving them better information about the long-term as they choose what to buy.

We welcome the fact that, already, consumers are taking advantage of a growing range of ‘win-win’ collaborative and sharing business models, which offer good value to the customer and are also less harmful to the environment – audio and video-streaming services, for example, and car-rental clubs.

We fully support this type of consumption model. It promotes the design of more durable products because the producer can look forward to receiving revenues from them for longer. It also creates opportunities for closed loop remanufacturing and recycling processes that keep precious natural resources in use for longer and prevent the damage to our ecosystems caused by dealing with waste.

**To achieve this, actions we will take include:**

### 2.1.1 Incentivising consumers to purchase sustainably, for example by consulting on extending and increasing the carrier bag charge

Since large retailers in England began charging 5p for a carrier bag in October 2015, 15.6 billion fewer bags have been handed out to shoppers by the seven main retailers – a drop of 86% in 2017/18 compared to 2014 levels<sup>63</sup>. A key principle of our Strategy is that we want to provide opportunities for people to do the right thing, and incentivise them to do so, including using taxes and charges where appropriate. The success of the carrier bag charge demonstrates the difference even relatively small incentives can make. So, we will consult on increasing the existing 5p charge and extending it to all retailers on a mandatory basis. In considering future environmental policy, the Government will look at the relative costs and benefits of different approaches, including taxes, charges and other policy instruments such as regulations or bans, as we have proposed for plastic straws, stirrers and cotton buds, for example.



### 2.1.2 Providing consumers with better information on the sustainability of their purchases through better product labelling

In certain circumstances, the most appropriate policy is to provide consumers with better information when they purchase. One way of doing this is through **Ecolabels**, which are used around the world to show that a product or service meets a certain standard of environmental

63 Defra (2018), Single-use plastic carrier bags charge: data in England for 2017 to 2018. <https://www.gov.uk/government/publications/carrier-bag-charge-summary-of-data-in-england/single-use-plastic-carrier-bags-charge-data-in-england-for-2017-to-2018>

performance. Certification marks provide a level of trust for consumers and aim to reduce dubious 'green washing' by manufacturers and brands. Ecolabels exist for a range of products and cover a range of environmental impacts from production to design to disposal.

At present the UK uses the EU Ecolabel scheme but there is low take-up and few consumers recognise it. Meanwhile, private sector ecolabels have emerged that cover a range of aspects around environmental sustainability. We will address this confusion and ensure consumers are provided with better information, starting by working with key stakeholders including industry, trade associations and standard-setting bodies to develop options for a domestic ecolabel, before consulting more widely. We have also commissioned research on the extent to which consumers given factual information up front then make more environmentally sustainable decisions, particularly when buying repairable, upgradable and/or recyclable products.

Among the options available are multi-factor schemes that enable products to obtain an ecolabel; those that make consumer information on products mandatory; and schemes which provide different ratings - similar to current energy labelling. Issues that we will consider include how to encourage people to buy on the strength of those labels, and whether a scheme requires statutory backing, given that private sector standards are emerging alongside well-recognised ISO standards.

We will draw links between ecolabel schemes and our proposals to extend producer responsibility systems and other relevant fiscal measures. For example, under extended producer responsibility for packaging we could require producers to ensure that packaging items are clearly labelled as to whether or not they can be recycled<sup>64</sup>. In the interim, we will continue to work with businesses to improve existing consumer labelling through groups such as the Council for Sustainable Business and the UK Plastics Pact. We will also explore whether consumer labels should identify the level of recycled content within the packaging.

## Disposal of wet wipes

We all use the wastewater and sewage system every day, and can help it run smoothly and efficiently. Defra is working with the water sector and wet wipe makers on ways to tackle the problem of backed-up sewers. Revised industry guidance requires a 'Do Not Flush' label to be displayed far more prominently on non-flushable wipes. We support the water industry's ongoing work to ensure that any wipes which are marked as being 'flushable', are plastic free and are truly flushable, meaning they can enter the sewage system without causing blockages or harming the environment.

<sup>64</sup> This means that the consumer can be confident that the infrastructure is in place to collect and sort the packaging waste, and that it can be recycled back into new products.

### 2.1.3 Banning the most problematic plastic products where there is a clear case for it and alternatives exist

In general, we prefer to help people and companies make the right choice, rather than banning items outright. There may, however, be times when a ban is appropriate as part of a wider strategic approach. We have already banned the sale of plastic microbeads, consulted on banning plastic drinking straws<sup>65</sup>, stirrers and cotton buds, and are assessing the impact of banning other single-use plastic items. We will continue to review the latest evidence on problematic products and/or materials to take a systematic approach to reducing the use of unnecessary single-use plastic products including problematic packaging materials, in line with our commitment to match and where economically practicable exceed the ambition of the EU in this regard.

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<sup>65</sup> A recent study indicated that up to 4.7 billion plastic straws are used and thrown away annually in the UK DEFRA (2018) [https://consult.defra.gov.uk/waste-and-recycling/plastic-straws-stirrers-and-buds/supporting\\_documents/Consultation%20Document.pdf](https://consult.defra.gov.uk/waste-and-recycling/plastic-straws-stirrers-and-buds/supporting_documents/Consultation%20Document.pdf)

## 2.2 More reuse, repair, and remanufacture

Consumers are often encouraged to replace a damaged item with a new one, even when they'd prefer to repair or reuse it. We want to extend the life of products and preserve our natural capital. For this to happen, all consumers – whether individuals or businesses – must be able to find affordable spare parts and technical advice, or access affordable repair services.

Ideally, a product no longer needed by one consumer should be reused by another. We need to encourage reuse through Household Waste Recycling Centres (HWRCs), for instance through contracts with charities. At present, barriers prevent certain products brought to HWRCs from being reused or resold, even when members of the public would happily take them away. Online platforms such as Gumtree, Freecycle and Shpock support reuse, which we welcome – but it is still important that it's as easy as possible for people to reuse and repair.

Manufacturers should also be prepared to take products back and return them to their original state, if feasible – a process known as 'remanufacturing', which benefits both the economy and society.

Another way of extending lifespans is to embrace retail models which provide services or rent out products – thereby sharing resources, and facilitating repairs and upgrades. We've seen this happen with the growing popularity of car club businesses like Zip Car: there are also companies of long standing whose business model rests on renting out machinery, including for DIY use.

**To encourage this, actions we will take include:**

### 2.2.1 Extending product lifetimes through warranties and disclosure

The Consumer Rights Act 2015 says goods should be of satisfactory quality and fit to do the job intended. Yet whilst a consumer has up to six years to assert their rights, there is uncertainty as to the duration for which a consumer can expect a product to last. When a product becomes broken or faulty, even after a short time, consumers may feel they have no option but to replace.

Guarantees and extended warranties, whilst not affecting a consumer's statutory rights, can help address the problem. A guarantee is usually a free promise by the manufacturer or retailer to fix or replace the problem, whereas an extended warranty is offered on a voluntary basis, and usually at a premium, by manufacturers, covering consumers against the cost of repairs and replacements. These frameworks cover manufacturer faults, for example mechanical or electrical failure, though generally not accidental damage.

Wider use of such systems can promote resource efficiency. They will encourage manufacturers to design and manufacture products that last longer and will support re-use and repair activities. They can help combat early obsolescence of products and support more resource efficient business models, such as leasing or shared ownership.

We will explore the role that guarantees and warranties can play in ensuring products stay in use longer and maintain their value. We will consider options including mandatory disclosure of expected product lifetimes, mandatory extended warranties, and incorporating warranties into

labelling, for example a 5 year warranty label. In conjunction with industry and other stakeholders, we will explore reform to consumer rights law and ecodesign legislation to make use of these systems where the market is not delivering the necessary outcomes.

### 2.2.2 Addressing barriers to reuse at Household Waste Recycling Centres and consulting on further measures to boost reuse, including reporting and reuse targets

We want to keep viable products in active use for longer. This preserves our stock of natural resources and minimises the impacts of dealing with waste. It also helps those who are less able to afford new possessions, and avoids the carbon emissions caused when new products are made and distributed.

When items arrive at Household Waste Recycling Centres (HWRCs) it's an opportunity to identify and segregate good quality products that are suitable for reuse. Some local authorities already do so to excellent effect, and there are also good examples of collaborative working with charities. Overall, however, there is considerable scope for being more ambitious.

It's in the interests of local authorities to promote more reuse, for instance through onsite shops at HWRCs: they receive more income from selling on quality working goods than recycling them. A pushbike might be sold second-hand for around £10-15 compared to the 80p or so it would fetch in scrap value, for example<sup>66</sup>. Similarly, selling or even allowing residents and small businesses to take such items can save local authorities on the cost of disposal, including landfill tax. The further benefits to society, in terms of creating local jobs and skills training, are explained in a number of research reports<sup>67</sup>.



We are conscious that current legislation may appear to create barriers to reuse. Waste is defined with reference to the end-user's intentions, an intention to discard, and this is sometimes regarded as prohibiting local authorities from identifying items that can be reused. Local authorities are also often rightly concerned about risk and liability.

We will amend waste regulation so that HWRCs perform a more effective role in resource efficiency, for example by clarifying the duty as to re-use. We will also explore further measures, such as providing further guidance, setting reuse targets for local authorities, requiring them to set their own targets, or requiring reporting to encourage provision of reuse facilities. In reviewing and consulting on extended producer responsibility for new waste streams, we will consider how to encourage

66 WRAP (2012) [http://www.wrap.org.uk/sites/files/wrap/INH0449\\_HWRC\\_Guide\\_%20final2\\_0.pdf](http://www.wrap.org.uk/sites/files/wrap/INH0449_HWRC_Guide_%20final2_0.pdf)

67 WRAP (2018) <http://www.wrap.org.uk/content/environmental-and-economic-benefits-re-use>



greater reuse, in particular for textiles and large household items, including furniture. In this way, we will work towards ensuring that measures which impact on local authorities are aligned with the waste hierarchy, so that reuse is where it should be in day-to-day management of waste and resources.

### 2.2.3 Encouraging collaborative working on reuse

Collaborative action, especially with third-sector organisations, is an important part of effective support for reuse. Second-hand clothing collections for example, largely by the charity sector, have been very successful in the UK with approximately 323,000 tonnes going through charity shops in 2016/17<sup>68</sup>. A considerable proportion of clothing and textiles, however, continues to go to landfill, particularly when they are of insufficient quality for reuse. Considering the water and energy used in producing textiles, from growing cotton to the manufacturing process, the impact of doing so cannot be ignored, and more can be done in partnership with others.

WRAP has produced advice for local authorities including the Household Waste Recycling Centre Guide<sup>69</sup>, which is aimed at encouraging more partnerships between local authorities, waste management companies and third sector organisations. It also hosts a local authority household waste prevention webpage<sup>70</sup> with good practice case studies<sup>71</sup> and communications materials.

We will explore how the role of the third sector in reuse can be maintained and enhanced, including through promotion of best practice through guidance. We will consider how to boost collections for clothing, including encouraging further charity sector action as well as exploring separate collections by local authorities.

#### Case Study: Business in the Community's Circular Office initiative



Business in the Community's (BITC) Circular Office initiative<sup>72</sup> is a means of bringing businesses and other organisations together to learn about and implement circular opportunities. Almost all organisations have an office whose construction and contents - from walls and furniture to IT equipment, food, uniforms, lighting and carpets - depend on a vast range of natural resources. The Circular Office initiative is about changing the way we design, use and operate in the places we work to

eliminate waste and create more efficient, resilient spaces which contribute to the long-term sustainability of businesses, the environment and the wider economy.

68 Charityretail.org (2017) <https://www.charityretail.org.uk/wp-content/uploads/sites/3/2018/01/CRA-A5-Digital-Flyer.pdf>

69 WRAP (2012) [http://www.wrap.org.uk/sites/files/wrap/INH0449\\_HWRC\\_Guidance\\_2015\\_7%20FINAL.pdf](http://www.wrap.org.uk/sites/files/wrap/INH0449_HWRC_Guidance_2015_7%20FINAL.pdf)

70 WRAP (2018) <http://www.wrap.org.uk/content/household-waste-prevention-hub>

71 WRAP (2018) <http://www.wrap.org.uk/content/how-case-studies-and-videos-0>

72 BITC (2018) [https://www.bitc.org.uk/sites/default/files/circular\\_office\\_guide\\_final\\_3.pdf](https://www.bitc.org.uk/sites/default/files/circular_office_guide_final_3.pdf)

## 2.2.4 Supporting consumer campaigns to promote reusable alternatives, such as encouraging water companies and retailers to provide more free public refill points



Reuse is not just about making use of products which others no longer need - it's also about replacing single-use or short lifetime products with re-usable alternatives. Re-usable water bottles and coffee cups, for instance.

We want to make this an easier option for consumers, be they in coffee shops, in other retail outlets or on the public transport network. We are therefore pleased to see new refill points being installed in every major city and town in England - there are now over 14,000 refill points on City to Sea's free Refill app, and they aim to double this by 2020. Water UK is also committed to expanding to

areas outside of city centres and including more options for rural communities. We continue to work closely with Water UK, which represents water companies, on this initiative and welcome the industry's investment in this area through the City to Sea charity.

National Refill Day was launched in September 2018 to raise awareness for reusable plastic bottles and encourage the public to reduce plastic waste. We will continue to support initiatives from business and civil society where doing so drives further improvement and explore other avenues for progress in consultation with stakeholders.

## 2.2.5 Supporting the market for remanufactured goods, including by developing quality assurance schemes to boost consumer confidence

If products aren't suitable for reuse, for example because they are damaged, they may be suitable for remanufacture. Sometimes called reconditioning, this process restores a product either to its original state or very close to it, preserving its value and extending its life. It's a market we want to support, given the benefits offered by remanufactured products. As well as the more obvious environmental benefits, the economic benefits are considerable - with remanufacturing potentially contributing up to £5.6bn to the UK economy<sup>73</sup>.

While some companies are already shifting into this market, there are barriers. Distribution and reverse logistics systems aren't set up to support consumers' return of used products for remanufacture - something our producer responsibility reforms aim to address.

73 All-Party Parliamentary Group on Sustainable Resource Use (APSRG) report, (2014) [https://www.policyconnect.org.uk/apsrg/sites/site\\_apsrg/files/apsrg\\_-\\_remanufacturing\\_report.pdf](https://www.policyconnect.org.uk/apsrg/sites/site_apsrg/files/apsrg_-_remanufacturing_report.pdf)

We will explore whether a product assurance scheme, with a certified mark, would boost consumer confidence and whether this would stimulate the market for remanufactured goods. The mark would show that products had been tested, and fully complied with standards for an equivalent new product.

We will work with BSI and other key partners to explore the development of such a scheme, and the creation of industry working groups to recommend standards for remanufacture. We will also consider further actions to support remanufacture, engaging stakeholders and consulting on options.

### **2.2.6 Supporting large-scale reuse and repair through national planning policy**

For large-scale reuse and repair, it is important that the National Planning Policy for Waste<sup>74</sup> (NPPW) continues to embrace circular economy thinking, and integrates resources and waste management to maximise reuse in accordance with both the waste hierarchy and paragraph 8 of the NPPW (including sharing and renting products and goods, as well as recycling). We will continue to work across Government to ensure that the planning system helps deliver our objectives.

### **2.2.7 Exploring the development of a scheme for companies to report on their reuse, repair and recycling**

As part of our wider work on metrics and reporting, we will explore ways to further incentivise companies to reuse, repair and recycle. This will include how companies can be asked to report on their efforts around reuse and repair, and recycling - this in light of the progress that has been made on mandatory carbon reporting by companies. Reporting on resource usage is more complex, and we will begin by exploring the relevant metrics.

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74 UK Government services and information (2014) <https://www.gov.uk/government/publications/national-planning-policy-for-waste>

## 2.3 Appropriate disposal at end of use

Recycling, as it stands, is confusing for citizens. It must be made clearer and easier for individuals and organisations to know which objects can be recycled, and which is the correct bin for disposing of them. The same is true of 'on the go' recycling away from the home, at school or in the office where, for example, what's acceptable to put in bins can be unclear. A more streamlined system will help cut littering and fly-tipping, and capture higher quality materials.

Websites such as Recycle Now<sup>75</sup> are full of useful consumer advice about how and where to recycle, and why it's important - helping people do the right thing. Information like this helps to ensure that resources end up in a place where their value can be captured, helping to preserve our stock of natural resources.

**Chapter 3 sets out our detailed proposals for standardising recycling collections from households and businesses. In addition, further actions we will take include:**

### 2.3.1 Introducing a Deposit Return Scheme (DRS) for single-use drinks containers, subject to consultation

UK consumers go through an estimated 14 billion plastic drinks bottles, 9 billion drinks cans and 5 billion glass bottles a year<sup>76</sup>. The reported recycling rates are significantly lower than many other major developed economies at around 70%, leaving around 4 billion plastic bottles, 2.7 billion cans and 1.5 billion glass bottles not recycled every year.



This tells us that valuable recyclable material is being lost to landfill or incineration - or, worse, ends up in the open environment where it can have a serious impact on ecosystems and local people. Indeed, single-use drinks containers, or parts of them, regularly feature among the top ten items found on UK beaches<sup>77</sup>. It is therefore important that we encourage changes in behaviour to stop littering at source and capture more recyclable resources.

A 2018 report into drinks container recycling and litter reduction, commissioned by Defra from the Voluntary and Economic Incentives Working Group, found that plastic drinks bottle collection/recycling in some European countries with a DRS and some form of kerbside/household recycling collections can be as high as 95-98%. It also found that some rates of collection/recycling of aluminum, steel and glass drinks containers in countries with a DRS can be between 87 and 97%.

75 [www.recyclenow.com](http://www.recyclenow.com) is the national recycling campaign for England, supported and funded by Government, managed by WRAP and used locally by over 90% of English authorities.

76 Voluntary and Economic Incentives Working Group (2018) [Voluntary and Economic Incentives Working Group report 2018](#)

77 Marine Conservation Society (2017) [Marine Conservation Society, Great British Beach Clean 2017 Report](#)

## How does a DRS work?

Consumers are charged a deposit up-front when they buy a drink in a single-use container. This can be redeemed when the empty container is returned. In international schemes consumers can either return containers through a reverse vending machine or manually to a retailer/outlet to redeem the deposit value.

We will introduce a DRS in England for single-use drinks containers, subject to consultation. The consultation will look at how the scheme might sit alongside other measures to boost recycling and how it would operate - including administration and governance arrangements, and the setting of deposit levels. Along with our proposed reforms to packaging waste producer responsibility regulations, our proposals will ensure that more recycled materials are used, and packaging is reprocessed and recycled more often.

Our preference is to adopt a UK-wide approach to DRS if it is introduced. Waste and recycling policy is a devolved matter but we will continue to work closely with the Devolved Administrations on this policy area.

### 2.3.2 Developing measures to reduce the environmental impacts of disposable cups

Many of those who responded to the Government's call for evidence on single-use plastic waste highlighted disposable cups as a problem, highlighting that they are often not recycled due to their plastic lining and are often littered. The Government recognises this is a problem. As set out in the 2018 Budget, the Government has concluded that a levy on all disposable cups - for both hot and cold drinks - would not, at this point, deliver a decisive shift from disposable to reusable cups across all beverage types. Businesses are already taking steps to limit their environmental impact, but we expect industry to go further and will return to the issue if sufficient progress is not made. In the meantime we will consider other options and our forthcoming consultations will consider whether or not we could drive further progress by:

- Including disposable cups filled at the point of sale in a deposit return scheme;
- Using the reformed packaging producer responsibility system to provide a strong incentive for business to provide cups that are easy to recycle;
- Setting targets to encourage higher levels of recycling.

This list of potential options beyond a levy is not exhaustive - the Government wants to hear views on these and any other ideas to address this problem.

### 2.3.3 Producing consumer guidance for the recycling, resale, reuse and disposal of consumer internet-connected devices

The Internet of Things is a rich source of digital home improvements – products that allow people to switch their boiler off or their lights on, or see who’s ringing their digital doorbell, from anywhere with an internet connection. We are all buying more consumer internet-connected devices – smart TVs, printers, smart kitchen appliances and so on. WRAP predicts that each household will host 15 such devices by 2020<sup>78</sup> – all of them storing users’ personal data after they have connected to the home Wi-Fi. And that’s the catch. At present there is limited guidance for stakeholders or consumers on how to safely recycle or dispose of smart devices in line with data protection regulations and cyber security best practice. As a result, people may hold on to devices longer than they strictly wish or need to.

Government is moving to rectify this. The Department for Culture, Media and Sport (DCMS) ‘Secure by Design’ report<sup>79</sup> contains draft proposals to improve the cyber security of consumer internet-connected products and associated services in the home, such as a Code of Practice for manufacturers and guidance on recycling, resale, reusing and disposal. The BEIS ‘Consultation on Proposals for Smart Appliances’<sup>80</sup> also set out the Government’s intention to consider data handling with respect to recycling, reusing and disposing of smart devices.

We will compile evidence and produce guidance for consumers on the recycling, resale, reuse and disposal of devices. This will be supported by a targeted awareness campaign following discussions with campaign groups, industry and academia, to be launched in spring 2019. We will also review and update the guidance produced for local authorities, producer compliance owners, recyclers (industry/commercial) and waste managers to include internet-connected products. The guidance will take account of the Data Protection Act 2018 and outline measures to prevent unauthorised access or theft when devices are recycled.

78 WRAP (2017) <http://www.wrap.org.uk/content/smart-devices-secure-data-eradication-evidence>

79 DCMS (2018) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/686089/Secure\\_by\\_Design\\_Report\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/686089/Secure_by_Design_Report_.pdf)

80 BEIS (2018) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/690805/Consultation\\_on\\_Proposals\\_regarding\\_Smart\\_Appliances-.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/690805/Consultation_on_Proposals_regarding_Smart_Appliances-.pdf)

## 2.4 Leading by example

It is not enough to expect more of consumers without leading by example ourselves.

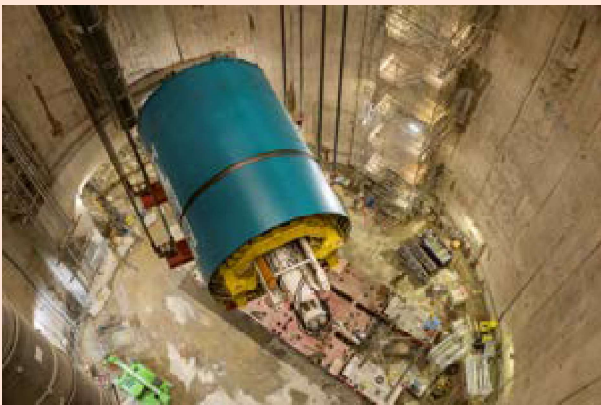
**Actions we will take include:**

### 2.4.1 Procuring more sustainably

More sustainable government procurement can help to generate less waste, and also increase demand for more resource-efficient goods and services and stimulate innovation. The Government is committed under the Greening Government Commitments to buy more sustainable and efficient products and services with the aim of achieving the best long term, overall value for money. We are establishing a more strategic and robust approach that puts social value<sup>81</sup>, including environmental considerations, at the heart of our procurement policy - which will also help support UN Sustainable Development Goal 12 on sustainable consumption and production.

Our Industrial Strategy sets out our aim for broader outcomes, including whole life value rather than simply up-front cost, to be considered at the design stage of major projects. It also ensures that UK supply chains and SMEs will be in the best position possible to compete for public sector contracts. Our ambitions are reflected in our Procuring for Growth Balanced Scorecard, a tool which enables sustainability to be considered and balanced against cost. It is aimed at major government procurement projects in construction, infrastructure and capital investment, and includes environmental impacts and benefits. The upshot is that procurements are not awarded on price alone<sup>82</sup>.

#### Case study - Thames Tideway Tunnel - waste minimisation



The way that we design major projects can be critical to the waste that is ultimately generated. The £4.2 billion Thames Tideway Tunnel will prevent millions of tonnes of untreated sewage flowing into the River Thames every year by embracing Building Information Modelling (BIM), to help avoid inefficiencies such as a lack of coordination in the design of major construction projects. BIM allows all parties involved in the construction to collaborate early on, using

3D digital models to solve design problems through joint-working in a virtual environment. This helps make the process as efficient as possible, saving time and resources at the design

81 The Public Services (Social Value) Act 2012 (the 'Social Value Act', or SVA) requires authorities to consider how what is proposed to be procured might improve the economic, social and environmental well-being of the relevant area, and how, in conducting the process of procurement, it might act with a view to securing that improvement. The table on page 3 of the Commissioner Guidance provides examples of some environmental benefits of social value in practice. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/690780/Commissioner\\_Guidance\\_V3.8.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/690780/Commissioner_Guidance_V3.8.pdf)

82 UK Government services and information (2018) <https://www.gov.uk/government/publications/procurement-policy-note-0916-procuring-for-growth-balanced-scorecard>

and build stage of major projects. BIM also makes it easier to build new infrastructure in a 'modular' way: the constituent parts can be built offsite before being assembled at pace on-site. The potential resource efficiency gains are significant. Five Whitehall departments are working closely on developing a presumption in favour of off-site construction by 2019.

From 2019 we will focus on providing greater social value through government procurement by:

- Extending the requirements of the 2012 Social Value Act in central government to ensure that all major procurements explicitly evaluate social value where appropriate, rather than just consider it;<sup>83</sup>
- Requiring all departments to report on the social impact of major new procurements, and;
- Training all 4,000 commercial buyers in how to take account of social value and procure from social enterprises.

A light-touch '*Balanced Scorecard*' will be developed to assist with this.

Central government procurement is only a small part of total public sector procurement. In setting out our position here, we seek to encourage other public sector bodies to do the same. In the future, we will:

- Use existing procurement networks within central and local government, and elsewhere, to promote the '*Balanced Scorecard*' approach across the public sector;
- Work across government departments to ensure the market is ready to meet new requirements and bid for contracts effectively - including meeting environmental standards, particularly for voluntary, community and social enterprise organisations and SMEs;
- Wherever appropriate, look at embedding demand for more resource efficient goods and services into CCS commercial agreements, passing on savings for customers across the board.

### 2.4.2 Delivering on the Greening Government Commitments, including removing consumer single-use plastics from our estate by 2020

The Greening Government Commitments (GGCs) require departments run their estates and operations more sustainably, and have already driven improvement<sup>84</sup>. By 2020, departments must cut the proportion of waste sent to landfill to 10% or less of the total. They must also improve recycling and cut paper consumption. We are discussing future arrangements that commit government departments to make further, continuous improvements.

A key commitment is to remove consumer single-use plastics from central government buildings by 2020, with individual departments going faster and further where possible. This extends to our

83 When they procure goods, services and works over the EU procurement threshold value.

84 By 2016/17, compared to a 2009/10 baseline, government as a whole had reduced waste by 32%, diverted 87% of waste from landfill and recycled 59% of total waste



global operations, with the Foreign and Commonwealth Office (FCO) announcing that they would eliminate the use of avoidable single-use plastics from UK operations by the end of 2018, and from global operations by 2020.

### Case Study: Reuse of Government Assets Pilot

Prompted by the 2020 Greening Government Commitments challenge to reduce waste, sustainability practitioners across government developed the 'Reuse of Government Assets' pilot scheme - which proved remarkably successful and is still used in a number of government departments. During the 18-month pilot, which went live in April 2016, fourteen Whitehall departments and agencies joined up to manage their surplus stationery, office furniture and equipment more sustainably. Using the Warp-it digital platform, unwanted items were advertised free of charge across all organisations taking part. Any items left after a couple of months were then advertised to other public sector users of the Warp-it system, charities and third sector groups.

The pilot saved an estimated £103,000 in procurement costs and 55 tonnes of CO<sub>2</sub>e, and diverted 26 tonnes of assets from landfill. A review showed that the pilot was successful because senior leaders had pushed for new working practices to happen quickly, because the scheme had enough resources to keep momentum going, and because the benefits that would result were clearly communicated to key stakeholders.

## Chapter 3

# RECOVERING RESOURCES AND MANAGING WASTE



*'No matter what we do, we will generate waste... Even those materials that can be given a new life by reuse or reprocessing will eventually reach a point of such little value that they need to be disposed of'*

Report of the Government Chief Scientific Advisor,  
'From waste to resource 'productivity'

Waste is a very costly misuse of our natural capital. We want to prevent waste occurring in the first place – this is a key principle of this Strategy. But, as the above makes clear, some amount of waste is inevitable. So, where it does continue to occur, we need to manage it in the most resource efficient way possible, in keeping with the waste hierarchy.

The roles of local authorities and the waste sector are critical at this stage of the lifecycle. As Government we must set clear expectations, giving them the confidence to invest in infrastructure to deal with waste and to promote UK-based recycling, and this chapter aims to do just that. And we must, and will, ensure that local authorities are resourced to meet new net costs arising from the policies in this Strategy, including up front-transition costs and ongoing operational costs.

Our long-term ambition is to move away from weight-based recycling targets. Developing the metrics and indicators which will allow us to do this will take time, as is set out in Chapter 8. In the meantime, we will continue to work towards weight-based targets where it makes sense to do so. Our goal is for at least 65% of municipal waste by weight to be recycled by 2035, with no more than 10% ending up in landfill.

We also have an overarching commitment of working towards eliminating food waste to landfill by 2030, which will tackle the problem of landfill emissions head on.

**This chapter sets out how we will:**

- **Improve recycling rates by ensuring a consistent set of dry recyclable materials is collected from all households and businesses**
- **Reduce greenhouse gas emissions from landfill by ensuring that every householder and appropriate business has a weekly separate food waste collection, subject to consultation**
- **Improve urban recycling rates, working with business and local authorities**
- **Improve working arrangements between and better support performance of local authorities**
- **Drive greater efficiency of Energy from Waste (EfW) plants**
- **Address barriers to the use of recycled materials**
- **Encourage waste producers and managers to implement the waste hierarchy in respect of hazardous waste**

## 3.1 Better waste collection and recycling

**We want comprehensive and frequent waste collection systems that capture as much material as possible, promote householder and business participation, and ensure that high levels of quality recyclable or compostable materials are available for reprocessing. This will preserve our stock of natural resources by ensuring as much used material as possible gets made into products again.**

Recycling rates in England have improved since the turn of the century; rising from around 11% to nearly 45% for waste from households<sup>85</sup>. However, progress in England has recently stalled for both domestic and business waste recycling. There has been insufficient action to drive better quantity and quality in recycling. We must make it easier for households, businesses and local authorities to recycle.

Recycling makes the material content of products that can no longer be repaired or reused available to be used in new products. It spares the environment the carbon impacts of extracting and processing virgin materials, and of managing wastes through energy recovery or landfill.



Householders want to recycle more but current arrangements are confusing. A good quality collection service, properly explained, is the answer. This will help to capture more environmentally and economically valuable material, and to improve the quality and quantity of materials that are collected.

For various reasons, including uncertainty about quality, lack of information and high costs when collections are inconsistent, the benefits

of using recycled materials are not fully realised at present. Leaving the EU provides us with an opportunity to review and streamline the regulatory environment to overcome these barriers.

**Therefore, actions we will take include:**

### 3.1.1 Improving recycling rates by ensuring a consistent set of dry recyclable materials is collected from all households and businesses

#### Households

**Subject to consultation we will legislate to allow Government to specify a core set of materials to be collected by all local authorities and waste operators. Timings for introduction will be subject to discussions at spending review.**

**We will consult on which materials should comprise this core set, and which collection systems would be most effective at preserving material quality.** The consultation will be carried out in parallel with the consultation on reforms to the existing packaging waste regulations.

<sup>85</sup> Defra (2018), UK Statistics on Waste [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/683051/UK\\_Statisticson\\_Waste\\_statistical\\_notice\\_Feb\\_2018\\_FINAL.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/683051/UK_Statisticson_Waste_statistical_notice_Feb_2018_FINAL.pdf)

**To support higher levels of recycling by local authorities we will also consult on whether introducing non-binding performance indicators for the quantity of materials collected for recycling and minimum service standards for recycling would support this outcome.**

Subject to consultation these performance indicators and service standards would consider the different circumstances and potential for higher recycling that local authorities experience and would be reviewed regularly to drive performance. Minimum standards for recycling services would help to improve the quantity and quality of what is recycled. Having comprehensive and frequent collection services (including weekly separate food waste collections, on which we will consult) will ensure more reliable services for householders while retaining local flexibility where this is necessary. New statutory responsibilities for local government would be subject to an assessment of new burdens.



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For packaging waste, reform of extended producer responsibility will ensure that the costs of collection and recycling are borne appropriately by those that produce packaging and place it on the market. Local authorities and waste operators will be able to use this support to collect all recyclable packaging waste and drive high quality recycling.

### Businesses

Recycling rates in businesses are often lower than households - it frequently costs businesses more to separate packaging or food waste for recycling. **We will take action, including, where necessary legislating, to ensure that businesses present recycling and food waste separately from residual waste for collection and publish or make available<sup>86</sup> information on what is recycled.**

There are some good examples of shared collection services operating for all businesses along a high street or within a business district, which can help to reduce their costs. **We will investigate these service options alongside other measures to help cut costs, particularly for SMEs.**

### Increasing quality



Last year over 467,000 tonnes of household recycling in England was reported as rejected from recycling plants. Whilst this represents less than 5% of all recycled waste, in some areas levels of contamination are significantly higher; contamination reduces quality and can damage the profitability of recycling. Collection of a core set of materials and clarity over what can and can't be recycled should help improve quality.

<sup>86</sup> Where publishing may breach commercial confidentiality.

Greater collection of glass separate from paper and separate food waste collections would also help to improve quality, increase revenue for local authorities and ensure more packaging can be recycled in closed loop applications (cans to cans and paper to paper ). **As part of establishing a core set of materials for collection, we will review the effectiveness of current arrangements for reporting of quality, and for determining when separate collection is necessary to achieve high quality. This will also take into account reforms to the packaging waste regulations and changes to provisions on technical, environmental and economic practicability in the new Circular Economy Package.** We will consider the need for further guidance, as called for by a number of stakeholders<sup>87</sup>.

### Case Study: Somerset Waste Partnership

Somerset Waste Partnership has been operating a multi-stream collection of dry recycling (the different materials are separated by the householder into several containers) alongside separate weekly collections of food waste since 2004. Working as a partnership to provide a consistent 'kerbside sort' service across the whole county area for such a long time has led to a participation rate of 85%. Somerset adopted multi-stream collections due to the quality of recycle this approach enables them to collect, allowing them to be confident that what they collect can be fully recycled - ideally in the UK and in closed loop processes. In 2017/18 52% of waste from the county was recycled, with 91% of this recycled in the UK - providing high quality raw materials to UK industry.

### Encouraging householders to minimise waste and recycle more

We will maximise the value of our reforms by encouraging behaviour change alongside them. We have previously promoted behavioural measures such as providing rewards or recognising householders' efforts to recycle. Such incentives and nudges, when they accompany good services and communications, can make a real difference to people's engagement in recycling. We will explore new ways to engage positively with the public about recycling, building on the work of charities and non-governmental organisations.

### 3.1.2 Reducing greenhouse gas emissions from landfill by ensuring that every householder and appropriate businesses have a weekly separate food waste collection

Subject to consultation, we will legislate to ensure that this is in place from 2023. The consultation will also explore whether households with gardens should have access to free garden waste collections. New duties will be assessed to account for new burdens, and funded appropriately.

### Food waste collections

UK households produce around 7 million tonnes of food waste each year, of which 5 million tonnes is categorised as still edible, with 2 million tonnes being inedible, requiring treatment through the waste system. Edible food that would otherwise be wasted should be made available to be redistributed and only recycled when it is no longer fit to be redistributed or fed to animals.

<sup>87</sup> For example in the Defra (2018, forthcoming) 'Post Implementation Review of the Waste (England and Wales) Regulations 2011' on legislation.gov.uk.